

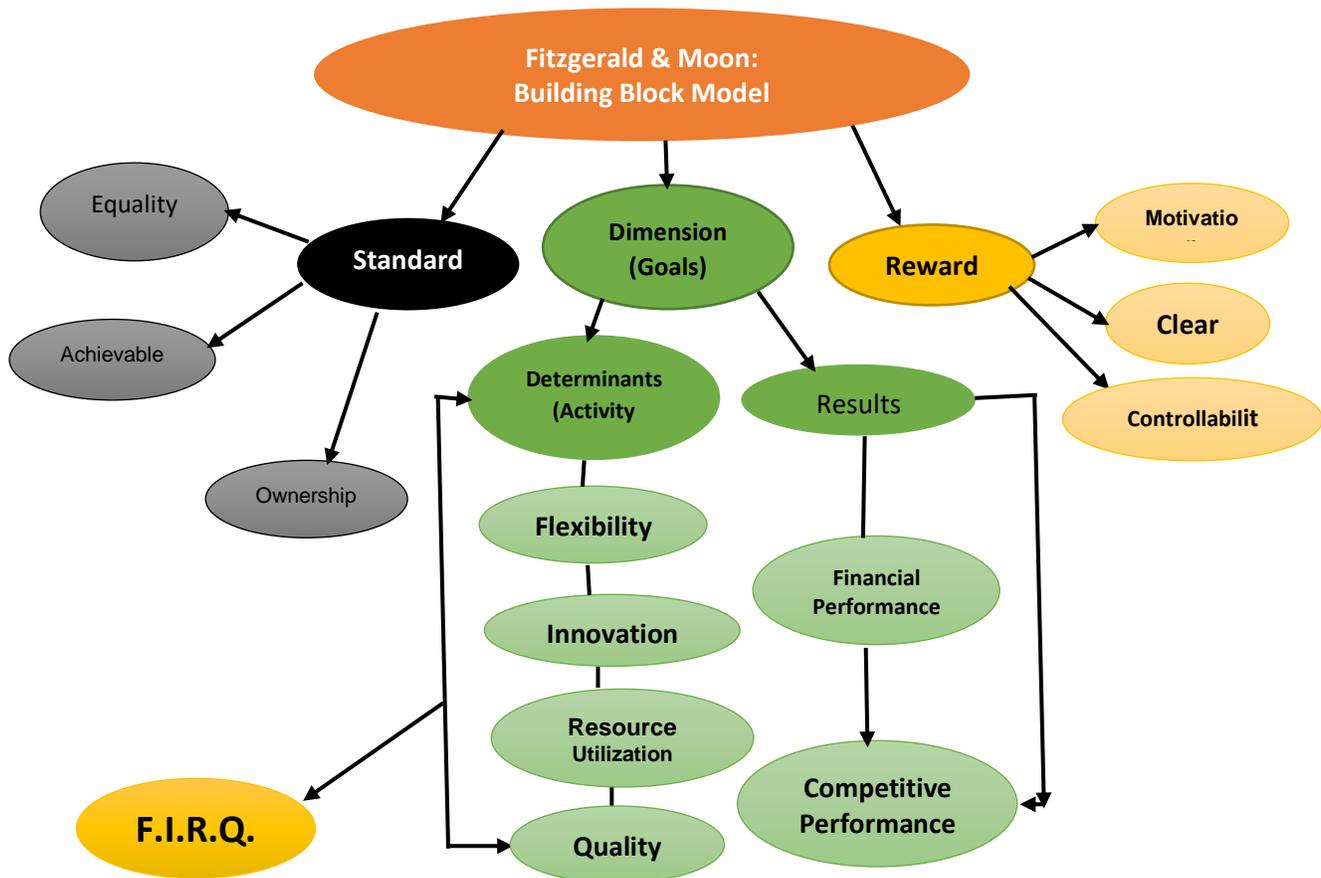
# ALL CHAPTERS - CASE STUDIES

# CHAPTER 8

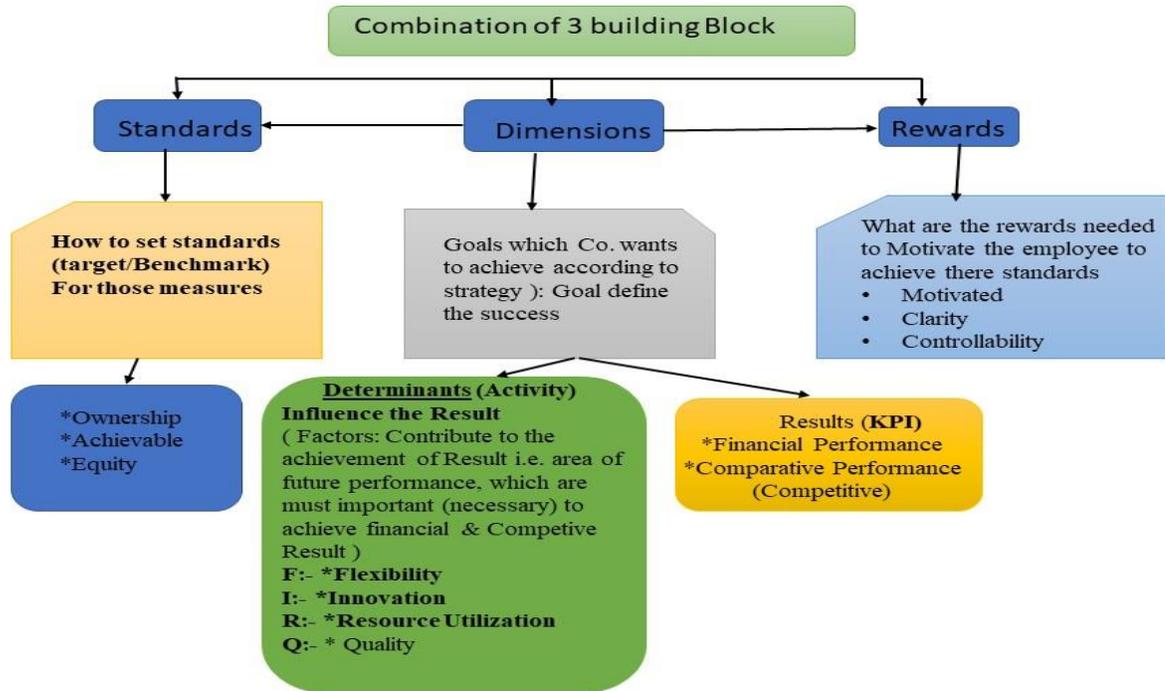
## Performance Measurement and Evaluation

### The Building Block Model (Concept)

Fitzgerald and Moon proposed a Building Block Model which suggests the solution of performance measurement problems in service industries. But it can be applied to other manufacturing and retail businesses to evaluate business performance. Variants of the Building block model are currently used in Australia in the regulation of electricity transmission and distribution, gas transmission and distribution, railways, postal services, urban water and sewerage services, irrigation infrastructure and port access.



# BUILDING BLOCK MODEL (Summary)



## DIMENSIONS: -

- \* Goals which the Company wants to achieve.
- \*To get two success (Result), we should do the following four activities.
- \* We should set the standards (Benchmark, Targets) for Dimensions. If staff meet (beat) the standards, they will get reward.

**Determinants (Activity): -** if targets are given, actuals should be compared with target to measure the performance.

If we manage the determinants in high effective manner, then only positive results can be achieved.

	Concept	Example (measures)
<b><u>Flexibility</u></b> (Should be high) हमारा स्टाफ हर काम कर सके, टाइम भी कम लगे	* Responsiveness * Different range of services to meet different segment of customer *Cater capable/skills to handle immediately change in demand/Sales.	<b><u>Courier Company</u></b> *Delay/ Early response to complaint *High % of order scheduled to customer request <b><u>Restaurant</u></b>

	<p>* Staff can do each work/multiple operation/ change easily. (Time Consumption: Low)</p> <p>* Sufficient finance availability</p>	<p>*Seasonal dish can be prepared by Chef easily without any extra training, Cater seasonal demand.</p> <p><b><u>Cloth: -</u></b></p> <p>* Fast Changing taste in fashion design: applied/by our designer.</p> <p><b><u>School/college/educational institute: - Availability &amp; utilization appointment of lecturer.</u></b></p> <p>* Offer: - online lecture support for long distance learning student. Weekend courses</p> <p><b><u>Beauty parlor: -</u></b></p> <p>Time taken by staff for cutting different style of hairs.</p>
<p><b><u>Innovation</u></b> (Should be on Regular basis, instead of one time) (नयापन)</p>	<p>*Innovative efforts, new design, new variant/Services experiment on Regular basis instead of one time.</p> <p>*Packing should be in such a way: - Recycle.</p> <p>*Convert cash payment system: On line / Paytm.</p> <p>*Introduction of smart phone Application.</p>	<p><b><u>Courier Company</u></b></p> <p>* % of customer using smart phone application.</p> <p><b><u>Hospital: -</u></b></p> <p>*Advance technique in operations</p> <p>*Robot technique in operation.</p> <p><b><u>School/college: -</u></b></p> <p>*New course format</p> <p>*Add new course</p> <p><b><u>Restaurant: -</u></b></p> <p>*Add new dishes every month in menu.</p> <p><b><u>Clothes: -</u></b></p> <p>*Add new fashion design.</p> <p><b><u>Beauty Parlor: -</u></b></p> <p>* Revenue generated from new service pack.</p>
<p><b><u>Resource utilization</u></b></p>	<p>*Optimum utilization of resource,</p>	<p><b><u>Courier Company</u></b></p>

<p>(should be optimum) (कोई कर्मचारी खाली नहीं बैठे)</p>	<ul style="list-style-type: none"> <li>*Labour/driver/Machine/Vehicles i.e., productivity/Efficiency</li> <li>*Revenue per staff/Labour</li> <li>*Van: - Capacity: 100 Transport: 80 (Not advisable)</li> <li>* Production schedule match with demand schedule</li> <li>*Teacher: Student-Ratio</li> </ul>	<ul style="list-style-type: none"> <li>*Average time per delivery</li> <li><b>Restaurant:</b> -High table occupancy Rate (Co-ordination between order taking staff) (Waiting time, lowest as possible)</li> <li>*Production = demand (No spare capacity) idle time of labour.</li> <li>* Use of Free Lance lecturer (How)</li> <li>* Level of staff non-chargeable staff time.</li> <li>* Revamping (सुधार) the order, delivery payment system would improve.</li> <li><b>Beauty parlor: -</b></li> <li>*Revenue per staff</li> </ul>
<p><b>Quality: -</b> (बढ़िया, अच्छा)</p> <ul style="list-style-type: none"> <li>*(Should be standard high)</li> <li>*Should be enough for a Product price paid)</li> <li>*should be measured from eye of customer (Feedback from customer).</li> </ul>	<ul style="list-style-type: none"> <li>* Customer care</li> <li>*High.</li> <li>* No. of repeat customer.</li> <li>*Internal Quality check, Quality control for all unit (branches)</li> <li>*Quality standards are met (be ensure).</li> <li>*No. of customers complaint</li> <li>*Help line use (Doubts /Problems) =?</li> <li>*Noncompliance may require immediate attention of management.</li> <li>*Prompt response to customer claim</li> <li>*Compensation to customer.</li> </ul>	<p><b>Courier Company</b></p> <ul style="list-style-type: none"> <li>*Courier delivery services (Timely)</li> <li>* high % on time delivery.</li> <li>*Misdirected couriers redelivered at no extra cost.</li> <li>*Lost item/damage item</li> <li><b>Hotel: -</b></li> <li>*Good Taste (Hot food), healthy.</li> <li>*Better presentation, Hygienic Food.</li> <li><b>School/College</b></li> <li>*Pass Ratio in exams should be high.</li> <li>*Low amount of complaints/Doubt.</li> <li><b>Hospital: -</b></li> <li>*Recovery of Patient should be excellent.</li> </ul>

<b><u>Results: -</u></b>		
<b><u>Competitiveness: -</u></b> (दूसरे से बेहतर)	<ul style="list-style-type: none"> <li>*Differentiate Product / Service</li> <li>*Open more franchisee</li> <li>*Sales growth</li> <li>*Relative Market share and Position. (market share i.e., conversion rate of customer)</li> <li>*Measures of the Customer Base.</li> <li>* Conversion Ratio</li> </ul>	<b><u>Restaurant</u></b> <ul style="list-style-type: none"> <li>*Healthy food choice in menu.</li> <li>* Provide competitive Edge.</li> </ul>
<b><u>Financial Performance: -</u></b> (लाभ कमाना)	<ul style="list-style-type: none"> <li>*Gross Profit Ratio</li> <li>*Net Profit Ratio</li> <li>*Operating Margin Ratio.</li> <li>*Profitability</li> <li>*Liquidity</li> <li>*Capital Structure</li> <li>*Market Ratios</li> </ul>	Fees level, lecture cost, study material cost.

**Standards: -** (Targets / benchmark should be set so that Dimensions (Goals) can be achieved easily i.e., Standards (Targets) set should meet these criteria to achieve the good performance.

**I: - Ownership: -**

(कौन किस -2 काम के लिए जिम्मेदार है)

Performance measure should be acceptable to everyone. Employees should be got involved in the identification of measures rather than being imposed on them. Ownership means here is responsibility for the results.

Objective: -	Clearly define the responsibility of each staff.
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KPI	<p><b>Example: -</b></p> <pre> graph TD     Restaurant[Restaurant] --&gt; HeadOrder[Head of order Taking dept.]     Restaurant --&gt; Chief[Chief]     Restaurant --&gt; HeadBranches[Head of each branches]     HeadOrder --&gt; Revenue[Revenue/Waiting time of customers]     Chief --&gt; QualityFood[Quality of Food]     HeadBranches --&gt; EliminateFraud[*To eliminate fraud/error]     HeadBranches --&gt; KeepSmooth[*To keep all operation smoothly]     Company[Company] --&gt; Sales[Sales Department]     Company --&gt; Production[Production Department]     Company --&gt; Purchase[Purchase Department]     Sales --&gt; Orders[Orders/Revenue]     Production --&gt; QualityProduct[Quality Product]     Purchase --&gt; Inventory[Inventory Management] </pre>
Suggestion:	Proper authority & Responsibility should be assigned.

## 2: -Achievability: -

### **Objectives: -**

- Not too high, not too low, should be realistic.
- De-motivate if standards are set too high.
- **Zero waiting time for customer: -** Not possible.
- Performance measure should be realistic. Ex, using actual results for the competitors to set as target. Employee will not be motivated to achieve targets if consider them impossible.

## 3: - Equality: -

### **Objectives: -**

- Equal challenge for all.
- Order taking staff X Equal work assigned
- No discrimination.
- Performance measures should be equally challenging for all parts of business. Relaxation given to one part of the business leads to perception of unfair treatment which hinders productivity.

## Rewards: -

For achievement of standards, Rewards, bonus, facilities should be given. A good system should have following characteristics i.e., Rewards block make sure that employees are motivated to attain the standard: -

**1: - Motivation: -** High Rewards: -High motivated maybe monetary, non-monetary i.e., employee of the month reward.

- **May be fixed, may be Variable: -** according to sales
- **Chief: -** according to Quality.
- **Bonus: -** Substantial (not 2 % or 4 %), employees of the month.
- Rewards scheme should be set in manner which motivates employees to achieve the business goals. If sales growth is desired than bonus can be linked to performance measures, like increase in number of units sold than previous year.

**2: -Clarity: -** Clearly/Properly communicated/designed to each staff: - What they will receive

- How their performance can be measured.
- **Production Manager: -** Time Save.
- **Order taking staff: -** Customer waiting time
- Rewards scheme should be clearly communicated to employees in advance. What kind to performance will be rewarded and how their performance will be measured?

**3: - Controllability: -** Employee should not be penalized for the situations which becomes beyond his control.

- **Example: -** Purchase manager: - Price increase due to govt policy. (uncontrollable)
- **Chief: -** Menu, Quality (Controllable)
- **Sales: -** Price factor. (Controllable)
- Employees should only be reward or penalized of the result over which they some control or influence

**CRUX: -** If standards & Rewards are set appropriately, staff will be engaged & motivated, it is then more likely that Goals i.e., Dimensions of the organization will be achieved.



## CASE STUDY No: - 1: Building Block Model

PHL is solely responsible for all customers within a specified area. It collects couriers from customers residing within ambit of its own area for delivery both within the specific area covered by the warehouse and elsewhere in India.

After collections of couriers, a warehouse forwards them for delivery outside its own area to the warehouses from which the deliveries are to be made to the customers.

**The target values consist of:**

- I. Warehouse revenue and Profitability;
- II. Courier delivery services and customer care; and

Incentive is based on a points system. It is also used as a stimulus for each warehouse improving the operational effectiveness. One point is awarded in case where the target value for each item in the Annexure is either achieved/exceeded, and a zero point where the target is not achieved.

Particulars	Revenue		Profit	
	Target	Actual	Target	Actual
	₹ million	₹ million	₹ million	₹ million
Company overall	300	360	45	48
Warehouse				
City SG	24.00	22.50	3.60	3.45
City HK	21.00	27.00	3.15	3.60
City NY	18.00	21.00	2.70	3.30
City NZ	27.00	33.00	4.05	4.20

In order to calculate points of each warehouse, actual profit as a % of actual revenue must exceed the target profit as a % of Target revenue.

### Courier Delivery Services and Customer Care

Particulars	Target %	Actual			
		SG%	HK%	NY%	NZ%
Measure (% of total):					
% of order scheduled to customer request	3.00	2.85	3.15	2.70	3.60
% of customer using smart phone app.	6.00	6.30	5.85	4.95	7.65
Average time per delivery	1.50	1.05	1.35	1.20	1.80
% on time delivery	1.50	1.65	2.10	0.45	3.00
Misdirected couriers re-delivered at no extra cost	1.50	0.90	1.35	1.20	2.85
Damaged items	3.00	2.25	3.60	2.25	2.70

### Required

Prepare a report for the directors of PHL.

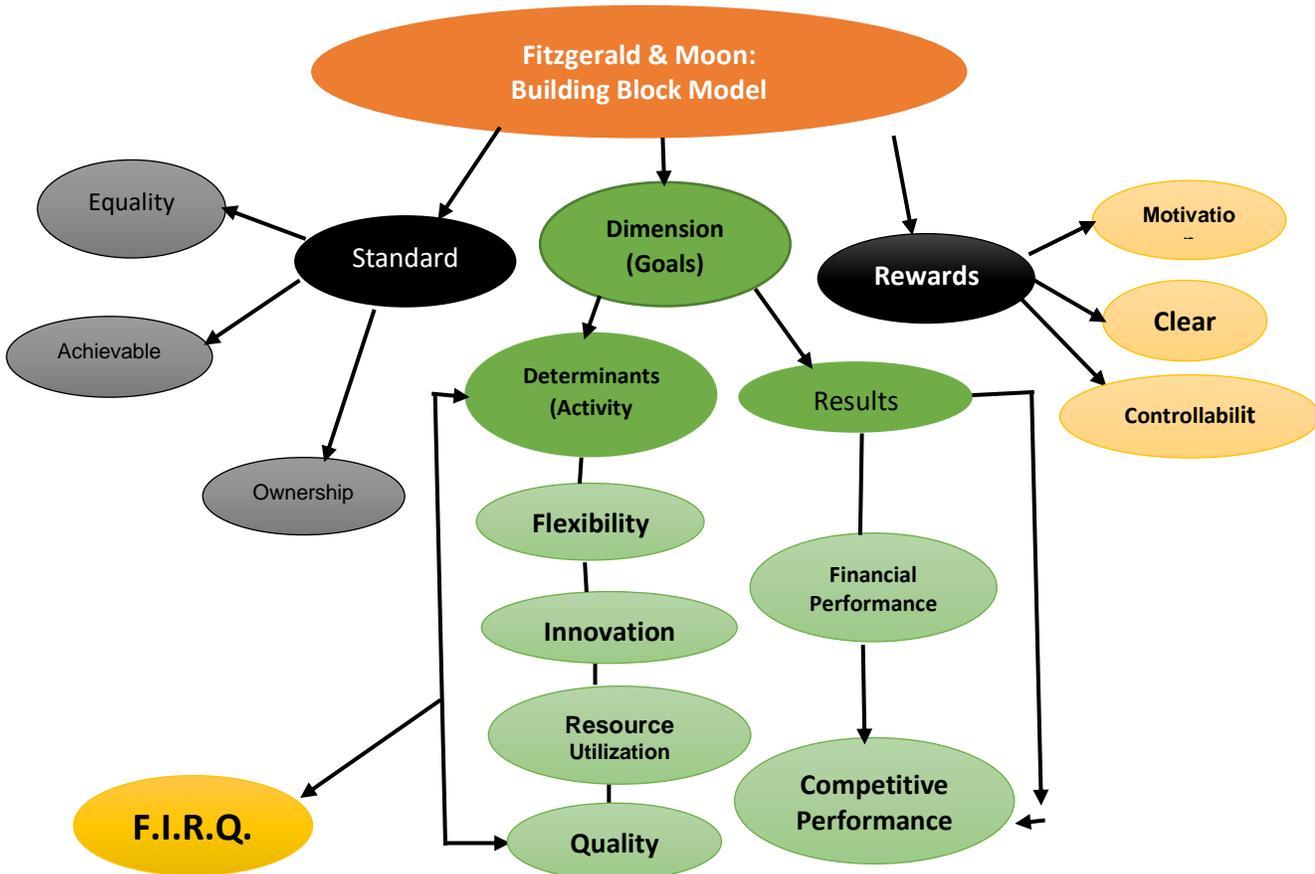
- ASSESS PHL from perspective of financial performance, service quality, Utilization, Flexibility, innovation, and competitiveness.
- EXPLAIN how the Standards and Rewards blocks support the Dimensions block in case of Building Block Model.

**(ICMA London)**

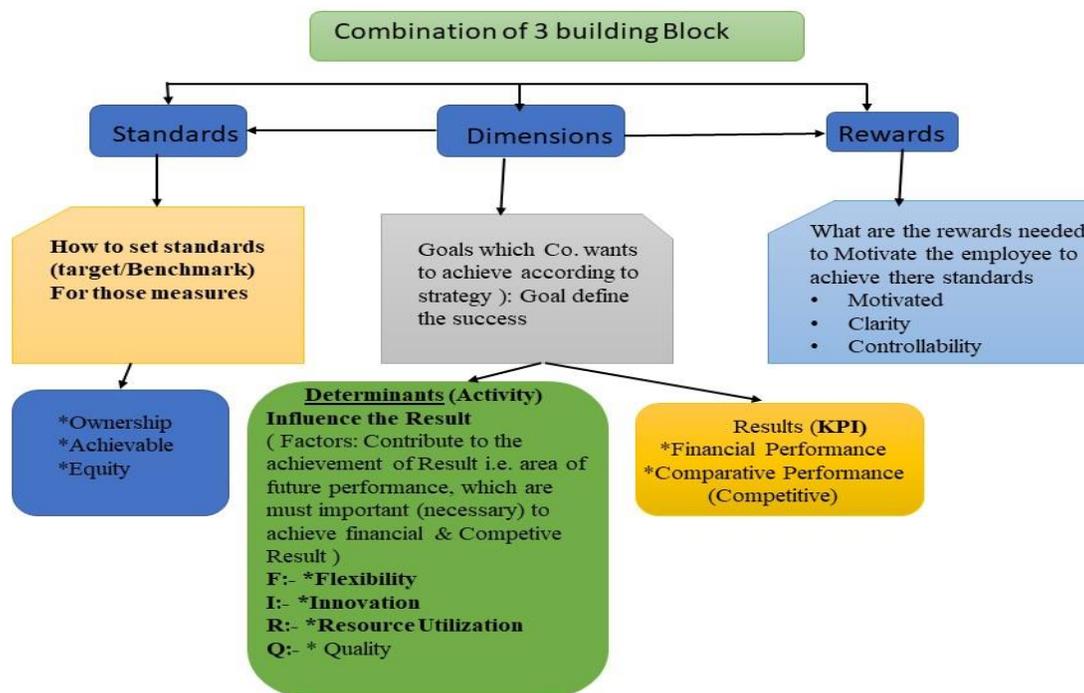
**Solution: -**

# The Building Block Model

Fitzgerald and Moon proposed a Building Block Model which suggests the solution of performance measurement problems in service industries. But it can be applied to other manufacturing and retail businesses to evaluate business performance. Variants of the Building block model are currently used in Australia in the regulation of electricity transmission and distribution, gas transmission and distribution, railways, postal services, urban water and sewerage services, irrigation infrastructure and port access.



## BUILDING BLOCK MODEL (Summary)



**DIMENSIONS: -**

\* Goals which the Company wants to achieve.

\* (To get 2 success (Result), we should do the following four activities.)

For Dimensions: - We should set standards if staff meet (beat) the standards, they will get reward.

**Determinants (Activity):** - if targets are given, actuals should be compared with target to measure the performance.

If we manage the determinants in high effective manner, then only positive results can be achieved.

**Warehouse – Points Table**  
*for the year ended 31 March 2019*

	SG	HK	NY	NZ
<b>Revenue and Profit</b>				
Revenue	0	1	1	1
Profit (see note below)	1	0	1	0
Total Points earned ... (A)	1	1	2	1
Ranking	II	II	I	II
<b>Courier Delivery Services and Customer Care</b>				

<b><u>Flexibility</u></b>				
% of order scheduled to customer request	0	1	0	1
<b><u>Innovation</u></b>				
% of customer using smart phone app.	1	0	0	1
<b><u>Resource Utilization</u></b>				
Average time per delivery	1	1	1	0
<b><u>Quality</u></b>				
% on time delivery	1	1	0	1
Misdirected couriers re-delivered at no extra cost	1	1	1	0
Damaged items	1	0	1	1
Total Points earned ... (B)	5	4	3	4
Ranking	I	II	III	II

SG has achieved the best performance with (6) points. NZ and HK have given a reasonable level of performance with (5) points each.

SG is the only warehouse which has achieved both increased revenue and increased profit over targets.

In the courier delivery services and customer care, SG has achieved all (5) of the target standards. The data of NY indicates, the need for investigation due to achievement of only (3) out of Total targets.

- (i) **Standards: -** (targets/benchmark should be set so that Dimensions (Goals) can be achieved easily i.e., Standards (Targets) set should meet these criteria to achieve the good performance.

### **1: -Owner ship: -**

(कौन किस -2 काम के लिए जिम्मेदार है

<b>Objective: -</b>	Clearly define the responsibility of each staff.
<b>Suggestion:</b>	Proper authority & Responsibility should be assigned.

### **2: -Achievability: -**

**Objectives: -**

- Not too high, not too low, should be realistic.
- De-motivate if standards are set too high.
- Zero waiting time for customer: - Not possible.

### **3: -Equality: -**

**Objectives: -**

- Equal challenge for all.
- No discremenency

### Rewards: -

For achievement of standards, Rewards, bonus, facilities should be given. A good system should have following characteristics i.e., Rewards block make sure that employees are motivated to attain the standard: -

1: -Motivation: - High Rewards: -High motivated maybe monetary, non-monetary i.e., employee of the month reward.

- May be fixed, may be Variable: - according to sales

Bonus: - Substantial (not 2 % or 4 %), employees of the month.

2: - Clarity: - Clearly/Properly communicated/designed to each staff: - What they will receive

- How their performance can be measured.

Order taking staff: - Customer waiting time

3: - Controllability: - Employee should not be penalized for the situations which becomes beyond his control.

- Sales: - Price factor. (Controllable)

CRUX: -If standards & Rewards are set appropriately, staff will be engaged & motivated, it is then more likely that Goals i.e., Dimensions of the organization will be achieved.



## CASE STUDY No. 2: - Building Block Model "EDUCATION INSTITUTE"

FL Provided training on financial subjects to staff of small and medium-sized business. Training is at one of two levels- for clerical staff, instructing them on how to use simple financial accounting computer packages, and for management, on management accounting and financial management issues.

Training consists of tutorial assistance in the form of workshops or lectures and the provision of related material-software, texts and printed notes.

Tuition days may be of standard format and content, or designed to meet the client's particular specifications. All courses are run on client premises and, in the case of clerical training courses, are limited to 8 participants per courses.

FL has recently introduced a helpline services which allows courses participants to phone in with any problems or queries arising after courses attendance. This is offered free of charge.

FL employs administrative and management staff, course lectures are hired as required, although a small core of technical staff is employed on a part time basis by FL to prepare customers - specific material and to man the helpline.

Material for standard courses is bough t in form a group company, who also print up the customers -specific courses material.

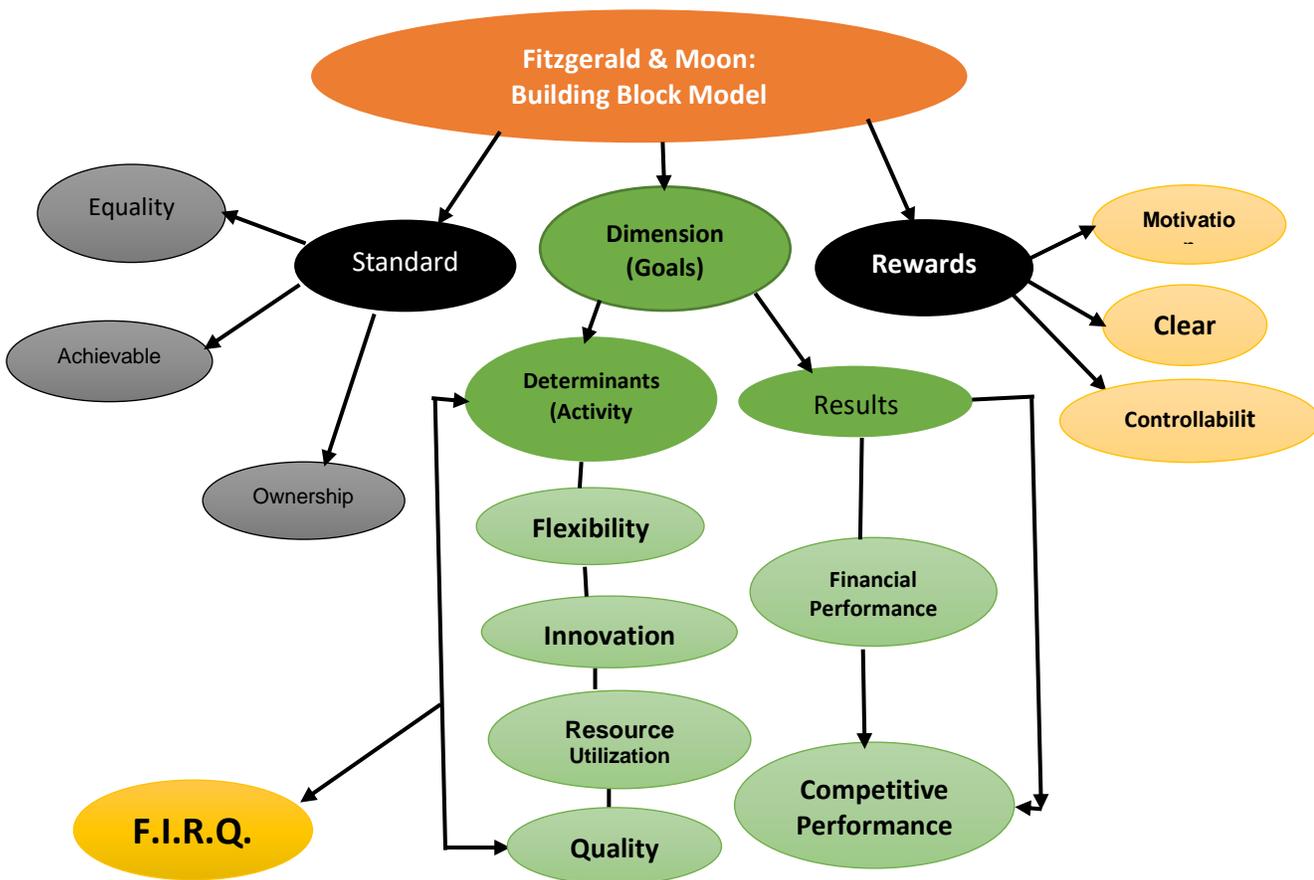
Required: -

Suggest a measure for each of the Four dimensions of the building block model,

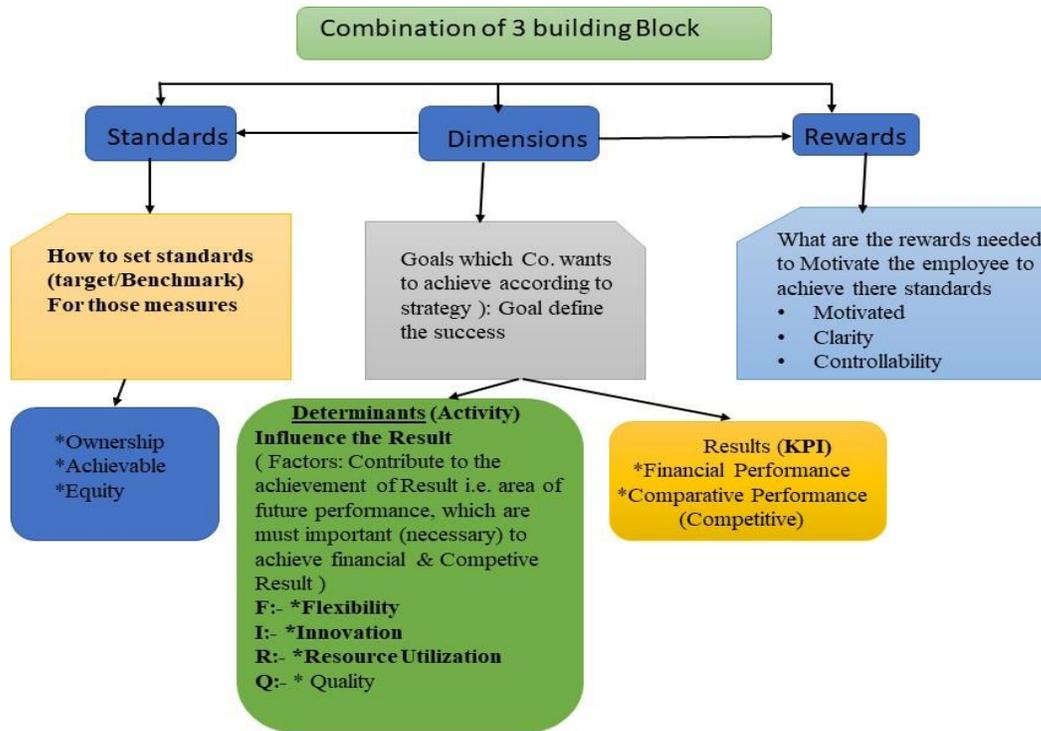
**Solution: -**

## The Building Block Model

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# BUILDING BLOCK MODEL



## DIMENSIONS: -

\* Goals which the Company wants to achieve.

\*To get two success (Result), we should do the following four activities.

\* We should set the standards for Dimensions. If staff meet (beat) the standards, they will get reward.

**Determinants (Activity): -** if targets are given, actuals should be compared with target to measure the performance.

If we manage the determinants in high effective manner, then only positive results can be achieved.

	Measures
<b><u>Flexibility</u></b> (Should be high) (हमारा स्टाफ हर काम कर सके, टाइम भी कम लगे)	Hire as and when required all lecturer. Skill and experience of lecturer.
<b><u>Innovation</u></b> (Should be on Regular basis, instead of	No. of new courses, New course format. FL has recently introduced a helpline services which

one time) (नयापन)	allows courses participants to phone in with any problems or queries arising after courses attendance.
Resource utilization (should be optimum) (कोई कर्मचारी खाली नहीं बैठे)	Use of free-lance lecturer (How) Level of non-chargeable staff time.
<b>Quality: -</b> (बढ़िया, अच्छा) *(Should be standard high) *Should be enough for a Product price paid) *should be measured from eye of customer (Feedback from customer).	No. of customer (students) complaint should be low; Helpline use should be at least level because if teaching quality is high than complaint as well as helpline usage would be low or negligible.

(ICMA London)



### CASE STUDY No.: - 3: Building Block Model “BEAUTY PARLOUR”

The Soup Ltd. offers a range of beauty parlor services like hair care, body care, manicures/ pedicures, skincare, etc. It has 150 Centre/s across the country. The business of beauty parlor is extremely competitive in all region. Each centre operates autonomously and managers are able to offer customize services.

Soup’s mission statement is “to inspire and enhance beauty by using knowledge and experience”. To establish long term relationship of trust and commitment with clients, Soup wants to provide their client highest level of satisfaction with emphasis on;

- Service Customization
- Professionalism, Work, and Clinical Responsibility
- Client’s Feedback
- Company has developed a website where it creates blogs, post high-quality content related to beauty tips. Website is also connected to social media to reach customers. If a customer searches Soup’s services on search engine, it automatically redirects to the place of nearest service center. Soup’s all services are presently booking through online channel.
- Results for one of the centers, “Roop”, are given below. The column headed “Centre” shows the average figures for all Centre/s:

Particulars	Roop Oct’20	Centre Oct’20
Revenue (Rs.)	91,26,000	1,08,66,900

Gross profit (Rs.)	48,50,400	51,37,740
Number of senior Beauticians	90	110
Number of junior Beauticians	60	55
Number of website hits	15,010	19,260
Total number of services booked online and completed	9,915	12,270
Number of services taken from repeat customers	1,510	1,605
Total time spent completing jobs (hours)	24,120	25,880
Number of new service packages	3	2
Customer percentage in terms of feedback forms showing score of 9 or 10	86%	77%

### Notes

- (1) Beauticians are categorized as 'senior' if they have been qualified for more than three years.
- (2) 'Junior' Beauticians includes both trainee beauticians and beauticians who have been qualified for less than three years.
- (3) The Roop launched three new service packs during the year:
  - free coupon of worth Rs.600 for services over and above Rs.1,200.
  - a head massage costing only Rs.240, instead of the usual Rs.480, for 10 days advanced bookings.
  - a haircut Rs.120 will be charge, which usually costs Rs.360, for all customers booking hair spa.

These three new service packs produced revenues of Rs.7,92,000; Rs.6,96,000 and Rs.6,48,000 respectively. Two comparable new service packs developed by other centre's produced revenues of Rs.5,28,000 and Rs.5,04,000.

4: - Customers to rate the particular centre from 1 to 10 in an online feedback form with 10 being the best.

The Chief Executive Officer (CEO) of Soup has recently attended a webinar and heard about Building Block Model of Performance Management. The CEO is interested to know how the dimensions block could be applied at Soup Ltd.

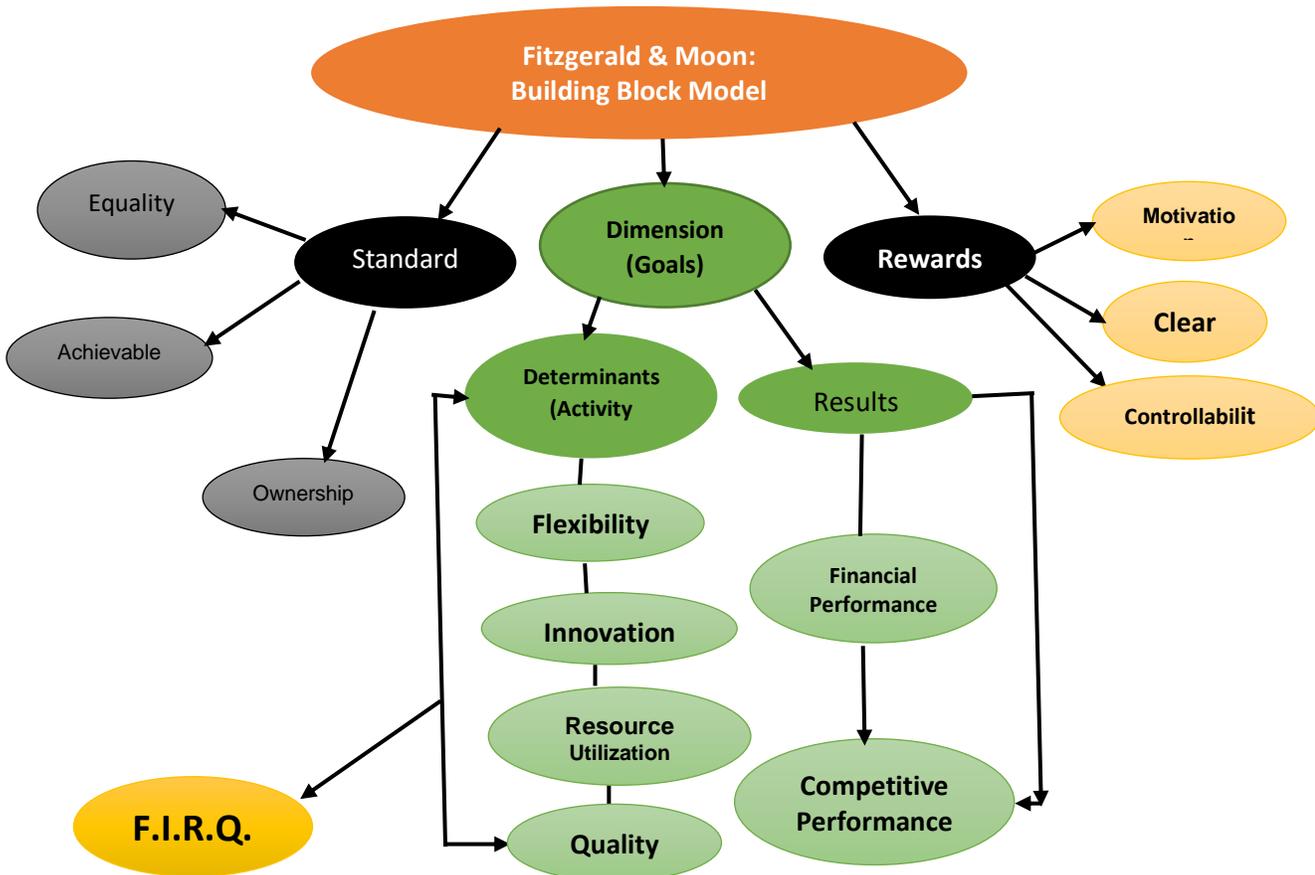
### Required

- (i) ANALYZE Roop's performance relative to the other Centre/s.
- (ii) EXPLAIN how the Standards and Rewards blocks support the Dimensions block in case of Building Block Model.

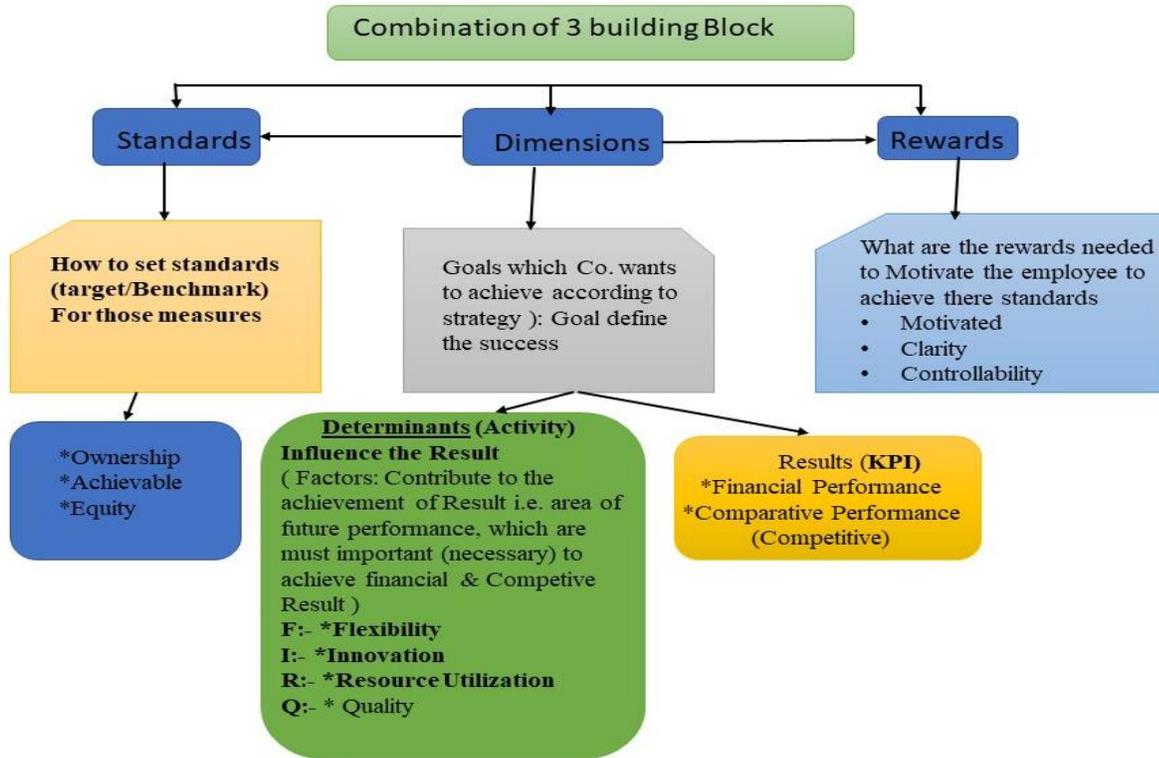
**Solution:- (i)**

# The Building Block Model

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# BUILDING BLOCK MODEL



If we manage the determinants in high effective manner, then only positive results can be achieved.

## **DIMENSIONS: - -**

\* Goals which the Company wants to achieve.

\*To get two success (Result), we should do the following four activities.

\* We should set the standards for Dimensions. If staff meet (beat) the standards, they will get reward.

**Determinants (Activity):** -if targets are given, actuals should be compared with target to measure the performance.

	Concept	Measures
Flexibility (हमारा स्टाफ हर काम कर सके, टाइम भी कम लगे)		
	Roop	Centre/s Average
Time taken per job (hrs.)	2.43 (24,120/ 9,915)	2.11 (25,880/ 12,270)

Explanation: -The comparison shows that Roop takes longer time to complete a job than the other Centre/s average, which is not really good, and is probably because of they have slightly

*less experienced staff* on the whole, but it could also be that they *do a more comprehensive job* than other Centre/s. Given the fact that they have a higher % of return customers than the other Centre/s and they are also graded 9 or 10 by most of the customers (86%). Therefore, this cannot be viewed as too adversely.

### Innovation (नयापन)(Should be on Regular basis, instead of one time)

	Roop	Centre/s Average
Revenue generated from new service packs (in percentage)	23.4% {(7,92,000 + 6,96,000 +6,48,000)/ 91,26,000} ×100	9.5% {(5,28,000 + 5,04,000)/ 1,08,66,900} × 100

Explanation: - Roop is offering a wide variety of service packs to its customers. The ratio of 23.4% indicates that Roop has really outperformed other Centre/s on this front, generating a far larger part of its revenue by the introduction of new service packs, which must have attracted customers. This is a really good performance.

### Resource utilization (should be optimum) (कोई कर्मचारी खाली नहीं बैठे)

	Roop	Centre/s Average
Revenue per beautician (Rs.)	60,840 (91,26,000/ 150)	65,860 (1,08,66,900/ 165)

Explanation: - The *crucial resource in a service company is its staff* and so these indicators measure how this resource is being utilized.

Roop's utilisation of its staff is lower than that of the other Centre/s by Rs.5,020 per beautician. This clearly links in with the point that the average time to complete a job is longer at Roop than other Centre/s. However, given that Roop uses a slightly less experienced staff than other Centre/s and the fact that its gross margin is higher than the average, this should not also be viewed too adversely.

### Quality:- (बढ़िया, अच्छा)

	Roop	Centers Average
Jobs from repeat	15.23%	13.08%
Customers in Percentage)	(1,510/9,915) X 100	(1,605/ 12,270) X 100

Quality is a key aspect of Roop's service to customer and if it is poor, customers will not return. Again, Roop has surpassed the other center's on average by 2.15 percentage points. Though, it

has a lower ratio of senior beauticians (1.5) than other Center's (2), it might be possible that Roop has a portfolio of enthusiastic staff. So, the quality of work is probably better, thus the higher level of repeat customers.

Results: -

Competitiveness: - दूसरे से बेहतर

	Roop	Centre/s Average
Website hits converted into orders (in percentage)	66.06% $(9,915/15,010) \times 100$	63.71% $(12,270/ 19,260) \times 100$

Explanation: -This ratio shows whether Roop's services are *attractive compared to its competitors*, which is essential if it is going to persist in such a competitive market. It has performed considerably better than Centre/s average, having converted 66.06% of website hits into jobs, compared to the 63.71% converted by other Centre/s. This is a good outcome.

Financial Performance ( लाभ कमाना)

	Roop	Centre/s Average
Gross profit ratio	53.15% $(48,50,400/ 91,26,000) \times 100$	47.28% $(51,37,740/1,08,66,900) \times 100$

Explanation: - Gross profit ratio is the *measure for financial performance*. It indicates the percentage of revenue which exceeds the cost of goods sold.

Roop's gross profit ratio is 5.87% higher than the average, which is a good result. This could be because of new service pack sales. It is also likely to be because of ratio of senior beauticians to junior beauticians (1.5), which is lower than the average (2) and junior beauticians will invariably be paid less than senior ones.

**Standards: -** (targets/benchmark should be set so that Dimensions (Goals) can be achieved easily i.e. Standards (Targets) set should meet these criteria to achieve the good performance.

**1:-Owner ship: -**

(कौन किस -2 काम के लिए जिम्मेदार है)

<b>Objective: -</b>	Clearly define the responsibility of each staff.
<b>KPI</b>	
<b>Suggestion:</b>	Proper authority & Responsibility should be assigned.

**2: -Achievability: -**

**Objectives: -**

- Not too high, not too low, should be realistic.
- De-motivate if standards are set too high.
- Zero waiting time for customer :- Not possible.

### **3: -Equality: -**

#### **Objectives: -**

- Equal challenge for all.
- No discremenency

### **Rewards: -**

For achievement of standards, Rewards, bonus, facilities should be given. A good system should have following characteristics i.e., Rewards block make sure that employees are motivated to attain the standard: -

**1: -Motivation: -** High Rewards: -High motivated maybe monetary, non-monetary i.e., employee of the month reward.

- May be fixed, may be Variable: - according to sales
- Bonus: - Substantial (not 2 % or 4 %), employees of the month.

**2: - Clarity: -** Clearly/Properly communicated/designed to each staff: - What they will receive

- How their performance can be measured.
- **Order taking staff: -** Customer waiting time

**3: - Controllability: -** Employee should not be penalized for the situations which becomes beyond his control.

- Sales: - Price factor. (Controllable)

**CRUX: -** If standards & Rewards are set appropriately, staff will be engaged & motivated, it is then more likely that Goals i.e., Dimensions of the organization will be achieved.

**(ICMA London)**



## CASE STUDY No. 4: - Fitzgerald & Moon's Building Block Model "RESTURANT".

**Grab and Go** is a fast-food joint operating in a very competitive business environment. It is a profitable business with very good prospects for growth. A strategy development meeting is underway to chalk out a plan to improve business growth in a very systematic measurable manner.

### **The following information is given to you:**

Grab and Go has the following mission statement "Derive strength to grow in scale using our passion for the craft of cooking and service that will satisfy our customers, employees and other stakeholders." Grab and Go is a closely held partnership firm with five partners. It started at a scale of operations that catered to the local demand within a locality. Reputation for good quality

food and service has helped it scale up its operations in the recent years. Most of the key decisions relating to operations like decision about the menu and its method of preparation, product pricing, finance, marketing, administration etc. are centralized. Skilled chefs, managers for various functions and the firm's partners are part of this core team.

A general survey published in a food trade magazine highlighted people's perception about fast food diet. Predominant opinion was that the current food platter available in food joints across the town was not a healthy option. People want healthier choices in the menu when they dine out. At the same time, they do not want to compromise on taste or presentation of the food item. The other focal point for improvement was the order taking system. In most food joints, the current system is manual where the order taking staff note down a customer's order on paper, send it to the kitchen and then deliver the order on intimation from the kitchen, which is also done manually by the kitchen staff. This system has problems like errors in taking down orders, most times delivery staff are unaware of the content in an item or its availability, delays in delivery leading to customers complaining about food served cold etc. This problem takes away the pleasure of dining out and is leaving customers dissatisfied. Another scope for improvement is that customers want more payment options other than cash to settle their bills. With the advent of plastic money and mobile e wallet payments carrying cash around has become cumbersome for most of them.

The partners have decided to use this as an opportunity to develop Grab and Go as the niche food joint addressing the customer's concerns, while managing to remain profitable. Consequently, Grab and Go plans to expand by providing more choices along with its regular menu to health-conscious customers. Also, revamping its ordering, delivery and payment system would improve customer experience. A reasonable return at the overall firm level would be a return on equity (Net Income/Total Partnership Capital) of 25% each year. Capital structure will remain unchanged. The partners are not interested in diluting their share by bringing in new partners or taking external funding with ownership stake. They may however utilize bank financing for expansion, but only if required.

Expansion of business will entail opening new branches in other localities as well as forging franchise with other stakeholders. However, Grab and Go is not clear how to measure market share since the fast-food industry market is not entirely an organized sector. There is no clear information about the overall revenue of the whole sector.

In the past, it was quality of its products that drove growth. The management wishes to maintain high quality standards across branches and franchisee. Therefore, an internal quality control department may be established to look into the same. External certifications from government food inspectors and other recognized agencies would also be required to be met. Quality refers to both product quality and service quality, in this case, service being an inherent part of customer experience.

The staff at Grab and Go are also excited at this opportunity. Expansion of the food joint would present a more dynamic work culture. Chefs would have the opportunity to enhance their skill

by trying out various ways to cater to the consumer's palate. Ordering and delivery staff would have the opportunity to enhance their people management skills. This learning opportunity would definitely be an impetus for their career growth. With expansion chances of promotion within the organization increase. Financially, better business leads to the expectation of better pay and reward system.

Consequently, the management is intent on developing a performance management system that tracks performance across the organization. Among the different models, the Building Block Model is being considered.

## Required

ADVISE the partners how the Building Block Model at Grab and Go could be implemented.

**Solution:** - (The following solution are as per ICAI Study Material, the students are requested just to read once)

Performance management using the Building Block Model poses three questions based on which the performance measurement system is developed: *What dimensions of performance should the company measure?*

Dimensions are the goals that the company wants to achieve based on its overall strategy, those goals that define its success.

*How to set the standards (benchmarks) for those measures?*

*What are the rewards needed to motivate employees to achieve these standards?*

### Dimensions

Dimensions (goals) include financial and non-financial goals. Dimensions are further categorized as into results and determinants. Results are tracked as (a) financial performance and (b) competitive performance. Determinants are tracked as (a) quality, (b) flexibility, (c) innovation, and (d) resource utilization. Determinants influence results.

### Results

(a) **Financial Performance:** Grab and Go is a closely held partnership with 5 partners. Partners are interested in earning profits that have been benchmarked at an overall return on equity of 25% each year. This can be derived from periodic financial statements that get prepared as part of the accounting function. Partners want to retain the current capital structure. This implies that they do not have any plans to go public or have other external funding with ownership stake. They may take loans from banks for funding their expansion. Consequently, if they want to expand, the firm has to make sufficient profits that will yield ample cash reserves. Therefore, Grab and Go's financial performance dimensions should also include profitability ratios like gross profit ratio, net profit ratio, operating margin, return of capital employed (if bank loans are taken) etc. Cash profit and changes in cash reserves may also be included as dimensions of performance. These measures should be

tracked at the firm's overall level as well at the individual branch/franchisee level.

- (b) **Competitive Performance:** Grab and Go was to be a niche joint in a highly competitive segment. However, to measure how it compares with its peers there is a limitation in terms of availability of information due to the unorganized nature of the fast-food industry. All the same, one of the measures that can be helpful are the number of branches / franchisees the firm is able to open.

Grab and Go is also likely to have a competitive edge because it is foraying into providing healthier food choices along with its regular menu. Since this is unique among its segment, it will retain a competitive edge until its peers start replicating the same. Therefore, one other measure for competitive performance could be the spread and uniqueness of Grab and Go's menu as compared to its peers. Information for this could be gathered from published / researched sources like trade magazines as well as informal sources like customer feedback / word of mouth.

### **Determinants**

- (a) **Quality:** Quality drove past performance and it will continue to drive performance even after expansion. For product quality, the management should track if internal quality checks and external certifications are met periodically. Quality control should cover all branches and franchisees. Non-compliance may require immediate attention of the management. For service quality, periodic training programs can be initiated to educate the staff with people management skills. Therefore, Grab and Go should determine parameters that the management would be interested in ensuring that quality standards are met and how non-compliance should be reviewed.
- (b) **Innovation:** Innovation involves experimenting with the appropriate inputs which make them healthy. At the same time, the healthier option should satisfy the taste and presentation preference of customers. This requires innovative efforts from qualified and skilled chefs. This will give the competitive edge to Grab and Go. Innovation has to be constant and not a onetime exercise. Therefore, management may review the number of new variants that have been introduced in the menu, regularity of these introductions and customer feedback of the same.
- (c) **Flexibility:** Growth in scale of operations combined with a competitive business environment implies that Grab and Go should have some flexibility in its operations. This could mean ability to hire staff quickly, cater to seasonal surges in customer's demand etc.
- (d) **Resource utilization:** Better utilization of resources help business function efficiently. Revamping the order, delivery and payment system would improve the way resources (kitchen, ordering and delivery staff) operate. Lesser errors and delays would increase capacity utilization, freeing up time to cater to more customers. Consequently, pressure on

resources decreases. Therefore, some indicators to be tracked can be overtime / idle time of kitchen, ordering and delivery staff, turnaround time in these functions, table occupancy rate, breakage, or wastage of material etc. Again here, the management should chart out the appropriate dimensions that will help them track resource utilization.

### **Standards**

Standards are the benchmarks or targets related to the performance metric that is being tracked under each dimension. To be useful, standards should have the following characteristics:

- (a) **Ownership:** It is important to establish who in the organization structure is responsible for achievement which performance metric. Grab and Go has to consider this very carefully. As explained in the problem, many key management functions like decisions about the menu and its preparation are determined by a core team. Similarly, the centralized core team is handling finance and marketing. However, at the branch level, managers of various operational functions can be held accountable for performance of that specific process. For example, the chief at a particular branch can be held accountable for the quality of food prepared in that branch (Dimension: Quality). Similarly, the head of the order taking staff at a particular branch can be held accountable for the overtime that the staff at putting in at that branch (Dimension: Resource utilization).
- (b) **Achievability:** Benchmarks and targets will be useful only if they are achievable. The managers who have ownership for the achievement of performance metric have to be involved in setting benchmarks or targets. They should be clearly defined, preferably quantifiable. At the same time, they should be in line with the firm's overall strategy. If the target is set very high staff can get de-motivated. If set too low, will not raise the bar for performance. If not in line with the firm's overall strategy, there will be discord or gap between the firm's performance and what it wants to achieve.
- (c) **Equity:** Benchmarks should be equally challenging for all parts of the business. Grab and Go should customize its performance measure for each function like kitchen staff, order and delivery staff, finance staff, advertising staff etc. For example, while turnaround time to meet a customer's order would be relevant metric to the kitchen, ordering and delivery staff, popularity of the advertisement jingle for Grab and Go would be the relevant metric for the advertisement department. The rigor of the target should be uniform across departments. Otherwise, the staff would view the benchmark system as being biased towards select functions within the firm.

### **Rewards**

This relates to the reward structure within the firm that includes compensation package, bonus, rewards, awards, facilities provided to employees etc. Proper reward system is required for achievement of standards while maintaining costs at optimum levels. Grab and Go should have a well-defined HR policy for compensation, bonus, promotion and reward. A good system

should have the following characteristics:

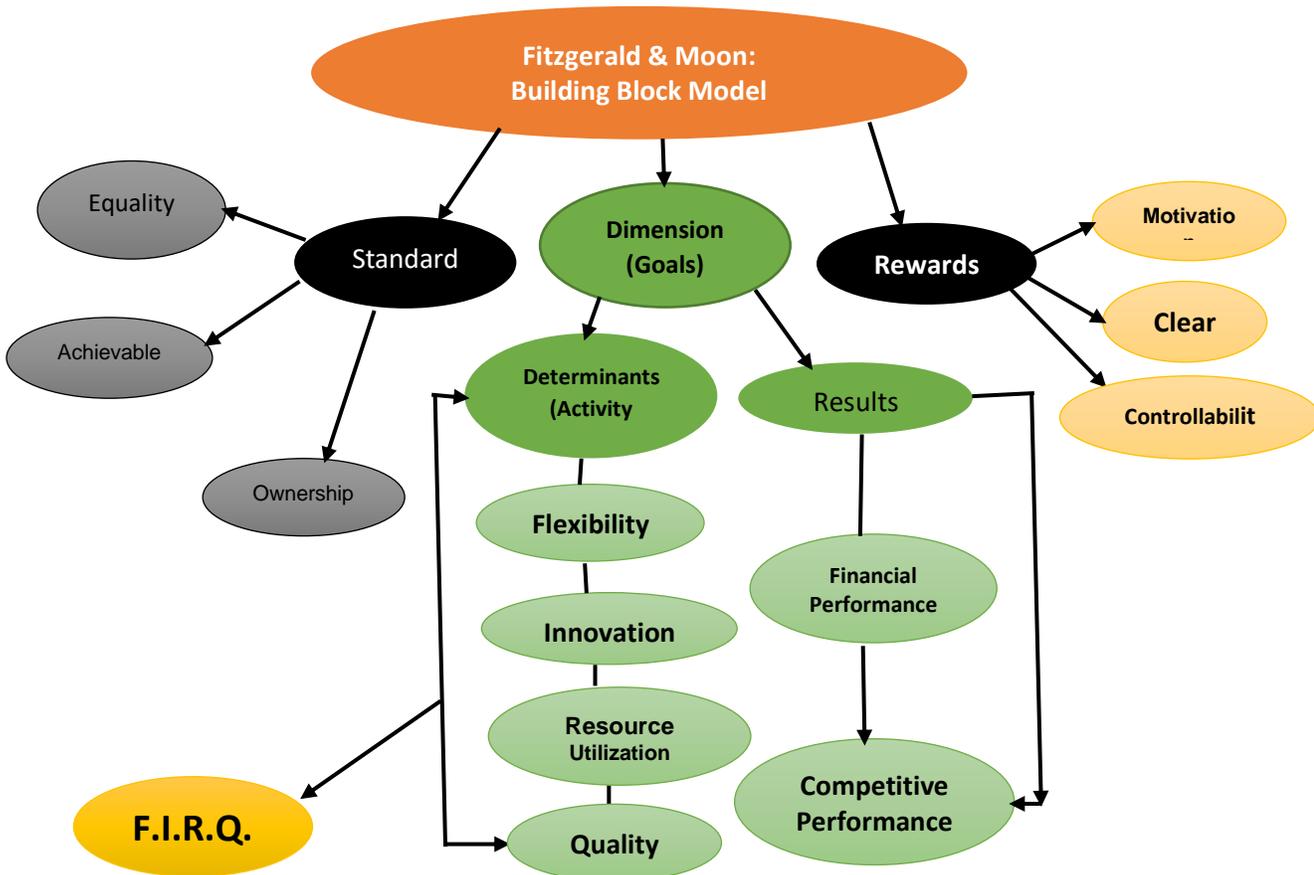
- (a) **Motivation:** Does the reward system drive the people to achieve targets and standards? A low reward system would not induce staff to work towards the goal. Goal clarity and participation in target/benchmark setting can motivate staff to achieve standards. While some part of compensation may be fixed, other parts can be made variable. For example, bonus of the advertising staff can be aligned to the sales generated, Chefs can be rewarded bonus based on sales as well quality measures etc. Better job prospects in a growing environment would also be a good motivator. Grab and Go's management should track various metric in this regard. Some of them could be percentage of bonus paid to the overall compensation package categorized staff cadre, attrition rate, internal promotions, cross training programs etc.
- (b) **Clarity:** The reward package should be clearly communicated to the staff. It should be understood by the staff concerned. They should be told what kind of performance will be rewarded and how their performance will be measured. Grab and Go may consider having a dedicated HR team for this purpose.
- (c) **Controllability:** Unlike the traditional understanding, rewards need not be based only on the financial element that the staff can control. There may be other non-financial elements for which rewards can be given. Both aspects however need to be controllable by the staff concerned. For example, the chef can come up with a popular menu. If the pricing of the product, managed by the central core team, is such that it results in a loss to Grab and Go, the chef may not get the much-deserved bonus. This is not a good reward system and might lead to attrition.

Grab and Go can design its performance measurement system along the above lines.

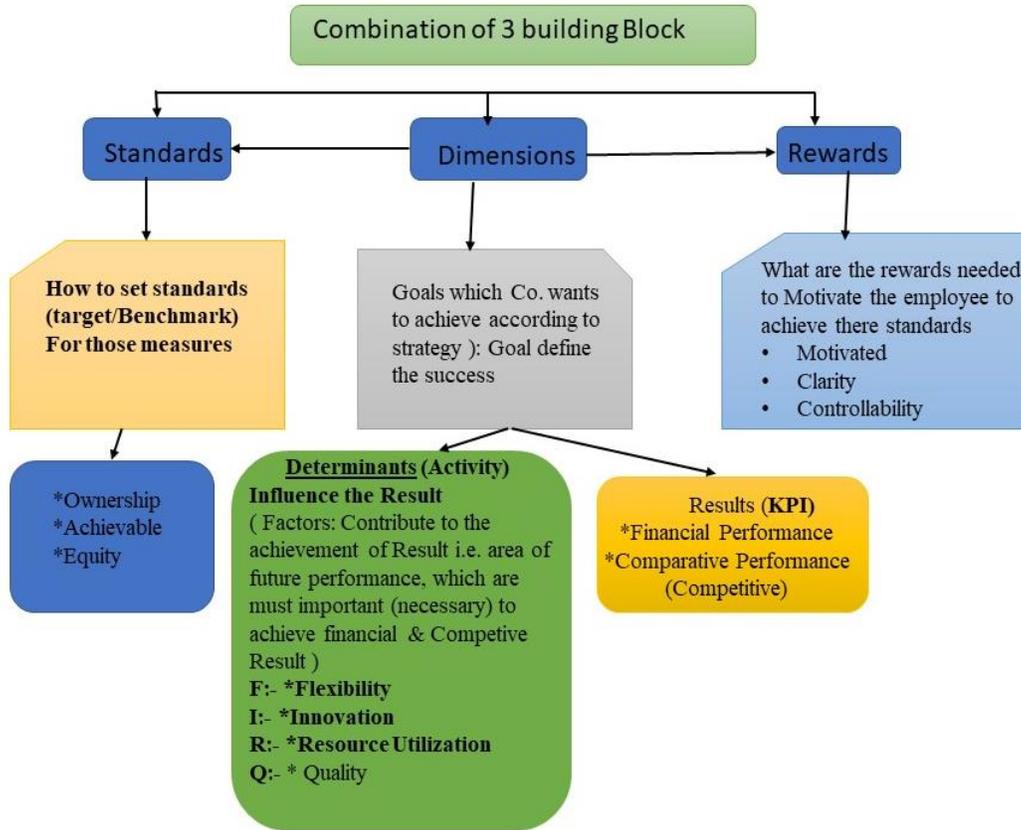
**The following solution should be followed thoroughly and kept in mind for exam purpose.**

## The Building Block Model (Summary)

Fitzgerald and Moon proposed a Building Block Model which suggests the solution of performance measurement problems in service industries. But it can be applied to other manufacturing and retail businesses to evaluate business performance. Variants of the Building block model are currently used in Australia in the regulation of electricity transmission and distribution, gas transmission and distribution, railways, postal services, urban water and sewerage services, irrigation infrastructure and port access.



# BUILDING BLOCK MODEL



## DIMENSIONS: - -

\* Goals Which the company wants to achieve.

\*To get two success (Result), we should do the following four activities.

\* We should set the standards for Dimensions. If staff meet (beat) the standards, they will get reward.

**Determinants (Activity):** - if targets are given, actuals should be compared with target to measure the performance.

If we manage the determinants in high effective manner, then only positive results can be achieved.

	Concept	Example (measures)
Flexibility (Should be high) (हमारा स्टाफ हर काम कर सके, टाइम भी कम लगे)	Different range of services to meet different segment of customer	Restaurant: - Seasonal dish can be prepared by Chef easily without any extra training, cater seasonal demand.

<p>Innovation (Should be on Regular basis, instead of one time) (नयापन)</p>	<ul style="list-style-type: none"> <li>* Covert cash payment system: On line / Paytm.</li> <li>*Innovative efforts, new design, new variant/experiment on Regular basis instead of one time.</li> </ul>	<p>Restaurant: - Add new dishes every month in menu.</p>
<p>Resource utilization (should be optimum) (कोई कर्मचारी खाली नहीं बैठे)</p>	<ul style="list-style-type: none"> <li>*Optimum utilization, productivity, wastage; low.</li> <li>*Staff/Labour efficiency.</li> <li>Revenue per staff / Labour.</li> </ul>	<p>Restaurant: - High table occupancy Rate Co-ordination between order taking staff &amp; chefs (kitchen) (Waiting time, lowest as possible) (No spare capacity) idle time of labour. Revamping the order, delivery system would improve.</p>
<p>Quality: - (बढ़िया, अच्छा) *(Should be standard high) *Should be enough for a Product price paid) *should be measured from eye of customer (Feedback from customer).</p>	<ul style="list-style-type: none"> <li>*Customer care</li> <li>*High</li> <li>*No. of repeat customer.</li> <li>*Internal Quality check.</li> <li>*Quality control for al unit (branches)</li> <li>*Quality standards are met (be ensure).</li> <li>* No. of customer complaint.</li> </ul>	<p>Restaurant: - *Good taste (Hot food), healthy. *Better presentation, Hygienic Food.</p>
<p>Results: -</p>		
<p>Competitiveness: - (दूसरे से बेहतर)</p>	<ul style="list-style-type: none"> <li>*Differentiate Product / Service</li> <li>*Open more franchisee</li> <li>*Sales growth</li> <li>*Relative Market share and Position. (market share i.e., conversion rate of customer)</li> <li>*Measures of the Customer</li> </ul>	<p>*Healthy food choice in menu.</p>

	Base. Conversion Ratio	
Financial Performance: - (लाभ कमाना)	<ul style="list-style-type: none"> <li>*Gross Profit Ratio</li> <li>*Net Profit Ratio</li> <li>*Operating Margin Ratio.</li> <li>*Profitability</li> <li>*Liquidity</li> <li>*Capital Structure</li> <li>*Market Ratios</li> </ul>	<p>Cash Profit &amp; Change in cash reserve for each branch as well as overall firm.</p> <p>Partners want to retain current capital structure &amp; no external funding but interested for bank Loan &amp; retain the company profit.</p>

**Standards: -** (targets/benchmark should be set so that Dimensions (Goals) can be achieved easily i.e., Standards (Targets) set should meet these criteria to achieve the good performance.

**I: - Owner ship: -**

(कौन किस -2 काम के लिए जिम्मेदार है)

<b>Objective: -</b>	<b>Clearly define the responsibility of each staff.</b>
KPI	<p>Example:-</p> <pre> graph TD     Restaurant[Restaurant] --&gt; HeadOrder[Head of order Taking dept.]     Restaurant --&gt; Chief[Chief]     Restaurant --&gt; HeadBranches[Head of each branches]     HeadOrder --&gt; Revenue[Revenue/Waiting time of customers]     Chief --&gt; QualityFood[Quality of Food]     HeadBranches --&gt; Eliminate[To eliminate fraud/error]     HeadBranches --&gt; Smoothly[To keep all operation smoothly]          Company[Company] --&gt; Sales[Sales Department]     Company --&gt; Production[Production Department]     Company --&gt; Purchase[Purchase Department]     Sales --&gt; Orders[Orders/Revenue]     Production --&gt; QualityProduct[Quality Product]     Purchase --&gt; Inventory[Inventory Management]   </pre>
Suggestion:	Proper authority & Responsibility should be assigned.

**2: - Achievability: -**

**Objectives: -**

- Not too high, not too low, should be realistic.
- De-motivate if standards are set too high.
- Zero waiting time for customer: - Not possible.

**3: - Equality: -**

**Objectives: -**

- Equal challenge for all.
- Order taking staff X Equal work assigned
- No discremenency

**Rewards: -**

For achievement of standards, Rewards, bonus, facilities should be given. A good system should have following characteristics i.e., Rewards block make sure that employees are motivated to attain the standard: -

**1: - Motivation: -** High Rewards: -High motivated maybe monetary, non-monetary i.e., employee of the month reward.

- May be fixed, may be Variable: - according to sales
- **Chefs: -** according to Quality
- **Bonus: -** Substantial (not 2 % or 4 %) employees of the month.

**2: - Clarity: -** Clearly/Properly communicated/designed to each staff: - What they will receive How their performance can be measured.

- **Production Manager: -** Time Save.
- **Order taking staff: -** Customer waiting time

**3: - Controllability: -** Employee should not be penalized for the situations which becomes beyond his control.

Example: - Purchase manager: - Price increase due to govt policy. (uncontrollable)

- **Chief: -** Menu, Quality (Controllable)
- **Sales: -** Price factor. (Controllable)

**CRUX: -** If standards & Rewards are set appropriately, staff will be engaged & motivated, it is then more likely that Goals i.e., Dimensions of the organization will be achieved.

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**BALANCE SCORE CARD (Summary)**

**Non-Financial Perspective**

AREA	CSF: - Objective (Critical Success	KPI (Key Performance	Suggestion (Compare target with
	Success	Performance	

	factor)	Indicators)	actual)
<p><b><u>Internal Business Perspective.</u></b> (immune system) (Activity) (Infrastructure) Seamless Process Production, capability Existing Employee, Customer को facility देने के लिये क्या क्या अपने आप को Storing बना कर ही customer/staff को satisfy कर पाएंगे तभी तो Profit बढ़ेगा</p>	Business efficiency,	Productivity,	If Productivity is low then process should be examined for Improvement.
	Internal strongness. Plant safety,	Utilization of resources, No. of accident.	Company could use JIT to reduce the procurement lead time.
	Advanced Process. Growth,	Manufacture cycle time,	If any measures are favorable then: - Comment: - issue discussed must be addresses in order to ensure that this trend continue.
		No. of hours spent in waiting by labour in assembly (one Process to another)	
		Internet facility for backup to student, *Improve post sale services (new service center) Average time for Replacement Repair service.	
	Sale penetration	Flexibility, Growth. Setting up services center, Customer Relationship center in all major cities. By providing toll free customer helpline.	
	Encourage customer to purchase addition product.		

<u><b>Customer Perspective</b></u> (Result)	→ Be No.-1 Choice of Customer.	Quality of goods produced.	Identify the reason & try to eliminate them.	
	→ Quality	On time delivery		
	→ Customer Loyalty,	Turnaround time.		
	Focus on customer need.	Defective goods, after sale service		
		Warranty Repairs.		
		Increase in No. of customer		
	→	Increase in no. of customer ( New Product sale) No. of units sold as compare to sold by competitors.		
	→	Increase customer retention ratio (repeat customer)		
	→	No. of Customer complaint. (Low)		
	→	Time taken to process loan (banking)		
	→	No. of A/c closed, New A/c Opened, Closure Request received (Banking)		
	→	Implement Zero defect Policy. (TQM)		Defective reduces by preventive maintenance.
	→			Educate/Training to sales staff: - (behavioral aspect)
	→		Discount Voucher Redeemed.	identify customer need/ requirement &

	→			fulfill them.
			Feedback.	
			<b>LEARNING</b>	
Learning, Growth, Innovation Perspective (Employees) For long term success.	→		No. of training hours spent by employee, Computer training to staff.	Training session should be increased /Introduced for managers/staff.
		Skills development for Labour /Supervisor.	Cost leadership (reduction of cost by eliminating NVA)	If staff turnover is high:
		Improve employee job satisfaction/moral.	Employee Retention ratio, Employee satisfaction rating. (1-10)	- Reasons investigated & improve them, (Pay scale, working environment, lack of motivation, Reward).
	→			
			<b>GROWTH</b>	
	→	Increase the no. of new product or innovative, service sold.	No. of New vehicle Launched (New features)	
			<b>INNOVATION</b>	
		Update Technology used in Manufacturing facility.	Internet banking /ATM services, 24X7 (For banking company)	
			Compulsory insurance for Loan approval. (For banking Company)	
			App. based booking (online) Like Flip cart, Amazon.	
	Flow of new idea, IT system.			
	Amount spent in Research &		Development cost should be a reasonable percentage	

		Development.	of sale. (neither low/nor high).
<b>Financial Perspective</b>			
Financial Perspective	→	Most Profitable	Different Rate in Different loans Control & manage operating expense (operating ratio)
	→	Company become No. -1, in terms of Market share.	Operating Ratio Providing more paid value-added services.
	→	Revenue Growth.	Profitability Ratio. Revenue Growth, No. of vehicles sold by company, ROCE, GP Ratio.
	→	Maximise shareholder wealth	ROI, Average rate, revenue per user.

**Crux: -1:** To reduce time taken between taking customer order & delivering the product to customer.

**2: - Profitability Ratio:** - Core product line profit as a % core product line sale



### CASE STUDY No: -1

Standard Telecom Ltd. is a leading cellular service provider having a global presence. It aims to be the most innovative and trusted telecom company in the world. To achieve this aim, it is constantly working on its overall functioning. It is trying to adopt best managements practices in the world.

Following are some information related to the company's performance for a particular period:

Particulars	Current Year	Base Year	Target
Operating Ratio	60%	54%	Reduce it to 50%
Average Revenue per user	₹ 225	₹ 210	Increase it to ₹250
Unresolved Consumer Complaints	27,500	25,000	Reduce it by 20%
Customer Relationship Centres	280	200	Take the total to 250
Employee Coverage under Training	10%	8%	At least 15%

## Required:

ANALYSE the performance of the company using Balance Scorecard approach.

**Solution:-**

The balanced scorecard is a method which displays organisation's performance into four dimensions namely financial, customer, internal and innovation. The four dimensions acknowledge the interest of shareholders, customers and employees taking into account of both long-term and short-term goals. The detailed analysis of performance of the company using Balanced Scorecard approach as follows:

- (i) **Financial Perspective:** Operating ratio and average revenue will be covered in this prospective. Company is unable to achieve its target of reducing the operating ratio to 50% instead it has increased to 60%. The company is required to take appropriate steps to control and manage its operating expenses.

The average revenue per user has increased from ₹ 210 to ₹ 225 but remains short of targeted ₹ 250. This is also one of the reasons for the swelled operating ratio. The company can boost up its average revenue per user by providing more paid value-added services because the increasing price is not a fine choice considering the cut-throat competition in the telecom sector.

- (ii) **Customer Perspective:** Service complaints will be covered under this perspective. The company had set a target of reducing unresolved complaints by 20% instead unresolved complaints have risen by 10%  $[(27,500-25,000)/(25,000) \times 100]$ . It shows dissatisfaction is increasing among the consumers which would adversely impact the consumer's general perception about the company and the company may lose its consumers in long run.

- (iii) **Internal Business Perspective:** Establishing customer relationship centres will be covered under this perspective.

The company has established 80 relationship centres in the current period exceeding its target of 50 (250-200) to cater to the needs of existing consumers as well as soliciting new consumers. This shows the seriousness of the company towards consumer satisfaction and would help them in the long run.

- (iv) **Learning and Growth Perspective:** Employee training program is covered under this perspective.

The company had set a target to cover at least 15% employee under its training program but covered only 10%. This could hurt the capabilities of the employees which are needed for long term growth of the organisation necessary to achieve the objectives set in the previous three perspectives. People or the human resource of the company is one of the three principal sources where organisational learning and growth come.



## Case Study No.: - 2 (Balance Score Card)

Spotlight production has in the best produced just one fairly successful product. Recently, however, a new version of this product has been launched. Development work continues to add a related product to the product list. Given below are some details of the activities during the month of November.

Units produced	existing product	25,000
	new product	5,000
Cost of units produced	existing product	\$375,000
	new product	\$70,000
Sales revenue	existing product	\$550,000
	new product	\$125,000
Hours worked	existing product	5,000
	new product	1,250
Development costs		\$47,000

### Required:

- (a) Suggest and calculate performance indicators that could be calculated for each of the four perspectives on the balanced scorecard.
- (b) Suggest how this information would be interpreted.

### Answer

#### (a) customer

- percentage of sales represented by new products =  $\frac{\$125,000}{\$550,000 + \$125,000} \times 100$   
= 18.5%

#### Internal

- productivity – existing product =  $\frac{25,000 \text{ units}}{5,000 \text{ units}} = 5 \text{ units per hour}$
- new product =  $\frac{5,000 \text{ units}}{1,250 \text{ units}} = 4 \text{ units per hour}$
- unit cost – existing product =  $\frac{\$375,000}{25,000 \text{ units}} = \$15 \text{ per unit}$
- New product =  $\frac{\$70,000}{5,000 \text{ units}} = \$14 \text{ per unit}$

## Financial

- Gross profit – existing product =  $\frac{\$550,000 - 375,000}{\$550,000} = 32\%$
- new product =  $\frac{\$125,000 - 70,000}{\$125,000} = 44\%$

## Innovation and learning

- Development costs as % of sales =  $\frac{\$47,000}{\$675,000} = 7\%$
- (b) Using a range of performance indicators will allow Spotlight Productions to look at the success of the new product in wider terms than just its profitability. For example, productivity is lower for the new product than the existing product, so managers may wish to examine the processes involved in order to make improvements. Sales of the new product look very promising but some additional measures of customer satisfaction could provide a better view of long-term prospects.

(ICMA LONDON)



### Case Study -3 (Balance Score Card)

**B. Steels** is a leading manufacturer of flat and long products and have state-of-the-art plants. These plants manufacture value added products covering entire steel value chain right from coal mining to manufacturing Pig Iron, Billets, HR Coils, Black Pipe/GI Pipe, Cable Tapes etc. conforming to international standards. The rock-solid foundation combined with nonstop upgradation and innovation has enabled the B. Steels to surpass its goals constantly. Its vision and values for sustainable growth is balancing economic prosperity and social equality while caring for the planet. It is preparing its balanced scorecard for the year 2018-19. It has identified the following specific objectives for the four perspectives.

▪ Improve post-sales service	▪ Improve employee morale	▪ Improve employee job satisfaction
▪ Increase gross margin	▪ Increase number of customers	▪ Increase profitability of core product line
▪ Increase plant safety	▪ Increase customer retention	▪

B. Steels has collected Key Performance Indicators (KPIs) to measure progress towards achieving its specific objectives. The KPIs and corresponding data collected for the year 2018-19 are as follows:

Key Performance Indicator	Goal	Actual
Average replacement time (number of days)	2	1.5
Gross margin growth percentage	15%	16%
Number of customers	15,000	15,600

Number of plant accidents	0	2
Percentage of repeat customers	83%	81%
Core product line profit as a percentage of core-product line sales	5%	4.4%
Employee turnover rate (number of employees leaving/ Average number of total employees)	2%	3%
Employees satisfaction rating (1-5, with 1 being the most satisfied)	1	1.2

For preparation of Balanced Scorecard report, the following format has been developed:

<b>B. Steels Balanced Scorecard Report For the year ended March 31, 2019</b>					
Perspective	Objective	KPI	Goal	Actual	Goal Achieved (Yes or No)
Financial	×	×	×	×	×
Customer	×	×	×	×	×
Internal Business Process	×	×	×	×	×
Learning and Growth	×	×	×	×	×

### Required

- PREPARE a balanced scorecard report using the above-mentioned format. Place objective under the appropriate perspective heading in the report. Select a KPI from the list of KPIs that would be appropriate to measure progress towards each objective.
- B. Steels desires to integrate sustainability and corporate social responsibility related KPIs in their balance scorecard to adhere vision and values. ADVISE B. Steels, using TBL framework.

### Solution: -

#### B. Steels

#### (i) Balanced Scorecard Report For the year ended March 31,2019

Perspective	Objective	KPI	Goal	Actual	Goal Achieved (Yes or No)
Financial	Increase Gross Margin	Gross margin growth percentage	15%	16%	Yes
	Increase Profitability	Core product line profit as a percentage	5%	4.4%	No

	of Core Product Line	of core product line sales			
Customer	Increase number of customers	Number of Customers	15,000	15,600	Yes
	Increase customer retention	Percentage of repeat customers	83%	81%	No
Internal Business Process	Improve post sales service	Average replacement time (number of days)	2.0	1.5	Yes
	Increase plant safety	Number of plant accidents	0	2	No
Learning and Growth	Improve employee job satisfaction	Employees satisfaction rating (1-5, with 1 being the most satisfied)	1	1.2	No
	Improve employee morale	Employee turnover rate (Number of employees leaving/ Average number of total employees)	2%	3%	No

(ii) **“Triple Bottom Line”** concept encourages companies to measure not only their financial profits, but also the impact that its operations have on the society and environment. Therefore, this framework measures the full cost of doing business by measuring the following bottom lines (i) Profit (ii) People and (iii)Planet.

Diminishing non-renewable resources have forced businesses to focus on sustainable manufacturing. This term refers to managing manufacturing processes such that they minimize any negative impact on the environment by conserving energy and natural resources. In many instances, improved operational efficiency not only reduces waste (thereby costs) but also improves product safety, its strength hens the brand’s reputation and builds public’s trust about the company. As a long- term strategy, this improves business viability and provides a competitive edge to the company. This concept is the **“Planet Bottom Line”**

within the Triple Bottom Line framework. Metrics on the following aspects may be investigated to find out the environment impact of business operations:

- Material consumption
- Energy consumption
- Water utilization
- Emissions, treatment of effluents and waste (include emissions affecting air, water, and land)
- Fuel consumption by tracking freight and transportation costs
- Land utilization
- Recyclability and disposal of product

“Corporate Social Responsibility” enables the company to become conscious of the impact its operations have on the society. CSR programs, through philanthropy and volunteer efforts can forge a stronger bond between itself, its employees, and the wider community. Again, this improves both the brand image as well as builds public’s trust about the company. This concept is the **“People Bottom Line”** of the Triple Bottom Line framework. Metrics on the following aspects maybe investigated to find out the social impact of business operations:

- Work place environment and labour relations
- Occupational health and safety, accident rates
- Human rights practices – child labour, employee work-place security policies
- Training and education
- Equal opportunity employer – diversity of workforce and opportunities available for employees’ growth
- Suppliers – local sourcing versus sourcing from external markets
- Philanthropy and volunteer programs organized
- Product safety in terms of customer health and safety
- Pricing of essential products to enable wider reach within the society
- Transparent and ethical business practices

B: - Steels can study these aspects, determine the relevant metrics, and prepare periodic KPI reports that can help in measuring responsibilities towards sustainability and social impact.

**(ICMA LONDON)**



## CASE STUDY No: -4

Claymax Limited is preparing its balanced score card for the year 2018-19. It has identified the following specific objectives for the four perspectives.

Specific Objective	Specific Objective
Improve post-sales service	Increase plant safety
Increase gross margin	Increase customer retention
Improve employee morale	Improve employee job satisfaction
Increase number of customers	Increase profitability of core product line

Claymax Limited has collected Key Performance Indicators (**KPIs**) to measure progress towards achieving its specific objectives. The KPIs and corresponding data collected for the year 2018-19 are as follows:

Key Performance Indicator	Goal	Actual
Average repair time (number of days)	1.0	0.8
Gross margin growth percentage	24%	25%
Number of customers	150000	156000
Number of plant accidents	0	2
Percentage of repeat customers	83%	81%
Core product line profit as a percentage of core-product line sales	16%	12%
Employee turnover rate (Number of employees leaving/Average number of total employees)	2%	3%
Employee satisfaction rating (1-5, with 1 being the most satisfied)	1.0	1.2

For preparation of Balanced Score card report, the following format has been developed:

<p style="text-align: center;"><b>Claymax Limited</b>  <b>Balanced Scorecard Report</b>  <b>For the year ended March 31,2019</b></p>					
Perspective	Objective	KPI	Goal	Actual	Goal Achieved (yes or No)
Financial					
Customer					
Internal Business Process					

## Required:

- (i) Prepare a balanced Scorecard report using the above-mentioned format. Place objective under the appropriate perspective heading in the report. Select a KPI from the list of KPIs that would be appropriate to measure progress towards each objective.
- (ii) Advise how Claymax Limited can include sustainability and corporate social responsibility related KPIs in their balance scorecard to adhere to the notion of a triple bottom line.

(ICMA LONDON)



## Case Study No: - 5 (Balance Score Card)

Your bank Ltd, was established on the 30<sup>th</sup> September, 1940 under the provision of Co-operative Societies Act by the eminent professionals to encourage self-help, thrift, cooperation among members, Bank was issued Banking Business License under Banking Regulation Act, 1949 on October 25, 1986 to carry out the Banking Business within the national capital and since then the Bank has been growing continuously. At present, Bank has large number of membership of individuals from different sections. The bank has 12 branches in the NCT of Delhi, Bank offers traditional counter service. Opening hours are designed to coincide with local market days.

Board of Directors was worried from growing popularly of new style banks. These banks offer diverse range of services such as direct access to executive management, a single point of contact to co-ordinate all banking needs appointment banking to save time, free online banking services 24/7, free unlimited ATM access etc.

It has now been decided that the bank will focus on “What Customers want” and will use a balanced scorecard to achieve this goal.

## Required:

**PRODUCE** for each of the three non-financial perspective of a “Balanced Scorecard”, an objective and a performance measure that the bank could use with appropriate reason.

**Solution: -Internal Business Process Perspective**

**Objective:** Cross-sell Products

**Measure:** Products Purchased per Customer

**Reason:** Cross-Selling, or encouragement customers to purchase additional products e.g., insurance, forex etc. is a measure of customer satisfaction. Only if a service is perceived as highly satisfactory the service would be repeated/additional products or services would be accepted.

**Learning and Growth Perspective**

**Objective:** Increase the Number of New Products or Services sold

**Measure:** Number of Customers Buying the New Products/New Services

**Reason:** Long term financial success requires bank to create new products/services (e.g., internet banking, ATM access) that will meet emerging needs of current/future customers such as 24/7 banking.

### **Customer Perspective**

**Objective:** Increase Customer Loyalty

**Measure:** Number of Accounts closed or closure Request Received

**Reason:** Customer loyalty describes the extent to which bank maintains durable relations to its customers. The share of existing customers should have a high importance as it indicates about image and reputation, Closure request is not a good sign for bank. Bank should investigate reasons for the same and take appropriate actions to improve services offered to retain customers.

**(ICMA LONDON)**



## CASE STUDY No: - 6 (Balance Score Card)

Fair Limited manufactures and sells motor vehicles in India and different parts of the world. The company has its head office in New Delhi and three regional offices. The manufacturing plants are situated in Pune and Bhubaneshwar. The company has over 10,000 employees who are paid a fixed salary and a performance related pay (PRP).

The PRP is determined using the financial performance as a measure. The performance of departments which are profit centers is based upon the revenues and profits the departments generate. The performance of cost centers is based upon the cost savings against the budget.

Of late, the company has identified critical issues with the motor vehicles manufactured and sold in the market. In the last one year, itself, the company has recalled more than 2 lakh vehicles owing to quality issues like faulty gearbox, issues with axle, braking systems etc. The company was also penalized for selling vehicles which does not meet the emission norms.

The board of directors carried out an internal review of these frequent recalls and issues with the vehicles. In most of the cases, it appeared that the recall of vehicles was on account of lower quality of material and parts used. A couple of critical quality and emission checks were ignored to dispatch more vehicles in the limited time, leading to higher sales and profits.

The board is concerned with the reputational risk with the issue related with recalls. The company was consumer's most trusted brand for last three years in a row. It is unlikely to win the award this year due to negative feedback from customers. The board wants to win the trust of the customers back and be profitable as well.

**Required: -**

You are the advisor to the board. The board seeks your advice on the following aspects:

- (i) Advantages and disadvantages of using financial measure as a performance measure.
- (ii) SUGGEST an alternative performance measure which includes non-financial measures as well.

(iii) IDENTIFY 2 critical success factors and 2 Key Performance Indicators for the performance measure chosen in (ii). (Mock Test Paper)

**Solution: -**

**What is the issue?**

Fair limited is into manufacturing of motor vehicles. The company has used financial measures for performance. Of late, the company has faced quality related issues leading to vehicle recalls. The company has also been penalized for violating emission norms. Since the company has been using financial measures only, it appears that non-financial aspects related to quality have been ignored. The company has adopted the principle of profit at any cost which can be seen from use of low-quality materials and parts as well as skipping key quality checks.

**Financial Performance Measure: -** Financial performance measures focus on financial results or aspects. These measures focus on the profits made by a business or a unit of business. They also include costs saved against budgets. Various financial performance indicators include – growth in revenue, profitability, variance from budget, Return on Capital Employed etc.

In the case of Fair limited, the performance of employees is done on the basis of financial performance indicator. When performance is evaluated on financial parameters, the employees and managers tend to focus only on profitability in anticipation of higher bonuses and pays.

The problems related to quality issues in vehicles produced by Fair limited might be linked to the use of financial performance measure. Low quality parts are used to save costs and improve profitability. The quality checks prior to sales were also skipped to sell more vehicles with limited resources. This is an apparent case of compromise in quality for seeking higher profits and revenues. In light of above, the advantages and disadvantages of financial performance measures are given below.

**Advantages**

Focus on financial objectives and is linked to the overall objective of wealth creation of shareholders.

Such measures are objective.

Quantification of results is possible.

The measures are comparable across companies of a particular industry.

The framework to measure financial performance is established in most of the cases.

**Disadvantages**

Focus on short term profits and Ignores long term sustainable growth. As can be seen in the case of fair limited, the company has compromised quality for short term profits. This is harmful to the company in the longer run.

This measure can be distorted by inflation. A 5% growth in sales might be good but if the

inflation is 6%, the real growth is negative.

Financial information might be manipulated to show a better performance.

Non-financial performance measures use measures other than financial to measure performance of employees and departments. The advantages of non-financial measures are Non-financial measures help business to measure every area whether financial or non-financial. Financial measure would not be able to suitably measure areas like performance of IT department.

It focuses on qualitative aspects as well.

These measures take a long-term view unlike financial measures where employees tend to take a short-term view.

### **The disadvantages of Non-Financial measures are:**

These require huge amount of information to measure each area of performance and might lead to shift of focus from core goals and values.

These can be subjective as non-financial measures cannot be generally quantified.

Non-financial measures like measures of quality are difficult to measure.

### **Balanced Scorecard**

An alternative performance measure which focuses on both financial and non-financial measures is the Balanced Scorecard. It outlines four key areas in which company and divisional performance should be measured to focus on both the short and long term needs of the organisation. The key idea is that managers are to be appraised on a variety of measures which include non-financial measures so that their focus is both long and short term.

As discussed earlier, it appears that managers at Fair limited have ignored long term sustainable growth and qualitative factors and focused on short term profits and sales. This is one of the key disadvantages of a financial measure of performance. The company can start measuring performance both on financial as well as non-financial aspects. This would ensure that employees are not short sighted on profits alone.

### **The four areas or perspectives in a Balanced Scorecard are –**

- **Financial Perspective**

Financial perspective focuses on financial performance of the business and divisions. The various financial measures used by companies are profitability, revenue growth, cost control etc. This is currently being used in Fair limited to measure performance.

- **Customer Perspective**

This perspective views organizational performance from the point of view the customer or other key stakeholders that the organization is designed to serve. These could include

measures like customer satisfaction index, percentage of returns, percentage of goods delivered on time etc.

- **Internal Business Perspective**

This perspective views organizational performance through the lenses of the quality and efficiency related to product or services or other key business processes. The measures under internal business perspective could be number of defective products produced, production performance per unit of time etc.

- **Training and Development/ Learning and Growth Perspective**

This perspective views organizational performance through the lenses of human capital, infrastructure, technology, culture and other capacities that are key to breakthrough performance. The key measures could be number of new products produced, amount invested in training and development etc.

In each category/Perspective, the organisation must follow through from the business strategy, to ensure they are focused on the long- term direction of the business. Clear objectives should be set under each category according the SMART criteria (Specific, Measurable, Achievable, Relevant and Time-bound), measured at the end of the period, and lessons learnt from actual results to help to improve performance in future periods and keep the organisation on track to achieve its strategic goals.

### **Applying Balanced Scorecard to Fair Limited**

The issues related to quality have arisen at Fair Limited as the managers and divisions focused on profits at the cost of quality. The recall of vehicles was primarily on account of use of sub-standard parts. The company should consider using non-financial measures as well as a performance measure. Balance scorecard can be effective tool to apply financial and non-financial measure.

The company must take steps to put focus on quality related aspects as well as financial aspects. A proper application of various Key Performance Indicators under the respective Critical Success Factors can help the company overcome the current issue.

Critical success factor (CSF) is a management term for an element that is necessary for an organization or project to achieve its mission. It is a critical factor or activity required for ensuring the success of a company or an organization. These are the key areas in which the organisation has to do well if they are to remain competitive and profitable. The critical success factors have to be linked with the overall strategy of the organisation.

Key Performance Indicators (KPIs) are the ways in which the organisation's performance for the CSF can be measured. It is a measurable value that demonstrates how effectively a company is achieving key business objectives. Organizations use KPIs to evaluate their success at reaching targets.

The Critical Success Factors and Corresponding KPIs for Fair limited for each of the perspective in the balanced scorecard is given below:

### BALANCE SCORE CARD (Summary)

Financial Performance Measures			
<b>Basic: - Focus: -</b> Financial Results, Project made by Co., Cost saved against budget, Growth in Revenue, Profitability: - ROCE, Variance from budget			
Focus on profitability: - To get higher bonus, use low quality parts/Skip quality check before sale to Increase sale. Higher Revenue/Profit generate			
Financial Perspective measure		Non-Financial Perspective measures	
Advantages	Disadvantages	Advantages	Disadvantages
Wealth creation of Share Holders	Focus on Short term project	Help Business to measure every area	Require huge amount of Information
Share Price Increase	Ignore long term growth Example: - In Fair Ltd compromise with quality	It measures everyone (employee, customer, internal resources)	Can be subjective
Such measures are objectives	Real Growth negative	It focus on qualitative aspect	Can't be Quantified
Quantification of Result is possible	Sale growth 50% inflation 6%	These measures take long term view	
Comparable with other company, within same industry becomes easy.			

AREA	CSF (Critical Success factor)	KPI (Key Performance Indicators)
Financial Perspective	<ul style="list-style-type: none"> <li>➤ Most Profitable company become No./Co. in terms of Market share, Revenue Growth</li> </ul>	<ul style="list-style-type: none"> <li>➤ Profitability Ratio. Rev. Growth, No. of vehicles sold, ROCE, GP Ratio.</li> <li>➤ ROI Average rate per used.</li> </ul>

Non-Financial Perspective		
Customer Perspective (Result)	<ul style="list-style-type: none"> <li>➤ Be No. Choice of Customer, Implement, Zero recall (def.)</li> <li>➤ Policy, quality, Customer Loyalty</li> </ul>	<ul style="list-style-type: none"> <li>➤ Turnaround time.</li> <li>➤ Feedback, On time delivery</li> <li>➤ No. of Customer complaint,</li> <li>➤ Defective goods, after sale service</li> <li>➤ Warranty Repairs.</li> <li>➤ Increase customer retention ratio.</li> <li>➤ Increase in No. of customer</li> <li>➤ Average replacement time.</li> </ul>
Internal Business Perspective. (immune system) (Activity) (Infrastructure) Seamless Process Production	<ul style="list-style-type: none"> <li>➤ Business efficiency, Internal strong. Advanced Process.</li> <li>➤ Growth, Improve post sale/internet service /Facility for back up. Sale penetration</li> <li>➤ Plant safety.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Productivity, Utilization of resources,</li> <li>➤ Manufacture cycle time,</li> <li>➤ No. of hours spent in waiting by labour in assembly</li> <li>➤ (one Process to another), Flexibility, Growth, No. of accident, Improve post sale services (new service center)</li> </ul>
Learning, Growth, Innovation Perspective (Employees)	<ul style="list-style-type: none"> <li>➤ Update Technology used in Manufacturing facility</li> <li>➤ Skills development for Labour /Supervisor</li> </ul>	<ul style="list-style-type: none"> <li>➤ Amount spent in Research &amp; Development.</li> <li>➤ No. of training hours spent by employee, Employee Retention ratio, Employee Satisfaction.</li> <li>➤ No of New vehicle Launched (New features)</li> <li>➤ Cost leadership</li> <li>➤ Computer training to staff.</li> <li>➤ Like Flip cart, Amazon.</li> <li>➤ Flow of new idea, IT system.</li> <li>➤ Computer Training to staff.</li> </ul>

### Case Study No.: - 7 Balance Score card

In 2009, Luxo had monopoly in the eyewear market of America, but the problem with the company was that it was selling variety of eyewear, by putting a big price on it. At present, there is almost nothing that you can't buy online, but at that time there were limited things that you could order online. In 2009, Arby Signer Inc. launched a website to sell eyeglasses online. Selling eyewear online and competing with Luxo was a challenge for Arby. Within just 4 years Arby break the monopoly of Luxo and capture the major market of America. People find it really convenient to buy sunglasses and glasses online and get delivery at doorstep. Following the footstep of Luxo, Arby eliminated the middleman from the manufacturing process, launched its own optical lab to have its own manufacturing process. The range of products/services offered by Arby which make different from Luxo include easy buying process, delivery at door step, stylish glasses, customize eyewear glasses, products was sold on the site at very affordable, with

a starting range of just \$95 etc.

### **Mission, Vision & Objectives**

<b>Mission</b>	“Improving people’s lives with our health care products in a socially cognizant way”
<b>Vision</b>	“To beat rusted health care partner”
<b>Objective</b>	“To offer people designer eye wear at are volitionary price”

As a mission- based brand, Arby needed a way to instill their team of employees with a passion for the mission. Arby let their employee know ‘what they value’ and ‘what the employee should value’ in ‘who they are’. This is important to setting up ‘what they do’ and ‘why they do it’ as a core foundation of their brand story. Arby also contributes in the philanthropic work; it inspires the people with its mission. For every pair of glasses customer pay, Arby donates a pair of glasses to needy person. In December 2019, Arby reported the donation of 9,60,000 pairs of eyeglasses. The company also claims to be 90% carbon neutral.

### **Extracts from the Balanced Scorecard**

<b>Performance Measure</b>	<b>2019Actual</b>	<b>2019 Target</b>
Financial perspective		
Return on capital employed (ROCE)	13%	14%
Net income	\$95Millions	\$89Millions
Customer perspective		
Number of first-time buyers	1,20,000	1,00,000
Customer retention ratio	78%	75%
Number of complaints (per1,000customers)	1.5	2
Number of glasses donated to needy people	9,60,000	9,00,000
Internal processes		
Number of business processes re-engineered	110	100
Number of new services made available through online application	2	4
Incidences of fraud on customers’ accounts (per 1,000 customers)	3	10
Total CO2 emissions (tons)	850	1,100
Learning and growth		

Number of employees trained to instruct retailers	1,000	1,050
Number of hours (paid for) used to support social plans	10,200	10,000
Number of trainee positions from rural areas	189	200

Other Information: -Arby Signer has recently invested heavily in IT security to prevent fraud.

Required: -

EXAMINE the performance of The Arby Signer in 2019.

**Solution:** - The balanced scorecard approach looks both financial performance and non-financial performance. In order to gain competitive advantage, organizations have to be conscious of the needs and convenience of their customers. The Arby signer has a vision and strategy which goes far beyond just making money. They want to help the community and give something back to customers also. Hence, performance measures which address whether the Arby is being successful in pursuing their vision has been incorporated in Balanced Scorecard. The performance of the Arby will be considered under each of the titles used in the balanced scorecard:

### Financial Perspective

The Arby has had a year of diverse achievements when looking at the extent to which it has met its financial targets. Its ROCE shows how efficiently it has used its assets to generate profit for the business. The target of ROCE for the year was 14% but it has only achieved 13% return. The Arby's Net Income, however, was in fact \$6 million higher than its target, which is good. The most likely reason for the under-target ROCE is possibly the investment which Arby has made in IT security. Whilst this may have reduced ROCE, this investment is essentially a good idea as it helps Arby to pursue its mission and will keep customers happy.

### Customer Perspective

Regarding its customers, Arby's performance is better in the current year. It has not just exceeded its target sale to first time buyers by 20,000 but also improved its customer retention ratio, which is good for company to pursue its vision of being a trusted healthcare partner.

Customers complaints has reduced from 2 complaints to 1.5 complaints for every 1,000 customers, the exact reason is not clear but it might be because of improved processes and team efforts of employees.

Also, the number of glasses donated exceeded the target. It shows that company has exceeded its target of helping people which is good for the company's reputation.

### Internal Processes

Number of business processes within Arby re-engineered has exceeded the target, which is very good and the impact of which may be reflected in the lowering of level of customer complaints. Likewise, the investment to improve IT security has been a great success, with only three incidences of fraud per 1,000 customers reported compared to the target of 10. However, only two new services have been made available via online application, instead of the target of four,

which is unsatisfactory. But fortunately, its CO2 emission is below to the target level.

## Learning and Growth

The Arby has succeeded to train its employees to instruct retailers. However, the number of employees trained to instruct retailers are comparatively lesser than targeted, shortfall in training of employees to give instruction to retailers may have an impact on the Arby's failure to meet its target of market expansion.

Number of hours (paid for) used to support social plans are comparatively higher, it results in additional costs which could have contributed to the fact that the Arby did not quite meet its target for ROCE. Further, company has not met aim for helping the rural area as targeted. This may be because the number of candidates applying from these areas was not as high as planned and this situation is beyond companies' control.

In general, the Arby Signer had a successful year, meeting many of its targets.

**(RTP-MAY-2020)**



## CASE STUDY No: -8 Value Chain Analysis, Balanced Scorecard, KPI

You are the Finance Manager of DP Limited which is in the business of manufacturing wire rods. A division in the company manufactures copper wire rods from a single manufacturing plant in Central India. The division purchases raw material (copper cathodes) from various suppliers across the country. The cathodes are melted and wire rods of various dimensions are produced. Each batch of wire rods produced are tested for quality and strength.

The wire rods are stored in rolls in the warehouse and dispatched in company owned trucks as per the requirement of the customers. The customers are required to pay 50% of invoice value as advance and balance 50% within 30 days of delivery of goods. The company prices its copper wire rods based on the price prevailing on London Metal Exchange after adjusting it with a factor to cover conversion costs and profits.

The company explores newer markets by advertising in national dailies and participating in various industrial events in India as well as abroad. An annual conference of customers is conducted by the company to improve customer relationships and attract newer customers. The customers have right to return the material if quality specifications are not met. There is a separate team to handle such complaints. The following email was sent by the Chief Financial Officer of the company to you.

**From: Chief Financial Officer**

**To: Finance Manager**

**Subject – Commodity Price Fluctuation**

The board is quite aware of foreign exchange fluctuation related risks. However, they are not much aware of risks related to fluctuation in commodity prices. The prices of copper which are used to manufacture copper wire rods have fallen down by over 20% in the last six months owing

to global factors.

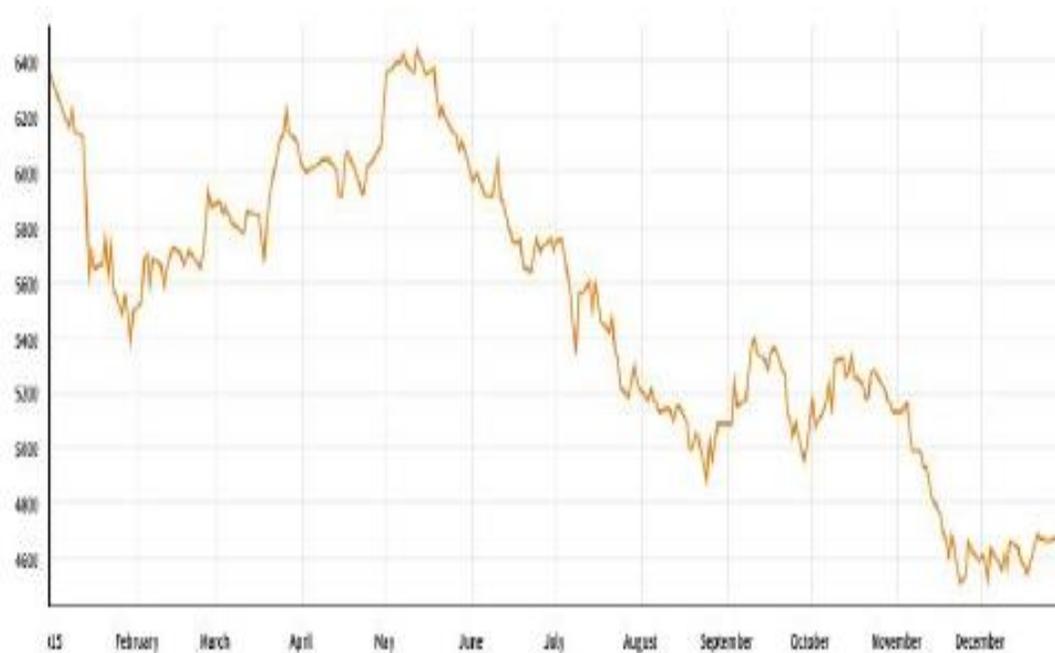
The procurement team of Copper Wire Division has been waiting for the right time to buy these metals as they expect the prices to fall down further. However, we are at a verge of stock-out of these metals as no purchase was made in the last one month.

The bonus of procurement team largely depends on the annual savings as compared to the budgeted cost of purchase. I am not happy with the approach of speculation and making profits out of price fluctuation in raw materials. Could you highlight the issues related with our performance measurement mechanism and suggest how it could be improved?

Regards

Chief Financial Officer

Copper Prices Quoted on LME



Required

- (i) EXPLAIN and IDENTIFY the various primary activities of Copper Division
- (ii) DISCUSS the issues with performance measure in force in the company.
- (iii) ADVISE an alternate performance measure and Identify Key Performance Indicators (KPI).

**Solution: -**

**1.(i)** Value chain is defined as “a chain of value-added activities; products pass through the activities in a chain, gaining value at each stage”. Value chain focuses on systems, and how business inputs are changed into business outputs purchased by customers. The entire set of activities that a business undertakes to convert inputs to outputs are interlinked to each other.

Porter’s value chain classifies activities into primary activity and secondary activity.

## **Primary Activities**

Primary activities are those activities that are directly related with creating and delivering a product to the end customers. The following activities are considered as primary activities:

### **Inbound Logistics**

Inbound logistics involves arranging inbound movement of materials from suppliers to the manufacturing plants. The activities related to inbound logistics in the case of copper division of DP limited would involve transporting copper cathodes from multiple suppliers across the country and storing them in the warehouse. The cathodes stored in warehouse would be issued to the production facilities depending on the requirement of the production plants.

### **Operations**

Operations involve those activities which are concerned with conversion of input into outputs in case of manufacturing companies. The activities under operations would include those related to melting of copper cathode and converting the copper cathodes into wire rods. The quality tests carried out for wire rods would also be included as a part of operations.

### **Outbound Logistics**

These include planning and dispatch, distribution management, transportation, warehousing, and order fulfillment. This includes warehousing of finished goods (copper wire rods) and distribution of copper wire rods to its customers. The company uses its own trucks to distribute finished goods to its customers. The scheduling of trucks and dispatch of material would also be a part of outbound logistics.

### **Marketing & Sales**

Marketing and sales are the means whereby consumers and customers are made aware of the product which is ultimately sold to them. The activities include selling products to the end customers covering activities like product management, price management, promotion and marketing management. DP limited uses advertisement in national dailies and holds conferences as a part of its marketing and sales efforts. The company also holds annual customer conference to improve customer relations and attract new customers.

### **Service**

In case of manufacturing industry, service generally refers to the after sales service which are required to maintain the value of product and includes activities like installation, repair etc. The service team is also expected to handle customer returns on account of poor quality of copper wire rods.

### **(ii) What is the issue?**

A procurement team is generally a cost centre and the most appropriate way to evaluate performance of cost centre is the comparison between actual cost and budgeted cost (also called variance). A large portion of bonus (performance measurement) is dependent on the savings in actual purchases.

The company has adopted variance analysis as a measure of performance. If the team is able to reduce the actual cost of purchase as compared to the budgeted cost, a higher bonus is paid. The procurement team has stopped purchase of copper cathodes to save on the purchase budget which ultimately would translate into higher payout of bonus.

The commodity prices of copper have fallen by about 20% in the last six months. The speculation of fall in price has resulted in halting of procurement process. It is very difficult to time the market and such speculation could lead to losses to the company. There could be a stock-out situation if the procurement is not resumed and the situation could hamper the production and overall delivery schedules. The procurement team appears to have taken a short- term view of price movement.

The team is focused on earning higher bonus and hence is waiting to buy at lower prices. There is a larger impact of not being able to deliver product on time which could damage the reputation of the company. This has been ignored by the procurement team. Managers must be encouraged to consider the impact on the company as a whole and not on just the own department.

The company is using just a financial measure to measure performance. This can result in lopsided view of the goals and objectives of the company. Managers tend to look at short term profits and ignore the long- term growth.

### **Optimum Performance Measurement**

A performance measurement is most effective when the goals of the respective departments are aligned with that of the company. This ensures that each employee within the company works towards the overall objective of the company. The company manufactures wire rods and the objective of the copper division is to manufacture copper wire rods as per the requirement of the customers.

The profit flows from the main business of the company. If a department focuses on an objective which is not aligned with the main goal, the company as a whole suffers. A stock-out like situation would hamper the image of a company, if wire rods are not delivered as per schedule to the customers.

Another aspect to be considered is that managers and employees are evaluated only on those parameters which are controlled by them. If for example, the procurement team is able to purchase copper at a discount to market price because of their efforts, it could be considered as saving.

The prices of copper are determined by the prices on commodity exchanges and are not in the control of procurement managers. The performance of managers and employees should not be impacted by global change in prices of commodities as they are not controlled by the concerned employees.

### **(iii) Alternate Performance Measure**

The issue with financial performance measures alone is that managers tend to have a short- term view as can be seen in our case. In order overcome possible short - termism of financial measures Kaplan and Norton developed the Balanced Scorecard which outlined four key areas in which company and divisional performance should be measured to focus on both the short and long term

needs of the organisation.

The key idea is that managers are to be appraised on a variety of measures which include non-financial measures so that their focus is both long and short term. The four perspectives used to measure performance measure in a Balanced Scorecard is given below:

**Financial Perspective:** This measures the financial performance which is linked to the overall objective of maximizing shareholder's wealth. We already use financial measures to measure performance. The weight age could be reduced to include other measures. Also, factors beyond the control of managers like commodity prices should be excluded.

**Customer Perspective:** This includes focusing on customers and meeting their needs. Measures could include quality of material produced, optimum levels of inventory maintained, number of stock-out instances, etc.

**Internal Business Perspective:** This includes measures to evaluate the performance of business processes with particular emphasis on productivity and efficiency. Measures could include procurement lead time, number of defective purchases etc. The company could use measures like JIT to reduce the procurement lead time.

**Training and Growth:** This includes focusing on innovating in processes and developing and learning for the future. Trainings could be given to procurement managers to identify best quality of copper cathodes, aspects related to purity etc.

(ICMA LONDON)



## CASE STUDY No: - 9 (Balance Score Card)

Faster Pasta is an Italian fast-food restaurant that specializes in high quality, moderately priced authentic Italian pasta dishes and pizzaz. The restaurant has recently decided to implement a balanced scorecard approach and has established the following relevant goals for each perspective:

Perspective	Goal
Customer perspective	<ul style="list-style-type: none"><li>To increase the number of new and returning customers</li><li>To reduce the % of customer complaints</li></ul>
Internal	<ul style="list-style-type: none"><li>To reduce the time taken between taking a customer's order and delivering the meal to the customer.</li></ul>
Innovation and learning	<ul style="list-style-type: none"><li>To reduce staff turnover</li></ul>
	<ul style="list-style-type: none"><li>To increase the proportion of revenue from new dishes</li></ul>
	<ul style="list-style-type: none"><li>To increase the % of staff time spent on training</li></ul>
Financial	<ul style="list-style-type: none"><li>To increase Revenue per customer</li></ul>

Perspective	Goal
	<ul style="list-style-type: none"> <li>To increase gross profit margin</li> </ul>

**The following information is also available for the year just ended and for the previous year.**

	20 X 8	20 X 9
Total customer	11,600	12,000
– Of which are new customers	4,400	4,750
– Of which are existing customers	7,200	7,250
Customer complaints	464	840
Time between taking order and customer receiving meal	4 mins	13 mins
% staff turnover	12%	40%
% time staff spend training	5%	2%
Revenue	\$110,000	\$132,000
– Revenue from new dishes	\$22,000	\$39,600
– Revenue from existing dishes	\$88,000	\$92,400
Gross profit	\$22,000	\$30,360

**Task: Answer “True” or “False” to the following assertions that Faster Pasta has achieved its goals of: -**

**Increasing the number of new and returning customers**

**Decreasing the % customer complaints**

**Reducing the time taken between taking the customer’s Order and delivering the meal to the customers**

**Reducing staff turnover**

**Increasing the proportion of revenue from new dishes**

Increasing the % of staff time spent on training



Increasing the spend per customer



Increasing gross profit margin



**Solution: -**

Increasing the number of new & returning customers

TRUE

**Measure:** The number of new customers has increased year on year from 4,400 to 4,750. This is an 8.0% increase. The number of returning customers has also increased slightly from 7,200 to 7,250, i.e., a 1.0% increase.

**Comment:** The company has achieved its goals of increasing the number of new and existing customers. It is worth noting that the proportion of customers who are returning customers has fallen slightly from 62.1% to 60.4% of the total customers. This could indicate a small drop in the level of customer satisfaction.

FALSE

Decreasing the % customer complaints

**Measure:** The percentage of customer complaints has increased from 4% ( $464 \div 11,600$ ) to 7% ( $840 \div 12,000$ ).

**Comment:** Faster Pasta should investigate the reason for the increase in customer complaints and take the required action immediately in order to ensure that it can meet this goal in the future.

FALSE

Reducing the time taken between taking the customer's order and delivering the meal to the customer

**Measure:** The time taken has more than tripled from an average of 4 minutes in 20X8 an average of 13 minutes in 20X9.

**Comment:** Customer place a high value on the fast delivery of their food. The increase in time may be linked to the increased number of customer complaints. If this continues customer satisfaction, and therefore profitability, will suffer in the long-term. The restaurant should take step now in order to ensure that this goal is achieved going forward.

FALSE

Reducing staff turnover

**Measure:** This has risen significantly from 12% to 40% and hence the business has not achieved its goal.

**Comment:** The reason for the high staff turnover should be investigated immediately. This may be contributing to longer waiting times and the increase in customer complaints. This will impact long-term profitability.

TRUE

### Increasing the proportion of revenue from new dishes

**Measure:** This has increased year on year from 20% ( $\$22,000 \div \$110,000$ ) in 20X8 to 30% ( $\$39,600 \div \$132,000$ ) in 20X9. Therefore, the restaurant has achieved its goals.

**Comment:** This is a favorable increase and may have a positive impact on long-term profitability if the new products meet the need of the customers.

FALSE

### Increasing the % of staff time spent on training

**Measure:** This has fallen significantly from 5% to only 2% and hence the company is not achieving its goal.

**Comment:** Staff may be unsatisfied if they feel that their training needs are not being met. This may contribute to a high staff turnover. In addition, staff may not have the skills to do the job well and this would impact the level of customer satisfaction.

TRUE

### Increasing the Revenue per customer

**Measure:** Spend per customer has increased from \$9.48 ( $\$110,000 \div 11,600$ ) to \$11.00 ( $\$132,000 \div 12,000$ ), i.e., a 16.0% increase.

**Comment:** This is a favorable increase. However, the issues discussed above must be addressed in order to ensure that this trend continues.

TRUE

### Increasing gross profit margin

**Measure:** The gross profit margin has increased year on year from 20% ( $\$22,000 \div \$110,000$ ) to 23% ( $\$30,360 \div \$132,000$ ).

**Comment:** This is a favorable increase. However, the issues discussed above must be addressed in order to ensure that this trend continues.

(ICMA LONDON)



## CASE STUDY No: -10 (Balance Score Card)

Nestle India Ltd makes custom labeled, high quality, specialty candy bars for special events and advertising purposes. The company employs several chocolatiers who were trained in Switzerland. The company offers many varieties of chocolate, including milk, semi-sweet, white, and dark chocolate. It also offers a variety of ingredients, such as coffee, berries and fresh mint. The real appeal for the company's product, however, is its custom labeling. Customers can order labels for special occasions (for example, business card labels). The company's balance scorecard for 2015 follows. For brevity, the initiatives taken under each objective are omitted.

Objectives	Measures	Target performance	Actual performance
Financial perspective			
Increase shareholders values	Operating-income changes from price recovery	₹5,00,000	₹7,50,000
	Operating-income changes from price growth	₹1,00,000	₹1,25,000
	Cost saving due to reduced packaging size	₹20,000	₹25,000
Customer perspective			
Increase market share	Market share of overall candy bar market	8%	7.8%
Increase the number of new product offerings	Number of new product offerings	5	7
Increased customer acquisition due to sustainability effort	Percentage of new customers surveyed who required recycled paper options	35%	40%
Internal-business-process perspective			
Reduce time to customer	Average design time	3 days	3 days
Increase quality	Internal quality rating (10-points scale)	7 points	8 points
Increase use of recycled materials	Recycled materials used as a percentage of total materials used	30%	32%

Objectives	Measures	Target performance	Actual performance
Learning-and growth perspective			
Increase number of professional chocolatiers	Number of chocolatiers	5	6
Increase number of women and minorities in the workforce	Percentage of women and minorities in the workforce	40%	38%

#### Required:

1. Was Nestle successful in implementing its strategy in 2015? Explain your answer.
2. Would you have included some measures of customer satisfaction in the customer perspective? Are these objectives critical to Nestle for implementing its strategy? Why or why not? Explain briefly.
3. Explain why Nestle did not achieve its target market share in the candy bar market but still exceeded its financial targets. Is “market share of overall candy bar market” a good measure of market share for Nestle? Explain briefly.
4. Do you agree with Nestle’s decision not to include measures of changes in operating income from productivity improvements under the financial perspective of the balanced scorecard? Explain briefly.
5. Why did Nestle include balanced scorecard standards relating to environment and social performance? Is the company meeting its performance objectives in these areas?

#### *Solution*

1. Nestle’s strategy is to focus on “service-oriented customers” who are willing to pay a higher price for services. Even though candy bars are largely a commodity product, Nestle wants to differentiate itself through the service it provides with its custom labeling and high-quality product.  
Does the scorecard represent Nestle’s strategy? By and large it does. The focus of the scorecard is on measures of process improvement, quality, market share, and financial success from product differentiation and charging higher prices for customer service. There

are some deficiencies that the subsequent assignment question raises, but abstracting from these concerns for the moment, the scorecard does focus on implementing a product differentiation strategy.

Based on the scorecard being reasonably well designed, how has Nestle performed relative to its strategy in 2015? It appears from the scorecard that Nestle was successful in implementing its strategy in 2015. It achieved all targets in the financial, internal business, and learning and growth perspective (other than women and minorities in the workplace). The only target it missed was the market share target in the customer perspective. At this stage, students may raise some questions about whether this is a good scorecard measure. Requirement 3 gets at this issue in more detail. The bottom line is that measuring “market share in the overall candy market” rather than in the “Specialty candy” market segment is not a good scorecard measure, so not achieving this target may not be as big a miss as it may seem at first.

2. Yes, Nestle should include some measure of customer satisfaction in the customer-perspective. Nestle differentiation strategy and ability to charge a premium price is based on meeting and/or exceeding customer expectations, especially in the custom design of the labels. Unsatisfied customers will not be loyal or will be unlikely to recommend the company’s product. Hence, customer satisfaction is very important to Nestle for implementing its strategy. These measures are leading indicators of whether Nestle will be able to increase its market share in the specialty candy market and should be measured on the balanced scorecard.
3. To evaluate if it has been successful in implementing its strategy, Nestle needs to measure its market share in its targeted market segment, not its market share in the overall market. Given Nestle’s strategy, it should not be concerned if its market share in the candy bar segment declines. In fact, charging premium prices will probably cause its market share in this segment to decline. Nestle should replace “market share in overall candy bar market” with “market share in the specialty food/candy segment” in its balanced scorecard customer measure. If Nestle is successfully implementing its strategy, its market share in the specialty candy segment should increase.
4. Nestle is correct in not measuring changes in operating income from productivity improvements on its scorecard under the financial perspective. Nestle’s strategy is to grow by charging premium prices for customer service. The scorecard measures focus on Nestle’s success in implementing this strategy. Productivity gains per se are not critical to Nestle’s strategy and therefore, should not be measured on the scorecard.
5. Nestle included social and environmental performance measures in its balanced scorecard because it believes strong environmental and social performance gives it a competitive advantage by (1) attracting and inspiring outstanding employees, (2) enhancing its reputation with socially conscious customers, investors and analysts and (3) boosting its image with governments and citizens, all of which contribute to long-run financial performance. Nestle also believes that focusing on environmental and social performance in addition to financial

performance helps it to innovate in technologies, processes, products, and business models to reduce the trade-offs between financial and sustainability goals and build transformational leadership and change capabilities to implement these “triple bottom line” strategies.

- Following the concept of shared value, nestle includes social and environmental measures (together with business goals and measures) in its balanced scorecard to evaluate how well it is doing toward achieving its social and environmental goals. The balanced scorecard indicates that Nestle’s social and environmental initiatives are having an effect. Nestle’s increased use of recycled materials as a percentage of total material used has resulted in attracting customers for whom using recycled materials matters, creating long-term financial benefit. Similarly, increasing the number of women and minorities employed will allow Nestle to target a larger number of talented individuals. Reducing the size of packing both increase income and reduce waste, achieving both financial and sustainability objectives.

Not all companies believe in implementing sustainability goals, but those that do find the balanced scorecard to be a useful tool to simultaneously implement both financial and sustainability goals. **(ICMA LONDON)**



### CASE STUDY No: -11 (Balance Score Card)

IndiGo is a no-frills airline that services the major cities in India. Its mission is to be the only short-haul, low-fare, high-frequency, point-to-point carrier. However, there are several large commercial carriers offering air transportation, and India knows that it cannot compete with them based on the services those carriers provide. India has chosen to reduce costs by not offering many in-flight services, such as food and entertainment options. Instead, the company is dedicated to providing the highest quality transportation at the lowest fare. IndiGo’s balanced scorecard measures (and actual results in 2015 follow):

Objectives	Measures	Target performance	Actual performance
<b>Financial perspective</b>			
Increase shareholders	Operating-income changes from productivity	₹12 crore	₹14 crore
Value	Operating-income changes from price recovery	₹4.5 crore	₹6 crore
	Operating –income changes from growth	₹5.0 crore	₹6.6 crore
	Cost savings due to reduction in Jet consumption	₹1.5 crore	₹1.8 crore
<b>Customer Perspective</b>			

Objectives	Measures	Target performance	Actual performance
Increase number of on time arrivals	FAA on-time arrival ranking	1 <sup>st</sup> in industry	2 <sup>nd</sup> in industry
	Percentage of customer survey with greater than	100%	96%
Improve brand image	90% approval rating on company's sustainability efforts		
<b>Internal-Business process perspective</b>			
Reduce turnaround time	On-going time	<25 minutes	30 minutes
Reduce Co2 emissions	Number of engineering changes that decreased CO2 emissions	10	9
<b>Learning and growth Perspective</b>			
Align ground crews	% of ground crews stock holders	70%	68%
Acquire new energy management tool technology	Achieve ISO 50001 certificate in energy management	70% acquired certificate by Dec.31	68% Acquired certificate by Dec.31

1. What is IndiGo's strategy? Was Indigo Successful in implementing its strategy in 2015? Explain your answer.
2. Based on the strategy identified in requirement 1 above what role does the price-recovery component play in explaining the success of IndiGo?
3. Would you have included customer-service measures in the customer perspective? Why or why not/Explain briefly.
4. Would you have included some measure of employee satisfaction and employee training in the learning-and-growth perspective? Would you consider this objective critical to IndiGo for implementing its strategy? Why or why not? Explain briefly?
5. Why do you think IndiGo has introduced environment measures in its balanced score-card? Is the company meeting its performance objectives in this area?

**Solution:**

- (1) IndiGo is following a cost-leadership strategy based on low-cost, no frills, and high quality, IndiGo was successful in meeting its meeting its financial targets in 2015, but it did not achieve target performance in the other three perspectives. It was therefore only partially

successful in implementing its strategy. The nonfinancial measures are leading indicators of future performance. Not meeting these targets means that Indigo may not be able to sustain its performance in future periods. In other words, while Indigo was able to achieve its short gain goals, will it be able to achieve its long-term goals? To do so, Indigo needs to improve its internal business and learning and growth performance.

- (2) Normally the price recovery component indicates that a company has been successful in differentiating its product or service to command a price premium so that the prices of outputs be faster than the prices of inputs. For Indigo, the price recovery components measure the more inputs prices resulting from strong negotiations with suppliers while maintaining output prices. The productivity component measures the efficiency use of input quantities and the information of certain in-flight services. A favorable price recovery component from reducing input prices is an important part of Indigo's strategy that contributes to its profitability.
- (3) It would not have included customer-service measures in Indigo's customer perspective because it is not part of Indigo strategy. Indigo does not compete with other carries on the basis of its services. In fact, it does not offer in-flight services such as food and entertainment options. It is no-frills airline; whose strategy is to eliminate services in order to reduced elements. We are not debating the merits of the strategy. Only that given the strategy measures to customer service should not appear on the scorecard.
- (4) Yes, Indigo should include some measure of employee satisfaction and employee training the learning and growth perspective. Indigo's low-cost strategy is based on efficiency the way to good, fast, and friendly customer service is well trained and satisfied employees. Untrained and dissatisfied employees have poor interactions with customers and other employees and cause the strategy to fail. Hence, training and employee satisfaction are very important for Indigo to implement its strategy. These measures are, therefore, leading indicators of whether Indigo will be able to successfully implement its strategy over the long term and should be measured on the balanced scorecard.
- (5) Indigo included social and environmental performance measures in its balanced score-card because it believes strong environment and social performance gives it a competitive advantage by (1) attracting and inspiring outstanding employees (2) enhancing its reputation with socially conscious customers, investors and analysis, and (3) boosting its image with governments and citizens, all of which contribute to long-run financial performance. Indigo also believes that focusing on environmental and social performance in addition to financial performance helps it to innovate in technologies, processes, products and business models to reduce the trade-offs between financial and sustainability goals and build international leadership and change capabilities to implement these "triple bottom line" changes.

Following the concept of shared value, Indigo includes social and Environmental measures together with business goals and measures in its balanced scorecard to evaluate how well it is doing toward achieving its social and environmental initiatives are by and large succeeding. Indigo has successfully obtained ISO 50001 certification in energy

management. This focus has helped it to implement engineering changes that decrease CO2 emissions. It was to implement 10 such changes, but is made only 9.) As it made these changes, customer surveys indicated that 96% of customers approved of Indigo's sustainability efforts, slightly lower than the 100% of customers that Indigo had targeted. In turn, these actions resulted to cost savings in Jet fuel consumption that exceeded targets. Indigo may need to make some small changes in its sustainability and environmental performance measures and targets but by and large it is helping Indigo meet its long-term financial and sustainability goals. Not all companies believe in implementing sustainability goals, but those that do find the balanced scorecard to be a useful tool to simultaneously implement both financial and sustainability goals.

**(ICMA LONDON)**



### Case study No: - 12 (Balance Score Card)

Oracle Company provides cable and Internet services in the greater Gurgaon area. There are many competitors that provide similar services. Oracle believes that the key to financial success is to offer a quality service at the lowest cost. Oracle currently spends a significant number of hours on installation and post-installation support. This is one area that the company has targeted for cost reduction. Oracle's balanced scorecard for 2015 follows.

Objectives	Measures	Target performance	Actual performance
<b>Financial perspective</b>			
Increase shareholders values	Operating-income changes from productivity	₹12,00,000	₹4,00,000
	Operating-income changes from growth	₹2,60,000	₹1,25,000
	Increase in revenue from new customer acquisition	₹25,000	₹12,000
<b>Customer perspective</b>			
Increase customer satisfaction	Positive customer survey responses	70%	65%
Increase customer acquisition	New customers acquired through company sponsored community events	5	7

Objectives	Measures	Target performance	Actual performance
Increased customer acquisition due to sustainability effort	Percentage of new customers surveyed who required recycled paper options	475	350
<b>Internal- business-process perspective</b>			
Develop innovative services	Research and development costs as a percentage of revenue	5%	6%
Increase installation efficiency	Installation time per customer	5 hours	4.5 hours
Increase community involvement	Number of new programs with community organization;	12	15
Decrease workplace injuries	Number of employees injured in the workplace	<3	7
<b>Learning-and growth perspective</b>			
Increase employee competence	Number of annual training-hours per employee	10	11
Increase leadership skills	Number of leadership workshops offered	2	1
Increase employee safety awareness	Percent of employees who have completed safety certification training	100%	95%

**Required:**

1. Was Oracle successful in implementing its strategy in 2015? Explain.
2. Do you agree with Oracle's decision to include measures of developing innovative services (research and development costs) in the internal-business-process perspective of the balanced score-card? Explain briefly.
3. Is there a cause-and-effect linkage between the measures in the internal-business-process perspective and the customer perspective? That is, would you add other measures to the internal-business-process perspective or the customer perspective? Why or why not? Explain briefly.
4. Why do you think Oracle included balanced scorecard measures relating to employee safety

and community engagement? How well is the company doing on these measures?

**Solution: -**

1. The market for cable and internet provider is competitive. Oracle's strategy follows a cost leadership strategy--- providing quality service at low cost by being efficient, and effective. The scorecard correctly measures and evaluates oracle's strategy of growth through productive gains and cost leadership. There are however some deficiencies that subsequent assignment questions will consider.  
It appears from the scorecard that Oracle was not successful in implementing its strategy in 2015. Although it achieved targeted performance in most of the learning and growth and internal business process perspective, it significantly missed its targets in the customer and financial perspective. Oracle has not had the success it targeted in the market and has not been able to improve efficiency in order to reduce costs.  
Oracle's scorecard does not provide an explanation of why the target customer satisfaction measure was not met in 2015. Was it due to poor quality? Higher prices? Poor post sale service? Aggressive competitors? the scorecard is not helpful for understanding the reasons underlying the poor customer satisfaction.
2. Oracle should not include R&D cost in its internal business process perspective. It should not focus on developing innovative services because it is not following a product differentiation strategy. It needs to cut these costs and focus instead of providing customer a quality service at the lowest costs, and faster and more efficient installation, consistent with its low-cost strategy.
3. There is cause-and-effect relationship between the installation time per customer and customer satisfaction but not between money spent in R&D and customer satisfaction. As discussed in requirement 2 above, I would drop the R&D measures. I would then add measures for the quality of the installation service to the internal business process perspective. How much time does it take to schedule an appointment after the customer calls? Does the service work flawlessly after it has been installed? Do customers call Oracle to fix problems? How much time it spent on post-installation support? The point is to add more measures to the internal business process perspective so that Oracle can get a better understanding of the reasons underlying increases and decreases in customer satisfaction.  
In the customer perspective, I would add measures to track Oracle's market share in Gurgaon area. Do increases in customer satisfaction translate into higher market shares? Is Oracle correctly identifying the factors that customer care deeply about and making improvements in those areas faster than its competitors?  
Although not required by the question, the instructor could ask the class what else Oracle might want to include in the learning and growth perspective to support the customer and internal business process perspectives. The learning and growth measures would then serve as leading indicators (based on cause-and-effect relationships) for the internal-business processes and customer satisfaction. For example, Oracle could include a measure related to employee satisfaction or retention. For example, higher employee satisfaction would lead

to greater ownership of employees in providing a quality service. This is critical for Oracle to successfully implement its strategy.

4. Oracle included social and environmental performance measure in its balanced scorecard because it believes strong environmental and social performance gives it a competitive advantage by (1) attracting and inspiring outstanding employees, (2) enhancing its reputation with socially conscious customers, investor and analysts, and (3) boosting its image with government and citizens, all of which contribute to the long run financial performance. Oracle also believes that focusing on environmental and social performance in addition to financial performance helps it to innovate in technologies, processes products and business models to reduce the tradeoff between financial and sustainability goals and build transformational leadership and change capabilities to implement these “triple bottom line” strategies.

Following the shared value, Oracle includes social and environmental measures (together with business goals and measures) in its balanced scorecard to evaluate how well it is doing toward achieving its social and environmental goals. The balanced scorecard indicates that Oracle’s social and environmental initiatives are having mixed results. Oracle’s focus on safety certification training aims to decrease workplace injuries and to reduce overall costs. So far, the safety certification goals have not been met and workplace injuries have not been reduced to their target levels. Oracle would need to consider if the safety certification training has been as effective as it was intended. Similarly, increasing the number of new programs with community organizations aims to increase the number of new customers acquired as a result of these initiatives and in turn to increase revenue from new customers. Even though the number of new programs started exceeded the target revenue from new customers. Oracle would need to reevaluate the kinds of new programs it is implementing.

Not all companies believe in implementing sustainability goals, but those that do find the balanced scorecard to be a useful tool to simultaneously implement both financial and sustainability goals.

(ICMA LONDON)



## Value for Money

Frame Work which can be used for measurement of Performance is not for Profit sector (3E)

**Effectiveness**

**Efficiency**

**Economy**

**EFFECTIVENESS**



(Are the Organization achieve their objective)

Nature of Organization	Objective (C.S.F.) Goals	KPI (How can we measure)
Normally	➤ Customer Satisfaction	➤ On time delivery, Quality
School	➤ To Provide better quality education to desired/Poor student	➤ No. of student dropping out of school (Should be low)
		➤ No. of student success fully complete their course & Join next higher study/Job (Should be high).
Hospital	➤ To Provide better quality treatment to patients	➤ Re admission of patient in next short period (low)
	➤ Prompt medical services	➤ Low patient waiting time
	➤ Satisfaction of Patient	➤
For cleaning To beach- Contractor appointed	<ul style="list-style-type: none"> <li>➤ Improve cleanliness of beach/particular place.</li> <li>➤ Litter/Garbage should be explained not necessary to clean every paper, but main can be done like soft drink, aluminum can, Glass bottle, animal dropping, food refusal, not sea weeds.</li> </ul>	➤ How-From Feedback/complaint, message from visitor's surprise visit by inspector.

**EFFICIENCY (Productivity)**  
**(Max Output can be achieved with Minimum Resources)**



(Whether Resources/Funds have been utilized effectively)

Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)
Normally: - Consumption of Time/material per unit of Production		
Schools	<ul style="list-style-type: none"> <li>➤ How many students can be taught trained by a teacher in one hour</li> </ul>	<ul style="list-style-type: none"> <li>➤ No of students = XX</li> <li>➤ No. of Teachers = XX</li> <li>➤ Teacher Ratio should be quite satisfactory</li> <li>➤ (Student to teacher Ratio)</li> </ul>
Hospitals	<ul style="list-style-type: none"> <li>➤ No. of Patient treated by doctor in a period</li> </ul>	<ul style="list-style-type: none"> <li>➤ No. of Patient = XX (A)</li> <li>➤ No. of Doctors = XX (B)</li> <li>➤ <math>a/b</math> = No. of Patients treated per doctor (should be low)</li> <li>➤ Waiting time of patient to receive treatment (should be low)</li> </ul>
Cleaning Authority	<ul style="list-style-type: none"> <li>➤ Cost per operation per tractor/Vehicle/Per Km.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Cost of Running the tractor = XX (a)</li> <li>➤ No. of tractors operated OR Tractor Km= XX (b)</li> <li>➤ <math>a/b</math> = Cost per operation per Tractor or per KM.</li> <li>➤ (Low is better)</li> </ul>

**ECONOMY (Cheap, Qualitative, better)**  
**Has the desired output (and quality of service) been achieved at the lowest cost.**



Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)
(Assess the Financial aspect of Activity)		
Main Objective	<ul style="list-style-type: none"> <li>➤ Desired output can be achieved from lowest cost without compromising the quality</li> </ul>	
School	<ul style="list-style-type: none"> <li>➤ How much amount spent on maintenance /remunerations</li> </ul>	<ul style="list-style-type: none"> <li>➤ Amount spent on maintaining the school premises, remuneration to teacher.</li> <li>➤ Actual amount should be compared with Budget (Standard)/Sanctioned amount (should be justified)</li> </ul>

Hospitals	<ul style="list-style-type: none"> <li>➤ How much amount spent on Maintenance, Salary of Doctors/ staff.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Salary amount should be significant/Justified compare with budget or other Hospital (Bench mark)</li> </ul>
Contractors for Cleaning	<ul style="list-style-type: none"> <li>➤ Cleaning Expenses</li> <li>➤ Competitive tending Process: - Followed Review</li> <li>➤ Quality of service with lowest cost.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Payment made to contractor. Expenditure incurred on empty waste from bin other exp: Labour, Material, Disposal Van, compare with budget/similar cleaning activity carried by neighbor town</li> <li>➤ Compare with Budget/ Targate</li> </ul>



## CASE STUDY No: - 1: Value for Money - Charitable School

Let's consider a case of a school which provides free education to children who come from BPL (below the property line) families. The school also provides free lunch to the students to encourage daily attendance. Evaluate the Frame work to measure the performance of School.

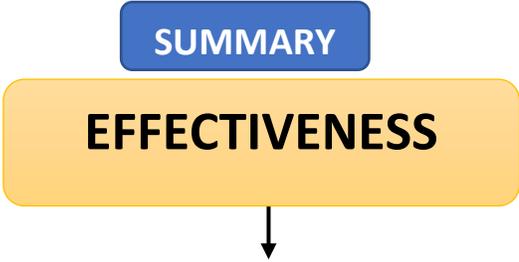
**(Study Material)**

**Solution:** - A measure of effectiveness is whether the school has been able to provide quality education to desired number of students. The performance of the school can be measured using the metrics of number of students dropping out of school year- on-year. Another measure of performance could be the number of students who have successfully completely the 12th exams and joined college. It is important to note that the measures might not be wholly within the control of the school. A student might drop out even after best efforts by the school. This makes the performance measurement a challenging task.

A measure of efficiency could be the number of students trained per hour spent by teachers or the students to teacher ratio. In case of schooling a lower student to teacher ratio is always preferred.

A measure of economy would be the amount spent on maintaining the school premises, amount spent on remuneration to teachers etc. The amount spent can be compared against the budgeted expenditure or sanction amount.

If performance is measured based on cost incurred, the school might as well decide to cut necessary expenditure to meet the expenditure budget. For example, the school might not spend adequate amount to upkeep the library or computer equipment. This can be detrimental in the longer run. Hence, it is important to balance the financial measures with non-financial measures.



(Are the Organization achieve their objective)

Nature of Organization	Objective (C.S.F.) Goals	KPI (How can we measure)
Normally	➤ Customer Satisfaction	➤ On time delivery, Quality
School	➤ To Provide better quality education to desired/Poor student	➤ No. of student dropping out of school (Should be low)
		➤ No. of student success fully complete their course & Join next higher study/Job (Should be high).

**EFFICIENCY (Productivity)**  
**(Max Output can be achieved with Minimum Resources)**



(Whether Resources/Funds have been utilized effectively)

Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)
Normally: - Consumption of Time/material per unit of Production		
Schools	➤ How many students can be taught trained by a teacher in one hour	➤ No of students = XX ➤ No. of Teachers = XX ➤ Teacher Ratio should be quite satisfactory ➤ (Student to teacher Ratio)

**ECONOMY (Cheap, Qualitative, better)**  
**Has the desired output (and quality of service) been achieved at the lowest cost.**



Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)
(Assess the Financial aspect of Activity)		
Main Objective	Desired output can be achieved from lowest cost without compromising the quality	
School	How much amount spent on maintenance /remunerations	Amount spent on maintaining the school premises, remuneration to teacher. Actual amount should be compared with Budget (Standard)/Sanctioned amount (should be justified)



## CASE STUDY No: -2: - Value for Money

Cure Hospital is running under private public partnership (PPP) model providing treatment for non-communicable disease. ABCO Hospitals Limited is the private partner which runs a chain of hospitals on profit basis in major cities in India. The public partner is the State Government. Cure Hospital is a “not-for-profit” hospital.

Private partner is to invest in upgrading and equipping the facility and responsible for operational management and service delivery. Government to provide physical space and other infrastructure in “as is where is” condition, provide support facilities and hospital amenities. Private partner assumes the entire responsibility for a full range of investment, operation and maintenance functions. Private partner has the authority to make daily management decisions.

The hospital is funded to a great extent by the state Government and a fixed level of funding is received from the government and a fixed level of funding is received from the government each year out of the State budgetary allocation. It is up to the hospital to allocate this fund to different areas such as doctors and other staff salaries, medicines and all other costs required to run a hospital.

### Cure Hospital’s objectives are:

- to give prompt access to high quality medical treatment for patients.
- to provide free treatment to poor patients in line with government policy of inclusive development.
- to provide value for money for the taxpayer –measured by the 3 Es framework of Economy, Efficiency and Effectiveness.
- to contribute to medical science by developing innovative ways to deliver treatment to patients.

Except select surgeries, all services are free for poor patients that are below poverty line (BPL)

card holders 40% beds are reserved for poor patients. Free out patient's department (OPD) services to poor. CT Scan and MRI diagnostics are free for poor patients, subscribed rates for others. Cure Hospital also runs a generic medicine shop inside the hospital premises which sells medicines to all patients at discount ranging from 40% to 56% - the only shop of this kind in the city.

WHO has agreed to provide financial and technical support to the neonatal care unit? The hospital enabled it to obtain five accreditation certificates from various leading authorities on different aspects of hospital management.

Feedback is taken from each in –patient about the quality of service provided by the hospital and the satisfaction level is taken in 1-to-10-point scale. 1 being the least satisfied and 10 represents totally satisfied.

In a recent meeting of the managing committee of the hospital, discussions were held about inadequate performance measurement systems in place to assess whether the hospital is achieving its objectives and that insufficient attention is given to the importance of non-financial performance indicators. A four-member team consisting of a performance management expert and three senior doctors was created to give their advice in these aspects.

The four-member team met with doctors, staff and other stakeholders at length and breadth. Some of the conversations were as below:

**Doctor A:** I think the hospital always delivers value for money. We have always achieved out total financial budgets.

**Doctor B:** We work here much longer hours than doctors in other hospitals, often without being paid for working overtime.

**Doctor C:** There is not enough government and private partner funding to recruit more doctors and paramedical staff.

**Doctor D:** Number of out-patients has increased considerably. Earlier an out-patient has to wait for an average period of 2 hours 20 minutes and now the same has increased to 3 hours.

**Senior Doctor K:** I do not know how much time we spend developing innovative ways to deliver treatment to patients though, as most of the performance data we doctor receive relates to financial targets.

In-patient H: Incompetent paramedic staff, poor quality of food and bed, linen.

**Staff M:** Management undermines out role in running the hospital.

**Recent performance data of the hospital vis-à-vis national average are as follows:**

	<b>Cure Hospital</b>	<b>National average of other PPP run hospitals</b>
Number of doctors	80	76
Average doctors' salaries per month including overtime.	₹ 1,20,000	₹ 1,60,000
Average doctors' salaries including overtime as per budget	₹ 1,20,000	₹ 1,25,000
Number of in-patients treated	8,360	6,369
Average satisfaction rating of in-patients	6	9
Number of patients readmitted for treatment of the same ailment within short period of time after discharge from the hospital.	627	128
Average staff satisfaction rating (0% represents totally dissatisfied and 100% represents totally satisfied.)	16%	86%
Number of out-patients treated.	76,212	63,318

**Required:**

- Explain why non-financial performance indicators are particularly important to measure the performance of “not-for-profit” organisations such as Cure Hospitals.
- Evaluate whether Cure Hospital is delivering value for money for each of the components of the value for money framework.
- The CEO of the hospital intends to introduce a nominal fee for out-patient treatment given to poor patient and remove subsidized rate of CT scan and MRI diagnostic for other patients in order to achieve its objectives in a better way. Evaluate the proposal of the CEO.

**Answer: -**

- Cure Hospital has been formed in a public-private partnership to provide quality healthcare to the public, with focus on the poorer sections of the society. Healthcare service is provided for free, except for select surgeries. A sufficient portion of its capacity (hospital beds) is reserved entirely for Below Poverty Line (BPL) patients. Generic medicines are provided at a discounted price, to make them more affordable. World Health Organization (WHO) has decided to fund its neo-natal unit. With all this information, it can be summarized that Cure Hospital has been formed “not-for-profit” objective, attending to a

social cause of providing quality healthcare to the economically poorer sections of the society.

Cure Hospital has been formed in partnership with ABCO Hospitals Ltd. and the State Government. The State Government has provided physical space, infrastructure, other support facilities and hospital amenities. ABCO Hospital, the private partner has the entire responsibility of taking care of allocation of funds, investment, operations, and maintenance functions. Daily management decisions are also handled by the private partner.

Since the Government has provided substantial funding and facilities to Cure Hospital, it owes a fiduciary responsibility of reporting the financial measures to its stakeholders, the government in this case. At the same time, financial measures alone are not enough to assess the performance of not-for-profit organizations. Due to its objective of public service, measurement of appropriate non-financial metrics is equally important. The reasons are:

- (i) **Benefits cannot be quantified:** Cure Hospital essentially provides public healthcare service to the economically weaker sections of the society. Due to political, legal, and social reasons, not-for-profit organizations like Cure Hospital cannot be shut down merely for not being economically / financially viable. Therefore, financial measures are less relevant. Due to its non-financial objective, appropriate non-financial measures become more important. For example, the benefits of saving lives cannot be quantified in financial terms.
- (ii) **Benefits may accrue over long term:** The expenditure incurred in one year may yield benefits over several years. For example, the investment in an Intensive Care Unit (ICU) facility may accrue over multiple years. Neonatal care unit have been given financial and technical support from WHO which will give long term benefits to hospital.
- (iii) **Measurement of utilization of funds and expenditure:** In the case of Cure Hospitals, many hospital services are free, allocation of capacity is aimed at providing free service to the BPL section of the society, medicines are provided at discounted rates. Therefore, Cure Hospital does not have a substantial revenue stream to earn from its patients. It gets a fixed budget allocation from the State Government, while ADCO Hospital allocates these funds for various investments and expenditures. The assessment whether the spending have been appropriate is a key challenge. Defining cost per unit would be subjective since it could be cost of patients arriving at the hospital or cost of patients successfully treated at the hospital. Either figure could be tweaked to make it seem that the objectives are being met. The management may resort to rampant spending simply to meet the expenditure targets. Therefore, non-financial measure needs to be put in place help stakeholders scrutinize whether the objectives for which funds have been given are being met.
- (iv) **Multiple objectives:** Not-for-profit organizations have multiple objectives. It may be unclear which are the most important. Cure Hospital aims at providing high quality treatment to its patients while also developing innovative ways to deliver treatment to its patients. Both objectives are equally important and inter-related. Non-financial

measures provide better information about how each of these objectives have been met.

**The benefits of organizations like Cure Hospital are non-financial in nature. Except for providing fiduciary information to the stakeholders, all other objectives of Cure Hospital can be measure only using non-financial measures.**

(b) Value for money for Cure Hospital would comprise of the 3Es: Economy, Efficiency and Effectiveness.

(i) **Economy:** Has the desired output (and quality of service) been achieved at the lowest cost?

The medical resource at Cure Hospital in terms of doctors is 80, higher than the national average of 76 at other centers. Doctor's salaries would be a significant expenditure for Cure Hospital. The average doctor's salary at Cure Hospital (including overtime) is Rs.120,000 per month, this is within the budget figure as pointed out by Doctor A. The salary is lower than the national average at other PPP run hospitals, where doctors earn Rs.160,000 per month. Therefore, economy of money is being achieved at Cure Hospital.

The relatively lower levels of salary could be due to differences in levels of experience or that the doctors at Cure Hospital work overtime without getting paid (as pointed out by Doctor B). This may be one of the reasons why staff satisfaction is only 16% compared to 86% in other centers.

(ii) **Efficiency:** Has maximum output been achieved with the minimum resources?

Treating patients is the key objective of Cure Hospitals, while doctors are the main resource to deliver it. The number of patients treated per year is a good measure of efficiency achieved.

Cure Hospital treats 84,572 patients (in house patient 8,360 + outpatient 76,212) while the national average at other centers is only 69,687 (in house patient 6,369 + outpatient 63,318). Cure Hospital has 80 doctors as compared to 76 national average. Therefore, each doctor at Cure Hospital treats 1,057 patients (84,572 patients/ 80 doctors) as compared to 917 patients (69,687 patients / 67 doctors) at other centers. Resource utilization of its pool of doctors is higher in Cure Hospital.

Doctor C mentions that there is not enough funding to hire more doctors and para - medic staff. Therefore, there is a constraint on the limited resources of doctors and support staff. This might be the reason, why each doctor at Cure Hospital works longer than colleagues at other centers.

Therefore, while efficiency in terms of number of patients treated by each doctor is high, there are other hidden costs that need to be taken into account. Few such costs could be low employee morale, higher waiting time of patients to receive treatment. This impacts the effectiveness of service provided.

(iii) **Effectiveness:** Has Cure Hospital achieved its mission or objective?

Cure Hospital has the objective of providing high quality medical service to its patients. Better quality of treatment would ensure that re-admission for treatment of the same ailment within a short span of time would be minimal. Number of such re- admitted

patients in much higher at 627 at Cure Hospital as compared to 128 at other centers. Assuming all such re-admissions to be in-house patients, this return of patients for medical care for the same ailment within a short span of time is 7.50% compared to the national average of 2.01%.

Prompt medical treatment can also be questioned since the waiting time of patients to receive treatment has increased from 2 hours 20 minutes to 3 hours.

Senior Doctor K points out the time spent on delivering innovative care to patients may be limited due to financial constraints and overwork staff.

All this would have resulted in dissatisfaction among patients, whose survey indicates a score of 6 against a national average of 9. This shows that objective of Cure Hospital is not being met effectively.

To summarize, Cure Hospital is achieving economy by maintaining lower salaries for doctors. Out-reach to patients is also high as compared to national average. However, due to limited availability of resources, doctors and staff are overworked. While it does well on the efficiency aspect, it comes with a hidden cost in terms of dissatisfaction among patients and employees and low quality of medical care.

Therefore, medical treatment is not effective, which is an important aspect in the value for money framework.

- (c) Proposal to introduce nominal fee for out-patient treatment given to poor people and remove subsidized rate of CT scan and MRI for other patients.

Cure Hospital is a not-for-profit organization that aims at providing quality health care to the economically weaker sections of the society. It gets its primary funding from the State Government. It does not generate and is not aimed at generating substantial revenue from its patients. The CEO has proposed to introduce nominal fee for out-patient treatment given to poor people and remove subsidized rate of CT scan and MRI for other patients. However, this would not help Cure Hospital achieve its objective.

The given problem seems to suggest severe constraint in the resources available to meet its objectives thus impacting effectiveness of treatment. Each doctor treats 1,057 patients in a month as compared to the national average of 917 in a month. Number of patients, especially the out-patients is much more than national average. Overworked doctors combined with limited staff resources is the main hurdle that Cure Hospital faces in effectively achieving its objectives.

Cure Hospital is a not-for-profit organization. Therefore, generating nominal fees to achieve its objectives would not help its purpose. Instead, it can apply for higher budget allocation from the government. This can help it procure good quality resources such as experienced doctors by paying them higher salaries including overtime. Better qualified doctors can help provide not just better treatment but also innovative ways of treatment to patients. Improved / enhanced facilities could reduce the waiting time for medical care, enabling prompt medical service.

Improved service would result in better treatment, lowering the cases for re-admissions for same ailment within a short span of time. This improves the effectiveness of medical

care provided at Cure Hospital. Better service would improve patient satisfaction. Quality medical care would provide a better case for Cure Hospital to sustain its operations in the long- run. The State Government may also more favorably consider any justifiable future budgetary increments.

Overall, the management of the hospital seems to be indifferent to the opinions and needs of the staff. The CEO’s decision has a very short-term outlook that does not co-relate with the organization’s objectives. By trying to off-set a limited revenue stream to achieve its objectives shows that the management’s style of working needs improvement. (NOV’19)

(ICMA London)

**SUMMARY**

**EFFECTIVENESS**

(Are the Organization achieve their objective)

Nature of Organization	Objective (C.S.F.) Goals	KPI (How can we measure)	Data		
Normally	Customer Satisfaction	On time delivery, Quality		Cure hospital	Other Center
Hospital	To Provide better quality treatment to patients	Re admission of patient in next short period (low)	No. of Readmitted patient (a)	627 (High)	128
			Total No. of in-patients treated (b)	8360	6369
	Satisfaction of Patient		% (a/b)	7.5% (High)	2.01%
	Prompt medical services	Low patient waiting time	Waiting time	3 hours	2 hours 20 minutes

**EFFICIENCY (Productivity)**  
**(Max Output can be achieved with Minimum Resources)**



**(Whether Resources/Funds have been utilized effectively)**

Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)	Data			
Normally: - Consumption of Time/material per unit of Production				Cure Hospital	National average at Other centers	
Hospitals	➤ No. of Patient treated by doctor in a period	➤ No. of Patient = XX (A) ➤ No. of Doctors = XX (B) ➤ $a/b$ = No. of Patients treated per doctor (should be low) ➤ Waiting time of patient to receive treatment (should be low)	No. of Patients (a)  No. of Doctors (b)  Patient per doctor	8360 + 76,212 = 84574  80  84574/80 = 1057 (High Resource utilisation)	6369 + 63318 = 69687.  76  69687/76 = 917	

**ECONOMY (Cheap, Qualitative, better)**  
**Has the desired output (and quality of service) been achieved at the lowest cost.**



Nature of Organization	Objectives (C.S.F.)	K.P.I. (How can we	Data
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	Goals	measure)			
(Assess the Financial aspect of Activity)				Cure hospital	National average at Other centers
Hospitals	How much amount spent on Maintenance, Salary of Doctors/ staff.	Salary amount should be significant/Justified compare with budget or other Hospital (Benchmark)	No. of Doctors  Average salary	80  1,20,000 per month As per budget	76  1,60,000 (higher than the budget)
Economy of money is being achieved at Cure Hospital.					



## Summary

Proposal to charge nominal concessional rate from poor patient. Removal of subsidy: -  
CEO would not help for cure hospital to achieve their objective / Mission

Objective of cure hospital

- Not for profit org.
- Provide prompt services to needy.
- Provide Quality treatment.
- Innovative treatment to poor economically needy patients.
- (Evaluate): -Suggestions
- Try to Increase the amount of funds received from Govt.

### **By doing this**

- (i) Curve hospital would be able to appoint more/ Qualified doctors
- (ii) Increase the salary of doctors from present Rs120,000(As per budget < average)

Resulting/creating innovative way for treatment to patient. Reducing patient waiting time

Increasing staff satisfaction level reducing Re admission of patient.

i.e., Curve hospital would be able to achieve its objective/Mission.

To some/ Max extent.



## Case Study No.: - 3 -Value for Money

The town of Silver Sands is located along the coast of the Caribbean Sea. Known for its beautiful

coastline and pleasant weather, the town attracts a lot of tourists from all around the world. The town has two beaches that are maintained by the

local government and can be used by the general public. In order to preserve the natural ecosystem, other beaches on the coastline are not accessible to the general public. Tourism is the main source of livelihood for its residents. Consequently, cleanliness of beaches is of paramount importance in order to sustain and develop this industry.

The local government has recently employed a contractor to clean up the beaches using beach cleaning machines. The contractor has been selected through a competitive tendering/bidding process. The contractor uses sand cleaning machines that are pulled by tractors. Sand is scooped onto a conveyor or screening belt. It is either raked through (combed using prongs) or sifted through (filtered), in order to separate the waste from the sand. The cleaned sand is left behind on the beach while the waste is removed. Majority of the litter comprises of plastic waste (bags, bottles etc.) while some portion also includes sea weed, glass, aluminum cans, paper, timber, and cardboard. A detailed log is kept by the contractor about the stretch of beach that has been cleaned, time taken for the clean-up, number of tractors used etc. This log is also checked and signed by a local government official. This record is used to process payments at the end of the month.

In addition to contracting with the vendor to clean machines, the local government has also placed bins at various locations on the beach for the public to dispose their waste. The town's municipality workers clean these bins every morning. Again, detailed logs of the man power and other resources employed is kept by the responsible department. In addition, the government has opened a mobile messaging system, whereby the public can message the government department if they find litter anywhere in the beach. Depending on whether it is from overflowing bins or buried debris in the sand, the municipality workers or the contractor will take action to clear it within 24 hours. A detailed log of these operations is also maintained. Patrons can also suggest measures for improving cleanliness on the beaches.

Due to its importance to the economy, the local government has allotted substantial budget for these operations. At the same time, it is essential to know if this is sufficient for the purpose of keeping the beaches clean. Therefore, the government wants to assess whether the town is getting "good value for money" from this expenditure. The "value for money" concept can be looked at from three perspectives: (i) economy, (ii) efficiency and (iii) effectiveness. The Internal Audit (IA) department that has been requested to undertake this study, has requested for guidelines on whether the audit should focus on economy and efficiency of the beach cleaning operations or on effectiveness of the same. Economy and efficiency audit assess whether the same level of service can be procured at lower cost or resources while effectiveness audit assess whether better service can be procured at same cost.

Depending on the outcome of the audits, if required, policy decisions like requesting for additional funding from the state government, alternate policy measures like levying penalty for littering etc. can be taken.

**Required: -**

**Prepare a letter addressed to the IA department.**

- (i) RECOMMEND guidelines to assess economy and efficiency of beach cleaning operations.
- (ii) RECOMMEND guidelines to assess effectiveness of beach cleaning operations.
- (iii) IDENTIFY challenges involved in assessment of effectiveness?
- (iv) RECOMMEND general guidelines, how the audit team may conclude the audit based on the combined outcomes of economy, efficiency, and effectiveness?

**Solution:** - Date 30- July -2018

Dear Sirs,

**Re: The economy, efficiency and effectiveness of beach cleaning activities**

- (i) Economy and efficiency audit of an operation focuses on the consumption of resources and the output achieved. Economy assesses the financial aspects of the activity i.e., are the objectives of the activity being achieved at reasonable cost? Efficiency assesses the volume of input consumed to derive the desired output i.e., are the resources and funds being consumed to get maximum output?

To look at Economy of Operations, cleaning expenses need to be bifurcated into payments made to the contractor and the expenses of emptying waste from bins. Any further subcategories of these expenses, like labour, material, disposal van expenses etc. also need to be collated from the accounting or cost records. These then have to be compared to the budgets that were approved by the government of Silver Sands. The competitive tendering process can be reviewed to ensure that the contractor getting the order is offering the required quality of service at the lowest price. If the quality of cleaning has been achieved, by staying within budget, the operation is economical. However, if the actual exceeds the budget, the government has to compare them with cost of similar cleaning activities carried by neighboring towns. On comparison, if Silver Sands operations are expensive compared to other towns, it indicates that not only are the operations uneconomical they may not be efficient either.

Efficiency of Operations can be determined by checking the log records maintained for beach cleaning by the contractor and municipality workers. These would have detailed of activities carried out and the resources utilized for each of them. For each of these services (beach cleaning and emptying out bins), the cost drivers can be identified and certain metrics can be developed for analysis. For example, the cost of running the tractors can be divided by the total number of tractors operated to get the cost of operations per tractor or alternatively, by the kilometers of beach cleaned to arrive at a tractor-kilometer rate. While analysing these activities, certain operational considerations have to be given. For example, certain stretches of the beaches may take more time or resources to clean due to issues like rocks or soft sand. Therefore, if resources for operations disproportionate for certain parts of the beaches, the cost of maintaining those stretches need to be worked out. Data to get this information will depend on the extent of detailed maintained in the logs. This information has to be tracked over some period of time in order to understand trends in operations and related expenses.

The data collected from the mobile messaging system should also be investigated. How often and in what stretches of the beach are complaints frequent or maximum? Reasons for these lapses need to be taken from the contractor (for beach cleaning operation) and the concerned department (for emptying bins) in order to find out whether resources are being employed properly.

On this basis, deviations and exceptions should be investigated. The local government can then decide if there can be alternate sites along the coastline that may be more economical and efficient to operate.

- (ii) An audit about Effectiveness of Operations would focus how the actual cleanliness of beaches compares with the desired level as laid out in the policy initiative. To assess whether performance has been met, clear guidelines and metrics have to be defined during policy implementation.

To begin with, it should be clear as to what constitutes litter. From an operational angle, it would be difficult to clean out every bit of paper lying on the beach. However, it is possible to pick up every soft drink aluminum can. Hence, the government authorities must be clear on what constitutes litter? Which is the refuse that must be cleared within exception (example food refuse, animal droppings, glass bottles, tin cans, trash bins etc.) and tolerance level for certain other types of litter (e.g., Paper, seaweed etc.) that may get left behind even after cleaning. Quantity of waste collected would be the indicator to make the above assessment.

Certain other parameters like safety standards can also be defined. Safety problems could be cuts from sharp objects like glass, incidents of vector borne diseases in the area or health problems from polluted sea water. Assessment has to be made whether these standards have been met.

For this, the primary source of information about cleanliness would be feedback from the beach patrons. These could be in the form of complaints received directly or those through the mobile messaging system would provide data to work out the metrics. This would be an indicator of “customer satisfaction”. Other inputs could also be the suggestions given by the patrons about ways to improve cleanliness on the beach.

Observation by making surprise visits to inspect the beaches immediately after the cleaning operations would also provide sufficient evidence about the effectiveness of operations.

- (iii) Challenges Involved in assessment of effectiveness would be:

- (a) Defining standards about what constitutes litter and acceptable level of cleanliness? These are subjective guidelines, the perception of which may differ from person to person.

- (b) Beach patrons also play an important role in making this initiative effective. There has to be a conscious civic sense of duty not to litter, failing which this initiative will most likely be ineffective. Therefore, while measuring performance for effectiveness, collection of more litter does not necessarily indicate effective operations. More litter requires more cleaning and more resources, therefore is actually not a positive indicator of

effectiveness. On the contrary, in the long run, lesser litter collected to maintain desired level of cleanliness would be a good indicator of effectiveness.

(iv) The outcome of the audits can indicate achievement any or none of the three parameters of economy, efficiency and effectiveness of the beach cleaning operation. To form an integrated conclusion based on the different outcomes of individual audits, the audit team may consider the following guidelines:

- (a) Has the objective of the cleaning operation been achieved as per the guidelines in the relevant policy? i.e., have the operations been effective?
- (b) If the answer to (a) is yes, are the expenses within budget. If so, then the operations are economical and efficient.

Given that the operations have been effective at the same time economy and efficiency have been achieved, the team can conclude that the cleaning operations policy has been a success.

A cost-over run can also be justified if the operations have been effective. In that case, the audit team has to conclude whether all expenses incurred are indeed justified and that the resources have been put to the best possible use. If not, can the operations be made more economical or efficient?

- (c) If the answer to (a) is no, the operation has not been effective, then is the difference from the target marginal or huge? If the operations have not been entirely effective, but only by a marginal gap say 95% success, then analysis of expenses can be made similar to the point (b) mentioned above. However, if the operations have been ineffective to a larger extent, then the cleaning drive initiative has been ineffective. The government has to look at alternate solutions of tackling the problem. These could include imposing heavy penalty for littering, requesting for more funding from the state government to employ better resources etc.

Therefore, it can be seen that achievement of one objective does not automatically lead to achievement of other objectives. A holistic approach would be needed to draw conclusions about the performance of the cleaning operations. Should you have any further queries, please do not hesitate to ask.

Yours Faithfully

Management Accountant

**(Mock Test Paper)**

## Summary

Frame Work which can be used for measurement of Performance is not for Profit sector (3E)



## EFFECTIVENESS

↓  
(Are the Organization achieve their objective)

Nature of Organization	Objective (C.S.F.) Goals	KPI (How can we measure)
<b>Normally</b>	<b>Customer Satisfaction</b>	<b>On time delivery, Quality</b>
For cleaning To beach- Contractor appointed	Improve cleanliness of beach/particular place. Litter/Garbage should be explained not necessary to clean every paper, but main can be done like soft drink, aluminum can, Glass bottle, animal dropping, food refusal, not sea weeds.	How-From Feedback/complaint, message from visitor's surprise visit by inspector.

## EFFICIENCY (Productivity)

(Max Output can be achieved with Minimum

Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)
<b>Normally: - Consumption of Time/material per unit of Production</b>		
Cleaning Authority	➤ Cost per operation per tractor/Vehicle/Per Km.	➤ Cost of Running the tractor = XX (a) ➤ No. of tractors operated OR Tractor Km= XX (b) ➤ $a/b$ = Cost per operation per Tractor or per KM. ➤ (Low is better)

**ECONOMY (Cheap, Qualitative, better)**  
**Has the desired output (and quality of service) been achieved at the lowest cost.**



Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)	Data
Contractors for Cleaning	<ul style="list-style-type: none"> <li>➤ Cleaning Expenses</li> <li>➤ Competitive tending Process: - Followed Review</li> <li>➤ Quality of service with lowest cost.</li> </ul>		<ul style="list-style-type: none"> <li>➤ Payment made to contractor. Expenditure incurred on empty waste from bin other exp: Labour, Material, Disposal Van, compare with budget/similar cleaning activity carried by neighbor town</li> <li>➤ Compare with Budget/ Targate</li> </ul>



**Summary**

<b>EXP:</b> (I) Payment to contactors/	<u>Actual expenses</u>
(ii)Mat, lab exp of disposal can	Should be compared with budget as well as other completion expenses
(iii) Empty waste from Bin <u>Justified</u>	
<b>Exp law:</b> Quality high	
<b>Comment:</b> - If actual exp> Budget Reasons should be identified. Analyzed Take corrective action	
<b>Challenges:</b> -	
Defining standard of cleanliness, Breakup of litter, from work of policy	
<b>Visitors:</b> -Requested: Civic liab not to spread litter,	
<b>Litter:</b> -High level of cleanliness is it,	
<b>Low:</b> -low level of cleanliness low effective	
<b>Comments:</b> -	
<b>Effectiveness:</b> - Curve hospital's performance is not quite satisfactions, in achieving its objects will have to analyzed the reasons& Improve them.	

**Efficiency:** - All through cure hospital has higher efficiency in respect of treating patients  
Waiting time (Not so good)

**Comment**

All through curve hospital achieved economy level at satisfactory by paying Low amt as salary but requiring low satisfaction with in staff 16% as compare 80%(Others)



**SUMMARY OF TRIPPLE BOTTOM LINE**

**(Summary)**

<b>ENVIRONMENT (Planet)</b> ↓	<b>SOCIAL (People)</b> ↓	<b>ECONOMICAL (Project)</b> ↓
Material, Water energy, Fuel, Land consumption	Training/education provided to employee	Whether Company Paying their tax on Regular basis.
Disposal of Waste	Human Right Practices - (No Child labour appointed)	
Whether Company use paper bag instead of plastic bag. To Preserve natural resources	Proper health/safety measures adopted	
Less documentation Policy (uploading all information on website)	Charity Programme (Donation)	
Construct solar powered warehouse	No litigation case exists against company pending during last years	
	Low Accident in factory	
	Low death rate in Hospital	
	Healthy relation with supplier (Staff/Vender)	
	Any activity helps people/Customer/Patient without charging any amount.	



## CASE STUDY No: - 1: Triple Bottom Line (TBL)

CAREGIVER LTD. is a multi-specialty hospital in a mid-sized town. A 300+ bedded facility offers treatment across all medical disciplines of Cardiac, Oncology (Medical, Surgical and Radiotherapy), Neurosciences, Urology, Nephrology, Kidney Transplant, Aesthetics and Reconstructive Surgery, and other ancillary services. Most of the community members have their livelihood linked with the hospital. Many of them are directly employed at the hospital as doctors, nursing staff, lab technicians or as other support staff. While, others are indirectly related as suppliers of medical devices or drugs to the hospital, catering or housekeeping contractors etc. for the hospital. Hence, existence of the hospital is vital to the community. Growing awareness about sustainable business prompted the management to identify areas that can help the hospital operate in a sustainable manner that would be mutually beneficial to the organization as well as the town that depends on it. Therefore, it has identified the initiatives that have been put in place to create a sustainable business. Information captured from various departments are being considered to prepare the Triple Bottom Line (TBL) report that is for the consumption both to internal and external stakeholders.

### Required

IDENTIFY, which of the following aspects need to be reported in the TBL report and under which of the three categories. Provide reasons for classifying the aspect under a specific category, if applicable.

- (i) Medical staff conduct charity camps every month. Open to all members of the community who are provided with consultation free of charge.
- (ii) Prompt and accurate tax payments based on records maintained without errors or fraud.
- (iii) Caregiver, with the help of traffic police, has implemented a "green corridor" for ambulances that carry donor organs for transplantation. Organs harvested from the donor at one hospital can reach another hospital with the recipient patient at the earliest.
- (iv) Medical waste is discarded at a landfill in a nearby dumpsite. Some of the waste are not bio-degradable.
- (v) During review of the supplier for housekeeping service, it was observed that the service provider resorted to child labor to keep cost of operations lower.
- (vi) Training and professional development programs doctors and nurses.
- (vii) Lab reports are being made available online within the hospital computer system. This would reduce printing costs and storage space needed to maintain older records.
- (viii) Caregiver has a good track record of having no medical negligence litigation cases filed against it.
- (ix) The hospital is planning to market medical check-up packages so that facilities in its out-patient department can be utilized better.

(x) The number of inpatient hospital deaths decreased 8%, from 776 in 2016 to 715 in 2017. Assume all aspects are material enough to be reported in the TBL report.

### Solution

Aspects that need to be reported in the TBL report:

S.N.	Aspect	Category on the TBL Report
(i)	Medical staff conduct charity camps every month. Open to all members of the community, who are provided with consultation free of charge.	Social bottom line, as it benefits the local community
(ii)	Prompt and accurate tax payments based on records maintained without errors or fraud.	Economic bottom line, since tax payments impact an organization's bottom line and money flow.
(iii)	Caregiver with the help of traffic police, has implemented a green corridor for ambulances that carry donor organs for transplantation. Organs harvested from the donor at one hospital can reach another hospital with the recipient patient at the earliest.	Social bottom line, since green corridor would enable the ambulance to transport harvested organs between the hospitals at the earliest this would be beneficial for patients in need of critical care.
(iv)	Medical waste is discarded at a landfill in a nearby dumpsite. Some of the waste are not bio-degradable.	Environment bottom line, as it affects to ecological surroundings of the town.
(v)	During review of the supplier for housekeeping service, it was observed that the service provider resorted to child labor to keep cost of operations lower.	Social bottom line, since employing child labor leads to exploitation of children within the community
(vi)	Training and professional development programs doctors and nurses.	Social bottom line, since it contributes towards employee development.
(vii)	Lab report are being made	Environment bottom line, since paper, cartridge

	available online within the hospital computer system. This would reduce printing costs and storage space needed to maintain older records.	and storage requirement would be lower. This preserves environmental resources.
(viii)	Caregiver has a good track record of having no medical negligence litigation cases filed against it.	Social bottom line, since this is an indicator of the Quality of services provided to patients.
(ix)	The hospital is planning to market medical check-up packages so that facilities in its outpatient department can be utilized better.	Not relevant to TBL report. This is a marketing strategy to improve profitability.
(x)	The number of inpatient hospital deaths decreases 8% from 776 in 2016 to 715 in 2017.	Social bottom line, since hospital mortality rate measures the clinical quality.

(ICMA LONDON)



## CASE STUDY No: - 2: Traditional Accounting Framework vs. TBL Framework “PSL”.

**PAPER SOLUTIONS LTD. (PSL)** is a paper mill producing excellent quality writing and printing paper. It is located in a small town where eucalyptus, acacia and casuarina trees grow in plenty, which are required in the paper production process. It sources its raw material from pulp-wood plantations that grow the above-mentioned trees. These plantations are located in degraded agrarian land surrounding the factory site, which was previously wasteland. Their owners are subsistence farmers, who have been encouraged to grow these trees to source raw material for the paper mill. The mill’s local procurement policy has thus provided a source of livelihood for this community. Moreover, almost 40% of the staff working at the mill are from the local community. Most of the mill’s labour force lives in residential areas near the factory site. Catering to the mill employees’ livelihood needs like food, clothing, education etc. has given the town alternate sources of income and thus has benefited the town. The plant managers at the mill have been working on various projects in order to build a sustainable business. This includes, reducing waste during the manufacturing process, imparting knowledge to local farmers at the pulp-wood plantations to improve the quality of wood through breeding and seed improvement techniques.

Operations at the mill have yielded substantial profits over the last 15 years since inception. You are the chief accounting officer of PSL taking care of all the reporting (internal and external) needs of the company. Recently, you read about the Triple Bottom Line (TBL) reporting that

many other companies are following. You feel the need to introduce TBL reporting because: The vital role played by the mill towards the development of the town. This can be highlighted in the TBL report. This will enhance the company's goodwill. At the same time, you feel the need for transparency of operations and balancing the need of various stakeholders involved. All this can be addressed by publishing the TBL report periodically.

The mill's operations are driven by the resources available in the environment. What the mill takes should be returned in equal if not in a higher measure. TBL reporting can help identify opportunities of giving back to the environment.

You have an appointment with the Chief Executive Officer to discuss this reporting framework. During a preliminary discussion, the CEO was sceptical of the need for additional reporting. "We are here to do business; profit should be the sole parameter for measuring our success. Shareholders are our only stakeholders. Annual reports would provide sufficient information to others who are interested in our operations."

### Required

To convince the CEO, you need bring out the differences traditional accounting framework and the triple bottom line framework. Draft an e-mail on this subject that you need to send to the CEO for discussion at the meeting.

### **Solution: -**

To: CEO

**From: Chief Accounting Officer Date: 22/06/20XX**

**Subject: Traditional Accounting Framework vs. Triple Bottom Line Framework**

Please find below comprehensive study on both frameworks in context of the PSL.

Best Regards,

**Chief Accounting Officer**

-----Attachment-----

Difference between traditional accounting framework and triple bottom line framework.

- (i) Traditional accounting framework has a "single bottom line" that focuses on the profit that our company has made during the financial year. This is calculated by reducing costs, including the cost of capital, from revenues earned during the period, to arrive at the net profit that is available to the shareholders. This reporting framework has its focus on meeting the informational needs of mainly one category of stakeholder within the company, namely its shareholders. It satisfies the information needs of those interested in the financial aspects of business. It does not provide much insight on the social, environmental and economic implications of its operations.

Albeit, some information about its operations is available in various parts of its annual report, like the management discussion and analysis section or the chairman's letter to shareholders. However, this is generally not sufficient to satisfy the information needs of other stakeholders, some of whom can be our company's employees, customers,

suppliers, communities living near our factory site or even the government. Transactions that do not directly impact our company are ignored. Recognition of an expense partly depends on utilization of assets. For example, costs incurred to operate machines used in the pulping process would include labor expense, repairs, depreciation, utility etc. These get captured as part of cost of goods manufactured in our financial reports. Therefore, assets and their related expense, that are owned and within the control of the company will be reported in the financial reports.

However, certain assets are neither owned nor controlled by the organization, yet it utilizes these resources in its operations. For example, the waste water from our company is discharged in the river nearby. The waste water contains solids, chemicals and metal compounds that were used during production. This pollutes the river water, which is the primary source of water for our town. This pose both an environmental and health risk to the citizens. Although we have taken sustainability initiatives to reduce this waste, we do not pay to clean up the river water. It is the government that undertakes the onerous task of cleaning up the river water and also bears the clean-up cost. This aspect of our company's operations and the associated cost will not get captured in our financial reports. Hence, the true cost of operations of our company is greater than the costs reported in the financial reports. Moreover, the market price that we charge our customer for our paper product does not factor this cost. Consequently, both our company and our customers who use our product end up underpricing the cost to the environment and society.

It can be concluded that under traditional financial reporting, sustainability and our company's performance are mutually exclusive. At the same time, information about sustainability is extremely important to other stakeholders like the community living next to the factory site since it affects their lifestyle, the local government that may be incurring substantial expense to nurture back the environment or environmentalists that seek to protect the habitat of other species. It might be critical for our company. Healthy environment and society are key drivers to sustain our operations. "Can we do business in a world fraught with sickness due to pollution?"

On the other hand, triple bottom line reporting framework focuses on a broader view of the company addressing the interests of various other stakeholders. These stakeholders could our company's employees, creditors, customers, communities near the factory site, government etc. The objective is to force ourselves to identify areas within our operations to create sustainable initiatives that would, in the long run, be beneficial to its current and future stakeholders as well as to our company itself. It focuses on the impact of the decisions and operations of our company on the society, environment, and economy. Known as 3Ps, people, planet and profit, hence the name "triple bottom line". Triple

bottom line goes beyond the financial aspects of an organization's performance. This helps stakeholders make more informed assessments of the opportunities and risks that the company faces.

**(ii)** Traditional accounting framework uses the reporting currency as the unit of measurement. It follows the accounting and reporting principles generally accepted in the country it operates.

Materiality under this framework, is measured in monetary terms, that could impact the decisions of a rational investor. On the other hand, there is no uniform standard or measure for the TBL framework. Measurement of an aspect, therefore its materiality, could either be financial or non-financial. Organizations could follow the metrics suggested in the Global Reporting Initiative (GRI) framework. In India, efforts are underway to align the GRI with the Business Responsibility Report (BRR) mandated by SEBI for some of the public companies. The TBL report focuses on both the positive and negative impact of the organization's performance on the society, environment and economy. TBL reporting may be (i) core reporting, report selective metrics or (ii) comprehensive reporting, a detailed report based on the GRI standards.

In summary, while financial reports provide information about the profitability of our company, TBL enhances the information available to various stakeholders who may hold different perspectives of the company's business operations. TBL will work well to supplement information in the financial statements.

Overall business strategy should be linked to the TBL reporting to work towards a sustainable future. Our company has already been working sustainability initiatives. Waste generation is being tackled by our plant managers. Metrics for this report has to come from various departments. Awareness about sustainability and its impact may open up opportunities that are currently being overlooked. Our company has been a lifeline for this town for the past 15 years. Why not use the TBL to highlight these positive aspects and garner goodwill for our company? TBL reporting need not remain another administrative task requiring just data gathering. It might vitalize our company to achieve greater heights of success.

**(ICMA LONDON)**



## CASE STUDY: PERFORMANCE PRISM

**Galaxy Limited** is in the business of logistics and distribution. In 2002, Galaxy limited had implemented Balance Scorecard as a performance measurement & management system. The balanced scorecard measures performance across Financial, Customer, Business and Innovation perspective. The implementation of Balanced Scorecard had the following impact —

- The company's financial performance improved substantially.
- The complaints from customers regarding poor service reduced.
- The company has pioneered in innovation in the field of door-to-door delivery of goods.

All these led to improvement in profitability of the company. The share prices are trading at life time highs. Since the ultimate objective of a commercial organisation is to maximise shareholder's wealth, the CEO of the company is extremely pleased with the affairs at the company.

Of late, the company has witnessed high employee turnover ratio. Though the company has a formal exit interview process for the resigning employees, the inputs received from this interview is rarely considered in improving the HR practices. One of the common feedbacks from employees who left the company was that there is too much pressure to perform and improve customer service without adequate support of systems and processes.

Also, the truck drivers who move consignment from one city to another have been on strike thrice in the last one year demanding better pay and working conditions. These drivers are generally hired on contractual basis. They are not entitled to any retirement benefits. The drivers have been insisting that they be taken as permanent employee and are given benefits applicable to employees of the company.

The above two issues were discussed in one of the board meetings. The directors wondered if they had the right performance measurement mechanism to address the issues. The company is doing great financially but must also ensure that the employees and other stakeholders are taken care of apart from shareholders. The board is also concerned that they have too much of data and reports to look at on performance management as the current measurement is done on a monthly basis. However, the alignment of such reports to the overall strategy of the company is missing.

### Required

**RECOMMEND** an alternative performance measurement mechanism which considers all stakeholders instead of just shareholders and employees

### **Solution**

#### **Issue**

Galaxy limited use Balance Scorecard to measure performance. Balance scorecard focuses on the financial, customer, business and innovation perspectives. The company has been doing great on financial parameters and customer satisfaction parameters. However, of late the company has been facing issues related to high employee turnover and dissatisfaction of the truck drivers.

The board of directors is also concerned about the volume of performance measurement data and

alignment of performance measurement with the strategy of the company. An alternate performance measurement mechanism is Performance Prism.

### **Performance Prism**

Performance Prism is considered to be a second-generation performance management framework conceptualized by Andy Neely and Chris Adams. The following are the factors which make Performance prism should replace the models like Balanced Scorecard –

- Organisations cannot afford to focus on just two stakeholder group - Investors and Customers. Other stakeholders group like employees, suppliers, government etc. should not be forgotten. This is important for sustainable growth of companies both profit oriented and non-profit oriented.
- Most of the performance measurement models do not focus on changes that could be made to the strategies and processes. The underlying assumption is that if right things are measured, the rest will fall into place automatically.
- Stakeholders expect some things from the organisation. The organisation also must expect contribution from the stakeholders. There is a 'Quid Pro Quo' relationship between the stakeholders and organisation.

Another problem highlighted by Andy Neely and Chris Adams was that management are measuring too many things. They believe that in doing so they are controlling the organisations well. The problem with increased measurement is that the management starts micro-managing things and lose sight of the strategic direction. This negatively impacts the organisation in the longer run.

The performance Prism aims to measure performance of an organisation from five different facets listed below:

- **Stakeholder Satisfaction**
- **Stakeholder's Contribution**
- **Strategies**
- **Processes**
- **Capabilities**

### **Stakeholder Satisfaction**

The first facet of prism focuses on stakeholder's satisfaction. Though balanced scorecard also focuses on stakeholder's satisfaction, it is primarily concerned with the shareholders and customers and ignores other stakeholders. This is precisely the issue at Galaxy limited where the shareholders and customers are happy with the company, other stakeholders are not.

The company must identify all stakeholders and determine relative importance of each of the stakeholders. The company can use Mendelow's matrix to identify key shareholders in terms of power and interest of stakeholders. A stakeholder group which has high power and high interest (say a trade union) must be kept satisfied. The key stakeholders for a company are:

- **Investors** - They want return on investment.

- **Customers** - They want good quality products at cheap prices.
- **Suppliers** - They want better price for products.
- **Government** - They want revenues and development.
- **Society at large** - They want employment opportunities.

Each of the stakeholders group exercise different level of power/influence on the company. The interest of each stakeholder group in the company also differs. Based on the power and interest of the stakeholders, the company must appropriately perform activities for stakeholder's satisfaction.

After identification of the stakeholders, the company must identify the requirements of each of the stakeholders group. What must the company do to ensure stakeholder satisfaction?

Galaxy limited must ensure satisfaction of the two stakeholders highlighted above. The company must take steps to improve employee satisfaction and reduce the employee turnover. The company must also address the issues related to truck drivers and involve them in a dialogue. The impact of not keeping these stakeholders group satisfied is that the company might suffer financially in the longer run.

**Performance measure** - Employee Turnover Ratio, Average employment duration of employees, Number of strikes by truck drivers etc.

### **Stakeholders Contribution**

In the second facet of Performance Prism, the organisations identify the contribution required from the stakeholders. The organisations must then define ways to measure the contribution of stakeholders. This aspect is different from traditional measures where the organisations were just concerned with what they could contribute to the stakeholders.

The company would take steps to provide better service to its customers. In return the customers must contribute in terms of profits and revenues to the company. There is a 'Quid Pro Quo' relationship as described earlier.

In case of Galaxy limited, the company could improve the employee satisfaction with better pay, training and growth opportunities. In turn, the employees must perform better to contribute to the company as a whole. Similarly, the drivers must be given better working conditions and in turn, they should contribute towards improving efficiency and on-time deliveries.

**Performance Measure** - Efficiency of Employees, Productivity, On Time deliveries by Truck drivers.

### **Strategies**

In the strategies facet of the Prism, the organisation should identify those strategies which the organisation would adopt to ensure that –

- The wants and needs of the stakeholders are satisfied
- The organisation own requirements are satisfied by the stakeholders.

After the company identifies strategies, the performance measures must be put in place to confirm that the strategies are working. The various aspects to be considered appropriate

communication of strategies, implementation of strategies by managers and continuous evaluation of appropriateness of strategies.

Galaxy limited might come out with a strategy of to retain employees by means of better pay and growth opportunities within the company. This strategy can be called successful if the higher pay ensures that employee's turnover is reduced. As a strategy, the company can start to hire drivers on the payrolls of the company.

**Performance Measure** - Number of employees leaving the organisation after getting pay hike, Efficiency of deliveries after Truck drivers are put on employment of company.

### **Processes**

After identifying the strategies, organisations need to find out if they have the correct business processes to support the strategy. The various business processes can have sub-processes. Each process will have a process owner who is responsible for functioning of the process.

The organisations must develop measures to evaluate the how well the processes are working. The management must be careful to evaluate most important processes instead of evaluating all the processes. Porter's Value Chain analysis can be used to identify and evaluate various processes in the organisation.

Galaxy limited could devise a recruitment process which results in transparency in hiring and pay of employees. The process could be owned by the Human Resources Manager. The working condition of drivers can be improved by providing structured training and working conditions.

### **Capabilities**

Capabilities refer to the resources, practices, technology and infrastructure required for a particular process to work. The company must have right capabilities in order to support the processes. The company must identify performance measures to set how well the capabilities are being performed.

While Galaxy limited might choose to increase the salaries of employees, an important question to answer is whether the company has financial capability to do so.

### **Conclusion**

The facets of Performance Prism are interlinked and must support each other. The company must first identify the stakeholder wants and what the company wants from those stakeholders. The required strategies for these are identified and the processes to achieve the strategy followed by identifying the capabilities to perform these processes.



## CHAPTER-1

# Introduction to Strategic Cost Management

### Basic Concept for Case study: - Value Chain Analysis

<b>Primary Activity</b>			
	<b>Definition</b>	<b>Trader (Business)</b>	<b>Suggestion to improve</b>
<b>Inbound logistic</b>	These are activities concerned with receiving, storing, and distributing the inputs (raw materials) to the production process. The relationship with suppliers is a key component in this process.	All activities that it undertakes to deliver the product to its retail store from vender. Own Delivery system.	Shift to one supplier, if we have multiple supplier Shift to JIT, save storage cost, Improve quality Down grade items reduce.
<b>Operations:</b>	These activities involve transforming inputs into final product. Activities such as machining, packaging, testing and equipment maintenance form part of Operations.	Running the stores, maintaining the stores, Drafting layout of various store. Planning inventory level of various product. Deciding layout of various store: - Best layout.	Preventive maintenance, effective utilization of space in stores.
<b>Outbound Logistics:</b>	These activities involve collecting, storing and distributing the products from the factory line to end consumers. This may include finished goods	Delivery of Goods from store (Retail) to customer by Van, outsource OR customer directly pickup goods from	Scheduled transportation, shortest route, Transport = GPRS system (tracking system) Requirement

	warehousing, delivery vehicle operation, order processing and scheduling.	stores. (No transport) Warehousing: - Invoicing time.	(Warehouse to Retail) send according to requirements. EDI: - Streamline inventory management
<b>Marketing and Sales:</b>	Marketing and Sales provide the means by which the customers are made aware of the product. The activities include advertising, promotion, distribution channel selection, sales force management and pricing policy.	Market channel, <b>Price mgt:</b> - mouth publicity, <b>Market Mgt:</b> - build customer, loyalty by high quality: low price, market expenses.	On line sale /Reduce operating expenses of store On time delivery, Price low. Develop: Website Social media YouTube, avoid agent.
<b>Service:</b>	This includes activities related to after sales service like Installation, repair and parts replacement.	Free Replacement, repair, managing return of product by customer. Handling Customer complaint	Follow Zero defect policy

<b>Secondary Activity</b>			
	<b>Definition</b>	<b>Service</b>	<b>Suggestion to improve</b>
<b>Procurement</b>	involves purchasing of raw material, supplies and other consumables required as inputs for the primary activities.	Vender selection, Identifying, sources of these product. Placing an order	Try to achieve bulk, discount, Advance payment
<b>Technological</b>	Development includes technical knowledge, equipment, hardware, software and any other	Process automation. ERP: -ensure JIT work effectively, Real time inventory level.	Training session, Bonus, Safety measures, High

	knowledge which is used in the transformation of inputs to outputs.	Hardware/Software	motivated month of employee.
<b>Human Resource Management</b>	Management includes activities around selection, recruitment, placement, training, appraisal, rewards and promotion; management development; and labour/ employee relations.	Appointment of Resources: Labour, low turnover, motivation, training.	Improved system advances.
<b>Infrastructure</b>	Firm Infrastructure consists of activities such as planning, finance, accounting, legal, government affairs and quality management.	Not only physical Account, legal, Finance, planning	Commitment TOP vision.



# Value Chain Analysis (Traders)

## CASE STUDY No.- 1

**S-Mart** was founded in 1990 as a departmental store catering to the entire household requirements (from grocery to clothing) of middle-income groups. The company since has grown leaps and bounds and inaugurated its 100th store in 2017. S-Mart is known for high quality products which are available at discount to the market price at its store. The company claims to give at least 5% discount on listed price across product segments. The sales of company have grown 30% on Y-o-Y basis. The company has highest net profit margin and highest return on equity in the industry.

S-Mart has tie-ups with more than 500 vendors across India who provide high quality products on demand. S-Mart pays all its suppliers in advance and hence enjoys preferential pricing as compared to its competitors. The company procures products using the Just-In-Time (JIT) philosophy which helps it to keep low level of inventories and thereby freeing up significant amount of working capital. The products are directly delivered to the stores by company owned trucks and mini-vans and hence, there is no requirement of warehouses to store products.

The company sells products which are required by households on a day-to-day basis and is not keen to sell premium products which have higher margin but lower demand. This ensures that inventory is moved out of the stores faster and increases the inventory turnover ratio. The company owns all the stores which it operates under its brand name.

There is no third-party franchisee appointed to operate the stores. Since the products are directly procured from, he manufactures and sold to customers, there are no intermediaries in between.

S-Mart invests in superior quality products and high level of customer services than aggressive marketing. The company believes that it can attract more customers by offering quality products at reasonable prices rather than spend huge amount on marketing. However, need based marketing activities are carried out by the company. S-Mart aims to build customer loyalty through high level of customer service at its store.

S-Mart is one of the few companies which has witnessed a low employee turnover in the industry in which it operates. The motivation level of employees are very high which results in excellent performance across all levels. Company rewards its employees generously through employee stock options plan.

The company conducts training sessions for its employees periodically to equip them with latest techniques in areas of procurement, sales, marketing and customer service. The result of these efforts is clearly visible in the company's growth.

The company has a solid Information Technology infrastructure for all its activities. The company has leveraged technology across all departments - be it procurement, logistics or sales. It has

implemented SAP-R3 which is one of the leading Enterprise Resource Planning system globally. Various reports relating to inventory levels, sales, liquidity position etc. are available on a real-time basis to the senior management.

## Requirement

Map the various activities performed at S-mart to the Porter's Value Chain model

**(Study Material)**

## Solution:

### Introduction

Value-chain analysis is a process by which a firm identifies & analyses various activity that add value to the final product. The idea is to identify those activities which do not add value to the final product/service and eliminate such non-value adding activities. The analysis of value chain helps a firm obtain cost leadership or improve product differentiation. Resources must be deployed in those activities that are capable of producing products valued by customers.

The idea of a value chain was first suggested by Michael Porter (1985) to depict how customer value accumulates along a chain of activities that lead to an end product or service.

Porter describes the value chain as “internal processes or activities a company performs to design, produce, market, deliver and support its product.” He further stated that “a firm's value chain and the way it performs individual activities are a reflection of its history, its strategy, its approach of implementing its strategy, and the underlying economics of the activities themselves.”

The concepts, tools and techniques of value chain analysis apply to all those organizations which produce and sell a product or provide a service.

The various activities undertaken by a firm can be broadly classified into Primary activities and Secondary activities. Primary activities are those which are directly involved in transforming of inputs (Raw Material) into outputs (Finished Products) or in provision of service. Secondary activities (also known as support activities) support the primary activities. Though, secondary activities are not directly involved in creation of product, it doesn't mean that they are of less importance as compared to primary activities.

### Primary Activities

Primary activities are those activities that are directly related with creating and delivering a product to the end customers. The following activities are considered as primary activities—

#### Inbound Logistics

Inbound logistics involves arranging inbound movement of materials or finished goods from suppliers to the manufacturing plants or retail stores. Since S-Mart is not involved in manufacturing, all the activities that it undertakes to deliver the products to its retail stores would form part of Inbound Logistics.

The company has its own transport fleet to ensure timely delivery of products to the retail

stores.

The company also has a JIT system in place which ensures minimum inventory level. A reason why the company uses its own fleet of trucks is to ensure that there are no failures on the supply side. In JIT systems and especially in retail business, it is very important that stock outs are avoided.

### Operations

Operations involve those activities which are concerned with conversion of input into outputs in case of manufacturing companies. In retail business, it comprises of those activities which are concerned with running of stores, planning of inventory levels of various products, deciding the layout of various stores etc. The company operates through 100 stores which are owned by itself. The company does not have franchisee or agent model for operation of its stores. The ownership of the stores ensure that the quality standards are maintained across various stores and customer get the best value. Since the stores are owned, the company does not face any risk of closing the stores due to expiry of lease arrangements. The company can also invest to build the best layout for the stores.

### Outbound Logistics

These include planning and dispatch, distribution management, transportation, warehousing, and order fulfillment. In case of a retail business, this includes activities carried out to deliver the product to the customer. S-Mart operates through its own stores and there are no outsourcing or franchisee arrangements. The company does not have any warehousing requirement as the product are directly delivered to the retail stores. The customers directly pick up the products from the stores and there is no transport requirement in this case. The company must however ensure that the customer waiting time is low at the time of invoicing and checkout from the store.

### Marketing & Sales

Marketing and sales are the means whereby consumers and customers are made aware of the product which is ultimately sold to them. The activities include selling products to the end customers covering activities like product management, price management, promotion and marketing management. S-Mart builds customer loyalty by offering high quality products at affordable pricing. The company does not spend a huge amount on marketing.

### Service

In case of manufacturing industry, service generally refers to the after sales service which are required to maintain the value of product and includes activities like installation, repair etc. In case of retail stores, service would encompass a superior experience at the stores and managing return of products by the customers.

S-Mart aims to build customer loyalty through high level of customer service at its store.

### Secondary Activities

Secondary activities are those activities which support the primary activities in their function.

The following are the broad classification of secondary activities:

### Procurement

Procurement refers to the processes of acquiring various products and include activities like identifying sources of these products, vendor selection, placing an order, purchase of products etc.

The company deals with over 500 vendors across India on advance payment terms to procure high quality products at preferential pricing. This helps the company get better discounts which it can pass it onto the customers. This ensures that the company does not carry the burden of discounts being offered to the customers.

### Technology Development

Technology spans across all the primary activities of an organization. It includes activities like process automation, an Enterprise Resource Planning (ERP) system, inventory management systems etc. The company has implemented SAP R/3 - an ERP package which helps in the management of various functions of procurement, logistics and sales. A robust system is always necessary to ensure that the JIT systems work effectively. Such systems assist in real-time monitoring of inventory levels and triggering purchase orders when inventory levels are low. The entire flow of products from an order placement till the delivery to customer can be tracked seamlessly.

### Human Resource Management

This involves areas of recruiting, managing, training, developing and rewarding people within an organisation. S- Mart has a very low employee turnover and a very high level of employee motivation. The company rewards all its employees generously and conducts periodic training and development programmes for its employees. This ensures that the employees are highly motivated which translates into a consistently high performance.

### Infrastructure

This includes not only the physical infrastructure but also all departments of management, finance, legal which are required to keep the company's store operational. All these are important for organisation's performance in primary activities.



## Summary (for Memory Purpose)

Primary Activity		
	Definition	Trader (S-Mart)
<b>Inbound logistic</b>	These are activities concerned with receiving, storing, and distributing the inputs (raw materials) to the	All activities that it undertakes to deliver the product to its retail store

	production process. The relationship with suppliers is a key component in this process.	from vender. Own Delivery system.
<b>Operations:</b>	These activities involve transforming inputs into final product. Activities such as machining, packaging, testing and equipment maintenance form part of Operations.	Running the stores, maintaining the stores, Drafting layout of various store. Planning inventory level of various product. Deciding layout of various store: - Best layout.
<b>Outbound Logistics:</b>	These activities involve collecting, storing and distributing the products from the factory line to end consumers. This may include finished goods warehousing, delivery vehicle operation, order processing and scheduling.	Delivery of Goods from store (Retail) to customer by Van, outsource OR customer directly pickup goods from stores. (No transport) Warehousing: - Invoicing time.
<b>Marketing and Sales:</b>	Marketing and Sales provide the means by which the customers are made aware of the product. The activities include advertising, promotion, distribution channel selection, sales force management and pricing policy.	Market channel, <b>Price mgt:</b> - mouth publicity, <b>Market Mgt:</b> - build customer, loyalty by high quality: low price, market expenses.
<b>Service:</b>	This includes activities related to after sales service like Installation, repair and parts replacement.	Free Replacement, repair, managing return of product by customer. Handling Customer complaint
<b>Secondary Activities</b>		
	<b>Defination</b>	<b>Service</b>
<b>Procurement</b>	involves purchasing of raw material, supplies and other consumables required as inputs for the primary activities.	Vender selection, Identifying, sources of these product. Placing an order
<b>Technological</b>	Development includes technical knowledge, equipment, hardware,	Process automation.

	software and any other knowledge which is used in the transformation of inputs to outputs.	ERP: -ensure JIT work effectively, Real time inventory level. Hardware/Software
<b>Human Resource Management</b>	Management includes activities around selection, recruitment, placement, training, appraisal, rewards and promotion; management development; and labour/ employee relations.	Appointment of Resources: Labour, low turnover, motivation, training.
<b>Infrastructure</b>	Firm Infrastructure consists of activities such as planning, finance, accounting, legal, government affairs and quality management.	Not only physical Account, legal, Finance, planning



## Value Chain Analysis

### CASE STUDY No.- 2

**X** is a leading toy manufacturing firm. Having commenced its commercial operations in the year 1990, the firm has a state-of-the-art manufacturing facility in India. It sells toys through retail outlets and the firm's website. X has been pioneering the concepts of quality and safety in toys and has been instrumental in raising the quality standards of toys in the Indian Market.

X's mission is to influence parents to spend on toys that enable every child to grow with quality toys that contributes to his/ her wholesome development.

X procures the materials from a number of different suppliers. All of the purchased material is dispatched to its warehouse located at its factory and are held there unless they are moved to production. After production is completed, finished toys are moved to X's retail outlets by its own vehicles. Each week, the vehicles follow the same time schedule regardless of the weight they are carrying. Finished toys that are sold through the X's website are dispatched to its distribution centre.

X has recently got the contract to manufacture a new toy that is 'Ty-Z', a mini cartoon based on a character from a famous international animated film. X has not been given any target price, hence is free to set the selling price of 'Ty-Z', however, must pay a royalty of 10% of the selling price to the film director. X is also planning to sell 'Ty-Z' through its retail outlets.

X has decided to follow a target costing technique for 'Ty-Z'. Marketing manager has determined the selling price to be around ₹1,750 per 'Ty-Z'. X needs a margin of 26% of the

selling price of 'Ty-Z'.

For the estimated costs per 'Ty-Z' refer Annexure.

### Required

DISCUSS three primary activities of value chain through which X can minimise gap if any.

### Annexure

Estimated Costs per 'Ty-Z'

	Rs.
Material C	150.50
Material D	122.50
Other Material	see note below
Labour (0.4 hours at ₹1,050 per hour)	420.00
'Ty-Z'- specific production overhead cost	132.30
'Ty-Z'- specific selling and distribution cost	166.60
<b>Note-</b> Each 'Ty-Z' requires 0.70 kg of 'other materials'. These 'other materials' are procured from a supplier at a cost of ₹280 per kg and around 5% of all purchased materials are found to be downgraded.	

(RTP-Nov20)

**Solution:** - In case of X, there is a **cost gap of Rs. 78.22**. Where a gap exists between the *current estimated cost levels* and the *target cost*, it is essential that this gap be closed. Cost gap can be removed by **reducing the cost over all the Value Chain** through the development of the spirit co-operation and understanding among all members of organizations associated with the product from suppliers, producers, customers, agents and service providers.

In Xs Value Chain, three primary activities are: -

#### Inbound logistics

These are activities concerned with receiving, storing and distributing the inputs (raw material) to the production process. The *relationship with supplier* is a key component in this process. Currently, X procures materials from multiple suppliers and stores these materials in its store. **Shifting to a just-in-time (JIT) system technique** in procurement of materials could possibly save substantial storage costs provided the JIT supplier must agree to take the responsibility for the good quality of materials supplied. This will also become a source of savings because downgraded items will be removed. However, X might have to pay additional payout to a supplier for JIT purchasing to work.

#### Outbound logistics

These activities involve collecting, storing and distributing the products to the customers.

At X, scheduled transportation of toys to retail outlets is outbound logistics activity. Potentially, the scheduled transportation of toys to retail outlets every week is not an efficient way. Such deliveries do not consider whether toy is required at retail outlets or not, hence X may possibly deliver toys to retail outlets those do not need toys and suffer unnecessary transportation costs.

X should plan to **implement EDI system** that will help it to improve warehousing and logistics by automatically tracking inbound shipments as well as outbound products. Adopting EDI, X can not only improve processes but also streamline inventory management across many channels. However, it will require setup time and a learning curve to implement the same.

### Marketing and sales

Marketing and sales provide the means by which the customers are made aware of the product. At X, the sales of toys via its retail outlets and website are marketing and sales activities.

X is planning to sell 'Ty-Z' via retailers. If X **sales 'Ty-Z' through its website** rather than through retail outlet, significant cost could easily be avoided. Simultaneously, X will be able to expose itself to **attract international customers** to buy 'Ty-Z' as product is based on character from a famous international animated film.

**Overall**, X may create a *cost advantage* by **reconfiguring** the Value Chain. Reconfiguration means structural changes such a new production process, new distribution channels or a different sales approach as discussed above.

### Workings

#### Statement Showing Computation of Cost GAP

	Rs.
Sales Price	1,750.00
Less: Royalty @10%	175.00
Less: Profit @26%	455.00
<b>Target Cost 'Ty-Z'</b>	<b>1,120.00</b>
Material C	150.50
Material D	122.50
Labour (0.40 hours at ₹1,050 per hour)	420.00
Other Material (0.70 kg × ₹280 per kg) / 0.95	206.32

Production Overheads Cost	132.30
Distribution and Sales Cost	166.60
<b>Estimated Cost 'Ty-Z'</b>	<b>1,198.22</b>
<b>Cost Gap</b>	<b>78.22</b>



### Summary (for Memory Purpose)

	<b>Manufacture</b>	<b>Suggestion to improve</b>
<b>Inbound logistic</b>	These are activities concerned with receiving, storing, and distributing the inputs (raw materials) to the production process. The relationship with suppliers is a key component in this process.	Shift to one supplier, if we have multiple supplier Shift to JIT, save storage cost, Improve quality Down grade items reduce.
<b>Operations:</b>	These activities involve transforming inputs into final product. Activities such as machining, packaging, testing and equipment maintenance form part of Operations.	Preventive maintenance, effective utilization of space in stores.
<b>Outbound Logistics:</b>	These activities involve collecting, storing and distributing the products from the factory line to end consumers. This may include finished goods warehousing, delivery vehicle operation, order processing and scheduling.	Scheduled transportation, shortest route, Transport = GPRS system (tracking system) Requirement (Warehouse to Retail) send according to requirements. EDI: - Streamline inventory management
<b>Marketing and Sales:</b>	Marketing and Sales provide the means by which the customers are made aware of the product. The activities include advertising, promotion, distribution channel selection, sales force management	<ul style="list-style-type: none"> <li>• On live sale /Reduce operating expenses of store</li> <li>• On time delivery, Price low.</li> </ul> Develop: Website Social media YouTube, avoid agent.

	and pricing policy.	
<b>Service:</b>	This includes activities related to after sales service like Installation, repair and parts replacement.	Free Replacement, repair, managing return of product by customer. Handling Customer complaint



# Competitive Advantage

## CASE STUDY No.- 3

BA is the second largest airline in the Country “X”. Aviation industry in the Country “X” is growing fast. In 2011, 45 million people travelled to/ from/ or within the Country “X”. By 2020 that doubled to 100 million. This number is expected to treble to 300 million by 2030. Also, by 2025, Country “X” is expected to be the third largest air transport market in the world, behind the US and China.

Government is trying to meet the significant growth potential of aviation Industry. However, it will create challenges also for the airline industry and its industry partners.

Government also wants to ensure that broader business and policy environment should not place hurdles which inhibit growth and reduce the level of benefits that aviation can deliver to the nation. The industry, its supply chain partners, and the government and policy makers have a clear mandate to work in collaboration towards the common goal of ensuring that aviation’s economic and social benefits are fulfilled.

Despite of operating in World’s fastest growing market BA struggles for passengers. Also, BA is facing following problems:

- Aviation Turbine Fuel (ATF) prices constitute about 40% of operational costs in Country “X” and are taxed higher here than anywhere else in the World. The Central government charges 14% duty on ATF. While the state government pile on their own local tax that can go as high as 29%.
- The currency depreciation is hitting Airline harder. About 25% to 30% of their costs, excluding ATF, are dollar denominated, from aircraft lease rents, maintenance costs to ground handling and parking charges abroad etc.
- With the entry of Low Budget Carriers, full-service carrier like BA that have higher overhead costs have been forced to offer discount to passengers looking for great bargain.
- Continuous improvements in tourism infrastructure, tourism policies, human resources development, airport infrastructure density are among the areas that could further enhance Country “X”’s competitiveness. Ease of doing business over the last five years has risen.

The intense competition among domestic airlines carriers, the need to capture a slice of the ever-expanding market and passenger price sensitivity makes the airlines difficult to raise ticket prices.

Together, these factors have now plunged Country “X”’s aviation industry to its most precarious phase in the last three years or so.

BA is facing huge competition as a “year of sharp U-turns” for “X”’s aviation industry from

record profit in Financial Year 2019-20 to mega losses, resulting in direct need of recapitalization. BA has been appealing to the government for a decade for a reduction in taxes on fuel, but all in vain. ATF is 35-40% more expensive in Country “X” than in the rest of the world, because of relatively high tax rates.

## Required

ADVISE the strategy that BA should follow in order to gain superior performance and competitive advantage over its competitors **(RTP-NOV20)**

**Solution:** - In consideration to Michael Porter’s theory about creating a superior performance and competitive advantage, a firm’s overall competitive advantage derives from the difference between the *value it offers to customer* and its *cost of creating that customer value*. In order to survive and prosper in industry, firm must meet two criteria– they *must supply what customers want to buy* and they *must survive competition*.

To attain superior performance and attain competitive advantage, firm must have *distinctive competencies*. Distinctive competencies can take any of the following two forms:

**Relative low-Cost advantage**– under which customers gain when a firm’s total costs undercut those of its average competitor.

**An offering or differentiation advantage**– If customer perceive a product or service as superior, they become more willing to pay a premium price relative to the price they will have to pay for competing offerings.

## Low-Cost Advantage (Cost Leadership)

BA can enjoy relative cost advantage if its total costs are lower than those of its competitors. This relative cost advantage enables a business to do one of the following:

- Charge a lower price than its competitors for its services to gain market share and still maintain current profitability; or
- Match with the price of competing services and increase its profitability.

Cost reductions in BA can be achieved through yield management with variable pricing depending on capacity utilization with careful monitoring; application of computer and communication technology in cost effective way i.e. selling seats via the internet rather than through travel agents; trimming overhead costs by using lower cost out-of-town airports, no printed tickets, seat allocations, or free meals and drinks; efficient operations i.e. fast turnaround times for aircraft to improve utilization; and no exceptions policies to reduce the cost of handling exceptions (e.g. no flexibility for passengers who arrive late). Cost economies can also be realized from large scale operations. However, it is important to note that as soon as more firms strive to become the cost leader, rivalry become so fierce that the consequences for the profitability in the industry are disastrous.

## Differentiation Advantage

It occurs when customers perceive that a business services offering is of higher quality, involves fewer risks and/or outperform services offered by competitors. In other words, customers perceive the service offered by a business to be superior. For example, differentiation may include a firm's ability to deliver services, and other factors that provide unique customer value. BA is a multinational passenger airline. It can adopt a differentiation approach by offering passengers a higher-quality experience than many of its rivals. This allows it to charge a premium for its flights compared to many other airlines.

A differentiation advantage can be achieved by offering enhanced features such as prime landing slots can be obtained at major airports around the world; using superior and advance technology; well-maintained, clean, and comfortable aircraft; training in customer care and the recruitment of high-quality staff; providing complementary services such as in-flight entertainment, high-quality food, and drink.

Customer value can also be increased by *subjective features* such as brand image, advertising based on quality of service provided. However, differentiator cannot ignore its cost position. If costs are too high the premium price are nullified.

On successfully differentiated its offering, management of BA may exploit the advantage in one of two ways viz., either increase price until it just offsets the cost of improvement in customer benefits, thus *maintaining* current market share; or price below the "full premium" level to *build* market share.

**Alternatively**, BA may focus on geographical region and short point to point flights to reduce costs. Michael Porter enlightens focus as attaining low cost or product differentiation for a *particular* buyer group, segment of product line, or geographic market rather than for the industry as a whole. The focuser can attain competitive advantage within a niche, because large firms are either not attracted to niche or have ignored the potential. The narrow focus in itself though is not adequate for a competitive advantage. The firms need to optimize the strategy on two variants: cost focus and differentiation focus. One risk of a 'focus strategy' is that broadly targeted competitors devastate the segment once it becomes economically attractive.

**In addition**, the currency depreciation is hitting Airlines harder and international overhead costs have risen, the BA should attempt to increase the number of internal domestic flights. Moreover, ATF cost can also be lowered by investment in fuel saving modern Airbuses, however, the reduction in operating costs may outweigh the capital equipment costs.

To gain competitive advantage BA may also assess Value Shop Model. Value Shop generates value by organizing resources (e.g., people, knowledge, and skills) and deploying them to solve specific problems, for example, delivering airline services to the passengers or delivering a solution to the business problem. Shops are organized around making executing decisions- identifying and assessing problems or opportunities, developing alternative solutions or approaches, choosing one, executing it and evaluating results.

In this way, the above discussed strategies may be more appropriate for helping BA in achieving superior performance and competitive advantage over its competitors.’

### Concept in Practice

Southwest Airlines (SA) targeted on a geographic region and short point-to-point flights to reduce costs. Even though it offered no-frills service (no-frills or no-frills service is one for which the non-essential features like food, entertainment, printing of boarding pass etc. have been removed to keep the price low) and was based in secondary airports, SA improved quality relative to the limited set of competing alternatives by offering direct flights rather than connecting flights requiring changing planes at large hub airports. The SA also offered better on-time performance and friendly amenities.



#### Cost Leadership

Defination	How to achieve
<b>Enjoy: -</b> Cost advantages if total cost is lower than, those of its competitor	Get discount for bulk purchase.
<b>Benefits: -</b> Can charge low price than its competitor to gain market share & Maintain profitability	Attaining economic of scale by high volume of sale Utilize full capacity
	Develop new advanced technology (ERP system)
	No printing tickets- avail on mail.
	Sale of Ticket through website: Avoid agent commission
	Avoid: - Olive from salad: - (in case of Air craft Business)
	Avoid free food (Charge nominal amount)
	Fuel saving modern vehicle (bus)
	Increase Domestic Flights

#### Product differentiation

Definition (Concept)	How can achieve
<b>Providing goods/services with high quality as compare to our competitor with same price</b>	Increase no. of flights. (Morning, afternoon, Evening as well as night)
<b>Match with customer taste/expectation i.e., Reducing</b>	Seating: Provide extra comfort leg space

<b>waiting time /on time delivery</b>	
<b>Provide unique customer value</b>	Clean aircraft/Comfortable
<b>Customer would like to pay premium price (Haldiram)</b>	Facility of guide to avoid inconvenience.
	No connecting flight (Point to Point)
	Staff educated/Patience politeness
	High quality staff (Training in customer care)
	Hot/fresh food facility.
	Luggage, No bar (No. extra charges)
	Refund policy in case of cancellation.
	<b>Multiple option</b> (Flight booking) Comfortable aircraft



## CASE STUDY No.- 4: Westwood

### **Value Chain model Vs. Value shop model**

**Westwood** Solar Solutions (WSS) has mastered the art of developing Solar Domestic Water Heater that fulfill customer's needs. WSS's designers and product developers focus on solutions to get rid of everyday hassles and transform these into a pleasant experience. WSS also has a wide service network that spans the length and breadth of India to ensure good care of customers and products, by providing a prompt and pleasant service experience. In the past, WSS had a dominant position in the Indian market. However, over the past four years, it has been found that its profits and its share in the market have come down.

WSS has business Model comprising of following steps:

Firstly, WSS's highly qualified and skilled experts visit customer's locations to identify and design the appropriate heater as per customer's requirements. WSS's experts are recognized as the best in the industry, and customers agree that they produce the most effective solutions to their complaints.

At WSS, in the laboratories, the heater design goes through intricate, complex, and dynamic process. Prototypes are developed on the basis of discussions in previous step. Thereafter, these prototypes are tested. Once a final design is decided, such design is passed to the manufacturing division for production.

Then, WSS manufactures appropriate Solar Water Heater to the desired specification and installs at the customer's location.

After the heater's installation, WSS renders annual maintenance services for which it is well-

known in the industry.

WSS's customers pay a total price for design, manufacture and initial installation of the Solar Water Heater and an annual maintenance charge after that. Total prices are quoted before design work begins.

Although customers appreciate the high quality of the solutions provided by WSS's team, however, they are complaining that the overall prices are too high. Customers have said that although other suppliers do not solve their problems as WSS does, they do charge less. Consequently, WSS has lower down its prices to compete in the market. There is a doubt that the manufacturing and installation stages of the business model are not contributing sufficiently to the firm since costs at both stages are going high.

Partners of WSS have considered that this situation should no longer continue and have recommended that a value chain analysis to be conducted as to identify the way forward for WSS.

Although majority of partners are in the agreement with the proposed value chain analysis, however senior partner 'W' has stated that value chain analysis is inappropriate idea. She says that she has heard a number of criticisms of the value chain model.

Assuming yourself as management accountant of WSS, answer the following questions:

#### Required

- (i) DISCUSS the benefits that may accrue to WSS from conducting a value chain analysis.
- (ii) DISCUSS the criticisms of Porter's value chain model in the context of WSS
- (iii) EXPLAIN other form of Value Chain Analysis that may be more suitable for WSS.

**(Study Material)**

#### **Solution:**

There are following benefits accruing to WSS through a value chain analysis:

Value chain analysis is a process by which a firm identifies and analysis various activities that add value to the final product. The idea is to identify those activities which do not add value to the final product/service thereafter eliminating such non-value adding activities. The analysis of value chain helps a firm in obtaining cost leadership or improves product differentiation. For WSS, value chain can provide with more unambiguous picture of the value of the manufacturing function as perceived by customers.

This model also helps in analyzing other firms within the same industry. As WSS observed that other firms in the industry are considered to be more cost effective in terms of manufacturing, it may plan to use the value chain model to examine the reason for the same.

The value chain will assist WSS to determine ways to get best approach towards developing higher level competitive performance. This model assists firms in finding ways to develop higher level of performance either by cost leadership or product differentiation. Right now, WSS is in a situation wherein it is being defeated on price by some of its competitors, however is

recognized as the best solutions provider to customer's problems. Through detailed value chain analysis, WSS may be able to ascertain the reason of falling down in such situation and partners may be able to take decision regarding the future vision of the firm. Through this analysis, WSS may apply other relevant management techniques as well. Post value chain analysis, WSS will be in a position to decide whether it is worthwhile to continue the technique of benchmark (processes and performance) against its rivals, to develop an information systems strategy, to carry out a business process re-engineering process or to adopt activity-based management.

Further, WSS may decide to outsource manufacturing and keep focus on design and services by following value chain analysis model. This technique may be appropriate for WSS as by outsourcing manufacturing, WSS may be able to focus on its core area for which it is well-known in the industry.

Value Chain analysis will also facilitate the development of performance metrics for WSS. By developing such metrics WSS may be able to identify which aspects of its business model are not contributing to the overall value and profits of the firm. Although currently WSS has suspicion that manufacturing and installation are the weak parts of its operation, development of transparent and appropriate metrics would enable WSS to recognize where value and profit are being added in the business model.

Number of criticisms of the value chain developed by Michael Porter have been:

This value chain analysis cannot easily be applied to firms belonging to service industries. This criticism is particularly imperative in the context of WSS which has upward profits from rendering solutions and services rather than that from

Manufacturing tangibles products. Many people appreciate that the model is more suitable to manufacturing-based industries, rather than service-based industries. Often this model is seen as complicated and perhaps could be a source of frustration for the management of a firm. Although the staff of WSS includes bright and intelligent experts, they may not see the value in-depth analyses of business which is required for a full value chain analysis.

This analysis has a linear approach and ignores the concept of value networks. This criticism is specifically relevant to WSS because its major business resort to the cooperative relationship that the experts have with their customers. If, WSS decides to outsource manufacturing and focus on design and service, this will become even more relevant where relationships are utmost important. Often value chain analysis is perceived as time consuming and expensive as a whole.

However, if the analysis is to be completed timely, there will be requirement of reliable data such as cost of components in business model. However, in the absence of good cost capturing system, this model could prove to be a costly process. After completion of this process, still there is no guarantee that the process led to have upward trend in profitability and where it does, it may take some time in realization.

(iii) WSS requires to acknowledge that the nature of its business is turning from manufacturing zone to a solutions provider or professional services firm. From this point of view, it would be

better for WSS to analyze its business using the Professional Services Value Chain/Value Shop Model. The concept of Value Shop came in to lime light holding the hand of Charles B. Stabell and Oystein D. Fjeldstad in 1998. This concept aims to serve firms from service sector. It only deals with problems, figure out the main area requiring service and finally come with the solution. This approach is designed to solve customer's problems rather than creating value by producing output from an input of raw materials.

A Value Shop mobilizes resources (say: people, knowledge or money) solve specific problems such as delivering a solution to business problem. This shop model is iterative, involving repeatedly performing a generic set of activities until a solution is reached.

Secondary activities in the Professional Service Value Chain have same support activities as those in the porter's value chain, However the primary activities are described differently to recognize the different nature of a service-oriented business. In value shop, primary activities are performed in a circle within a firm to perform generic set of activities iteratively before reaching a conclusion. Since WSS team communicate with customers to find a solution before testing of developed prototypes, so they will find the vale shop, compatible and effective model to use.



## CASE STUDY No.- 5: Wireless

### Competitive Advantage

Wireless is a manufacturer of mobile phones. The company operates in a market that is dynamic, extremely competitive and consumer centric. The market is broadly fragmented into those customers who are price conscious looking only for basic features and those who are technology savvy wanting to try out the latest offering. Wireless manufactures phones that cater to both these segments.

Mobile A has the very basic features that a customer requires from a phone. It is marketed to attract the price conscious customers. There is many other manufacturing who have similar product offering for this market, Mobile Z offers the latest technology features and an attractive design. Wireless has invested substantial amount in research and development that has resulted in Mobile Z having many unique features. It is marketed to attract customers willing to try out newer products. The research has also yielded results whereby a large section of the design of Mobile A and Z can be standardized to have a similar components and engineering. This would enable Wireless to enter into agreements with its suppliers to provide components. Just in Time based on the production schedule. With this change, the quality of Mobile A is expected to improve thereby improving its sales off take manifold.

Online shopping has given customer complete access to the prices of phones offered by different manufactures. This channel of shopping contributes to almost 70% of the sales. Huge discounts by its rivals has forced Wireless to reduce the

prices of Mobile A as well. This has stretched its profit margins. Various cost reduction measures have been initiated to maintain profitability. Mobile Z on the other hand is currently doing well

since it is targeted at a more niche segment of customers. Wireless is able to charge premium price for Mobile Z. The latest news in the industry of personal devices like mobiles, laptops etc. is the use of Artificial Intelligence and Augmented Reality to enhance user experience. The technical staff at Wireless felt that this could be the next new frontier that could really change the way we use our devices, most of which could even go redundant.

### Required

- (i) IDENTIFY the strategy that Wireless is using for Mobile A and Mobile Z.
- (ii) Discuss the risks involved in each of these strategies.

ADVISE Wireless to sustain its Current strategy for Mobile A?

**(Study Material)**

### **Solution:**

- (i) Wireless is following the “low-cost strategy” for Mobile A and “differentiation strategy” for Mobile Z. Mobile A is being offered at discounted rates to meet the prices of its competitors. This is being done in order to gain market share from its competitors. To maintain its profitability, Wireless has to find means to keep its manufacturing, distributing and other costs low.

Mobile Z is being perceived by customers as a unique product, with features different from its competitors. This is “differentiation strategy”. Differentiation can be achieved from superior product quality, innovation and customer responsiveness.

- (ii) The risks involved in a “low-cost strategy” for Mobile A is that any price reduction by Wireless will be followed by an equivalent price reduction by its competitors. This price war will ultimately eliminate players who are unprofitable. This strategy will put margins under pressure. The company has to find ways to its costs low on a sustained basis. The “low-cost advantage” will be lost once its competitors find a way to lower their costs as well. The other risk would be to that the quality of the product could be impacted negatively due to lowering of costs.

The risks in differentiation strategy are that it will work only when customers are not price sensitive. The mobile market that Wireless operates is a competitive market. As long as certain customers are will to pay extra for additional features, Mobile Z will have a competitive advantage. If these customers also become price sensitive, they fail to see the value for paying extra for the additional features, the sales of Mobile Z will start falling. The other risk in this strategy would be in the ability of competitors to replicate the features of Mobile Z.

Therefore, Wireless should protect its intellectual property rights in order to prevent its competitors from replicating the design and features of Mobile Z. It only when these risks are contained, that Wireless would be able to maintain its premium price for Mobile Z for its unique features.

An external risk factor for Wireless would also be from the developments in the fields of Artificial Intelligence and Augmented Reality. Wireless has to constantly monitor and assess

how these technological developments can impact its business. It must be flexible to adapt to changes as they take place, in order not to become redundant in business.

- (iii) “Low-cost advantage” can be maintained by copying designs rather than creating them, attaining economies of scale by high-volume sales, getting discounts on bulk purchases and gaining learning and experience curve benefits.

Learnings and experience from research for Mobile Z can be leveraged for Mobile A. Standardization of design for Mobile Z and A would improve the quality of the product since the design is based on a product that has premium range of customers. Since these features can improve the sales of Mobile A, costs would benefit from economies of scale due to larger production volumes.

Bulk purchase of components for Mobile A and Z gives Wireless the advantage of negotiating for discounts on purchases. It could also negotiate for favorable delivery terms, like just in time purchasing agreements. This would reduce the inventory holding costs for Wireless. All this contributes towards lowering the costs of production of Mobile A. This will help Wireless sustain its low-cost advantage.



## Summary (for Memory Purpose)

### Basic Concept for Case study (Competitive advantage)

#### Low-Cost Strategy: -

Definition	Risk	How to achieve
<b><u>Enjoy: -</u></b> Cost advantages if total cost is lower than, those of its competitor	Competitor might find way to lower their cost as well.	Select one supplier if we have different supplier & get discount for bulk purchase.
<b><u>Benefits: -</u></b> Can charge low price than its competitor to gain market share & Maintain profitability	Price war/ Margin under pressure.  May compromise the quality of product	Attaining economic of scale by high volume of sale  Gaining experience & learning curve benefits. Utilize full capacity
		Reduce cost by copying rather than creating design. (Standardization).
		Increasing labour productivity (efficient operation) machine made product.
		Using cheaper material
		JIT purchase system, Reduce storage cost.

Definition (Concept)	Risk
<b>Providing goods/services with high quality as compare to our competitor with same price</b>	It will work only when customers are not price sensitive.
<b>Superior innovation: - ahead of competition</b>	Ability if competitors to replicate our feature (Protect: - Patent its feature)
<b>Superior customer Responsiveness: -</b>	Technique may redundant (follow/watch continuously)
<b>Match with customer taste/expectation i.e., Reducing waiting time /on time delivery</b>	

<b>Provide unique customer value</b>	
<b>Customer would like to pay premium price.</b>	



## CASE STUDY No.- 6 Porters Model

WDG is a family-owned business. The Family owns 80% of the shares. The remaining 20% is owned by six non-family shareholders. It manufactures Cardboard Boxes for customers which are mainly manufactures of shoes, cloths, crackers etc. Now, the board is considering to join the paper Tubes market as well. Paper Tubes, also known as Cardboard Tubes, are cylinder-shaped components that are made with Cardboard.

Paper tube can be used for a wide range of functions. Paper Tubes are usually ordered in bulk by many industries that rely Paper Tubes include food processing. Shipping and the postal service, automotive manufacturing, material handling, textile, pulp and paper, packaging, and art etc. The Paper Tubes cost approximately 1% - 3% of the total cost of the customer's finished goods. The information about Paper Tubes is as follows:

- (i) The Paper Tubes are made in machines of different size. The lowest cost machine is of ₹1,89,000 including GST @ 5% and only one operator is required to run this machine. Two days training program is required to enable untrained person to run such a machine efficiently and effectively. A special paper is used in making Paper Tubes and this paper remains in short supply.
- (ii) Presently Five major manufacturing of Paper Tubes have a total market share of 75% offer product rangers which are similar in size and quality. The market leader currently has 24% share and the four remaining competitors hold on average 12.75% share. The annual market growth is 3% per annum during recent years.
- (iii) A current report "Insight on Global Activities of Foreign Based MNC's" released the news that now MNC's are planning to expand their packaging operations in overseas market by installing automated machines to produce Paper Tubes of any size.
- (iv) Another company, HEG manufacturing a small, however increasing, range of Plastic Tubes which are capable of housing small products such as foils and paper-based products. Currently these tubes are on an average 15% more costly than the equivalent sized Paper Tubes.

**Required:**

ASSESS whether WDG should join the Paper Tubes market as a performance improvement strategy? **(Study Material)**

**Solution:**

To assess the feasibility of joining Paper Tubes market, Michel Porter's Five forces models can be used. It analyses the competitive environment of an industry. It is an important tool for understanding the competitive structure of a particular industry. This complete analysis includes five forces: buyer's bargaining power, suppliers bargaining power, the threat of substitute products, the treat of new entrants and the intra industry competition.

While applying this model to the above case, it can be observed that the low cost of the machine along with the fact that an untrained person will only need two day's training as to be able to operate a machine will form comparatively low costs of entry to the market. Therefore, WDG may reasonably consider high threat of new entrants.

Customer's (buyer) Power could be high since customers buy Paper Tubes in bulk along with the fact that there is insignificant difference between the products of alternative suppliers. Paper Tubes cost approximately 1%-3% of the total cost of the customer's finished goods also indicates that customer's power is high.

The fact that the special paper from which the tubes are made remaining in short supply, signals high threat from suppliers. Hence suppliers may raise their prices that would result in reduction of profit.

Five major players with 75% market share, offer product ranges which are similar in size and quality, besides the market is a slow growing i.e., annual growth of 3% indicate high rivalry among competitors.

A little real threat from a substitute product exist since HEG manufactures a narrow range of Plastic Tubes. This threat might go up if the product range of HEG is expanded or the price of Plastic Tubes goes down sharply.

Major threat from potential new entrants can be seen, as foreign based MNC's are planning to joining this market and it seems that these giant corporations might be able to gain economics of scale from automated machines and large production lines with manufacturing flexibility.

WDG might enter this market due to low capital investment but this would also lead to other potential entrants. The easy entry, threat of substitute, the existence of established competitors in the market, the possible entry of a MNC's and competitors struggling due to slow growth market are putting the potential of WDG into the question to achieve any sort of competitive advantage.

Joining this market might be a good move, if WDG would be able manufacture Paper Tubes at lowest cost within the industry. To assess feasibility, WDG must

take into consideration all possible synergies between its existing operations of Card Boxes and the proposed operations of Paper Tubes.

From the available information joining the market for paper Tubes does not seem to be attractive. Thus, WDG should go for other alternative performance improvement strategy.



## Summary (for Memory Purpose)

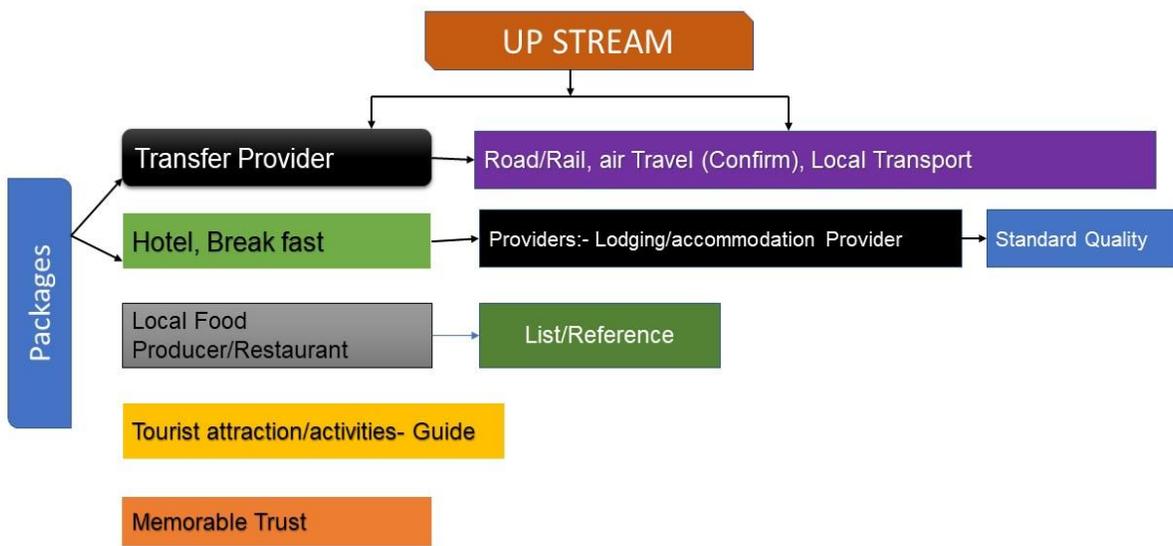
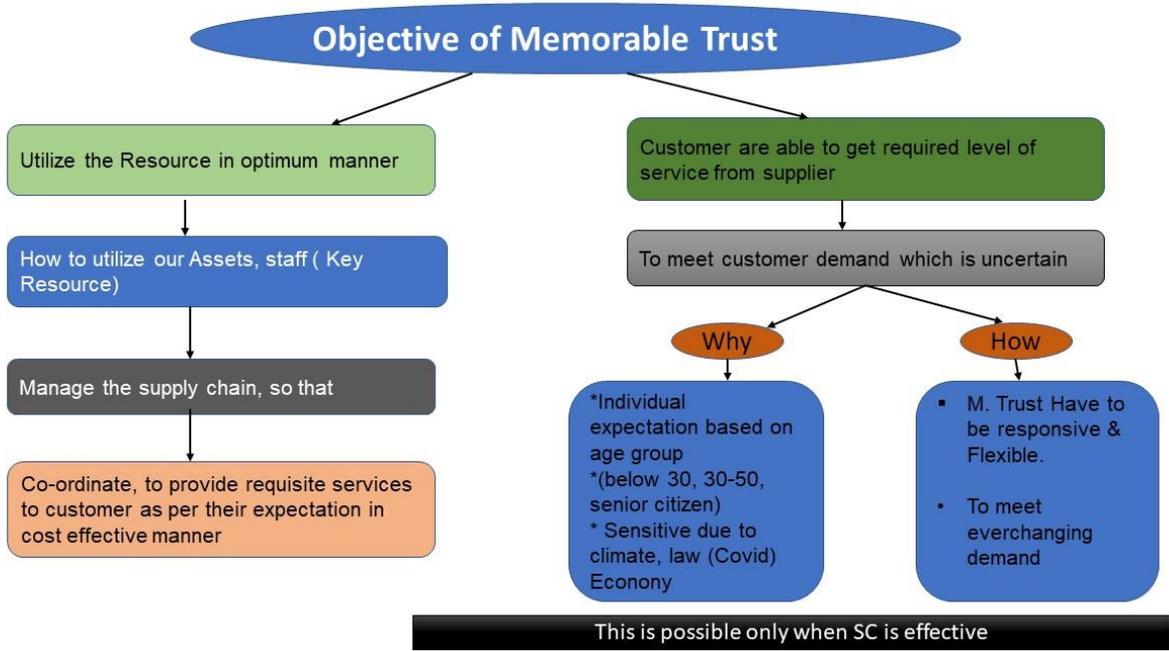
Factor	Reason	High /Low	Profit
1: - Bargaining Power of Buyer	Bulk purchase Cost very Low	High	Low
2: - Bargaining of Power of Supplier	Short supply (Special Paper)	High	Low
3: - High Rivalry among competitor (5 people)	They dominate the Market	High competition market expansion: low	Low
4: - Threat from substitute Product	Narrow range of plastic tube	Low	Chance to high profit
5: - Threat of new entrant	Foreign based MNC-planning to Join the Market (Economy of scale/ automated machine), Low capital employed, Low cost of machine, Untrained employee required (only two days training are sufficient).	High	Low

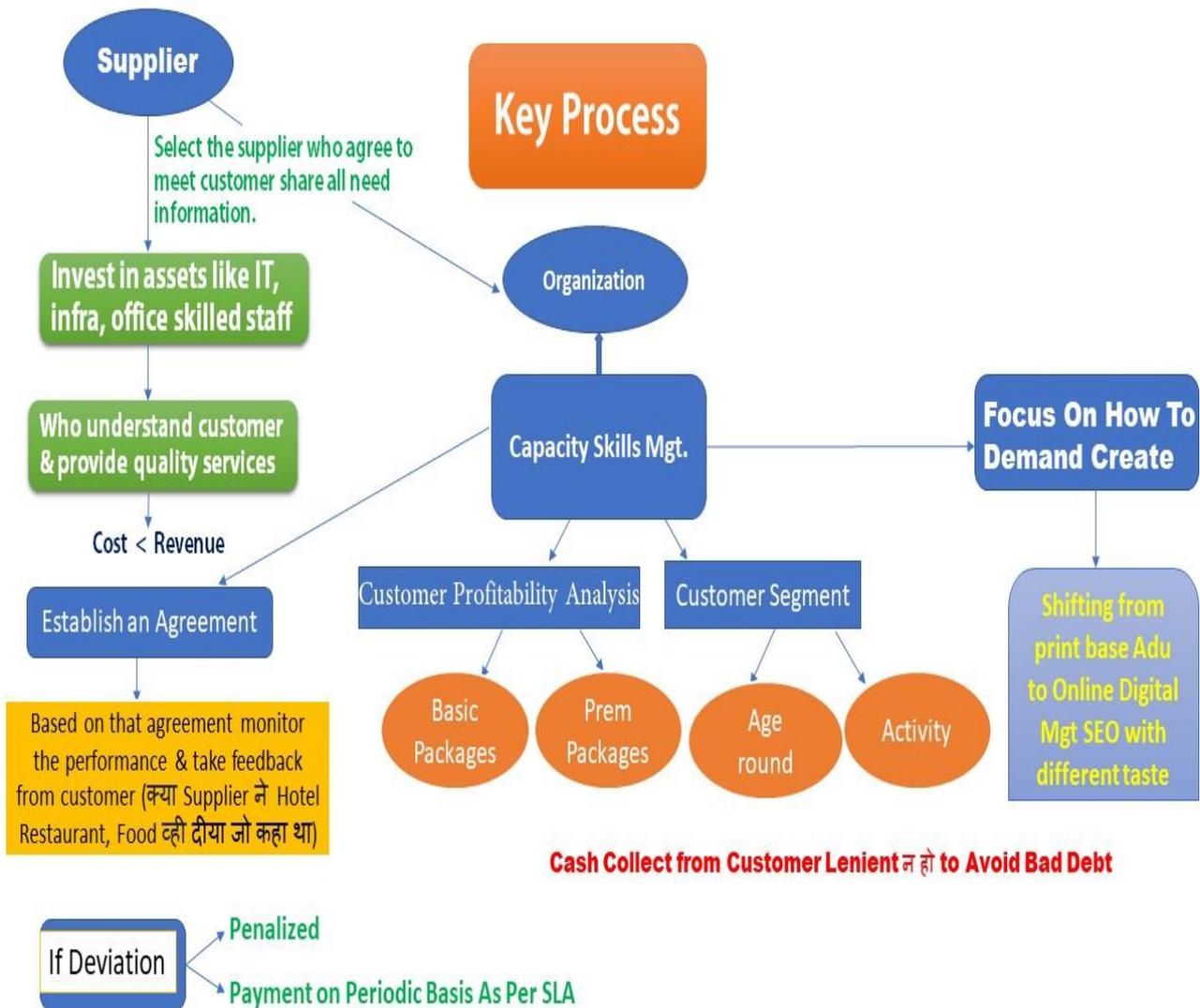
**CruX:** - No abnormal profit: - Only change of synergy benefit.



# CHAPTER 2

## Modern Business Environment





## Case Study: (Supply Chain Management)

**Question 41:** Sun Electronics manufactures and sells various electronic goods like mobile phones, laptops, televisions, refrigerator etc. the company sells these goods through the 30 stores situated in different parts of the country. The store managers place a request to the centralized team situated in Mumbai on a monthly basis. One store can send only one requisition per month.

The requirements of the stores are forwarded to the production planning team which is responsible for scheduling the manufacturing of these products. Once the goods are manufactured, the goods are sent to a central warehouse in Mumbai and are dispatched to different stores according to the store requirements. The time taken from placing a request from store to the delivery of product to the store takes about 30-40 days on an average. In the process the company procures parts from more than 100 vendors. The company has faced quality related issues with many vendors leading to delay in production.

The average holding period of inventory in Sun Electronics is very high at 45 days as against an industry average of 15 days. Since the order to delivery time at store is very high, the company has traditionally allowed high inventory holding to reduce the stock outs at store level. The company is under severe pressure to improve its working capital cycle.

A high amount of inventory held at each store also means that the products become obsolete quickly. In case of products like mobile phones, new and upgraded versions are available in the market as early as six months from the date of initial launch of a particular model. A significant portion of inventory of mobile phones becomes obsolete every year. The company generally resorts to a discounted sale to liquidate such obsolete models.

The management at Sun Electronics has identified e-commerce as an opportunity for faster growth, both in terms of revenues and profitability. The company is considering launch of its own e-commerce website to sell all products which are currently being sold in physical stores. Depending upon the success of online sales, the company might choose to optimize and close certain physical stores in the next couple of years.

The management of the company is cognizant of the fact that existing inventory procurement and management system will not fit in the new e-commerce business. E-Commerce works on an inventory light model and quick as well as on time delivery of products of the customers. The fact that customers could be from a location other than those where Sun Electronics has physical presence makes the matter complex.

#### Required

The company is considering implementation of a supply chain management system. Will a supply chain management system be of use to Sun Electronics in light of the e-commerce venture? You are required to EXPLAIN the concept of Supply Chain Management and EVALUATE the applicability of in the current case.

**(Study Material)**

#### Issue

Sun electronics manufactures and sells various electronic products through its physical stores. The existing manufacturing system does not take into consider the demand of product in the market. Store managers are allowed to submit only one order per month. A high level of inventory can be seen at Sun Electronics as compared to the industry average. The store managers tend to keep high level of inventories as a safe guard against stock-outs. Whereas, keeping inventory to meet customer requirement is good, high level of inventories due to inefficient processes is not advisable.

The company also has a longer working cycle because of a long order to deliver time and excess holding of inventory. A significant amount of working capital is blocked due to this practice. Technology changes rapidly and the company is expected to roll out latest products in the market. A product like mobile gets outdated very soon and the company has to resort to discounted sales. This results in financial losses to the company.

The company has identified an opportunity in e-commerce. E-commerce businesses require leaner models and faster response time. The production must be based on the demand from the customer and not on an ad-hoc basis. In the following paragraphs, the importance of supply chain management (SCM) and its applicability in the current case is discussed.

### Supply chain management (SCM)

Supply chain management can be defined as the management of flow of products, services and information, which begins from the origin of products and ends at the product's consumption at consumer's end. SCM also involves movement and storage of raw material, work in progress and finished goods. In other words, supply chain management involves management of all activities associated with moving goods from the raw materials stage to the end user. An important objective of SCM is to correlate the production and distribution of goods and services with demand of the product.

The following are the various activities which an organization carries out to meet the customer requirements (primary activities under value chain model) –

- Inbound logistics covering procurement and related activities.
- Operations covering conversion of raw materials into finished products
- Outbound logistics covering movement of products from plants to end users
- Marketing and sales
- Service

Supply chain management looks each of the above activities as integrated and interrelated to each other. None of the activities can be looked in silos. In the case of Sun Electronics, there is a restriction on number of orders which a store manager can place. This would lead to excess ordering because of the fear of stock-outs.

The customer demand is completely ignored and hence the production is not in sync with the market demand. This could lead to excess production, higher inventory holding and longer working capital cycles.

The facts presented in the case indicate the following problems at Sun Electronics:

- Production planning is not based on customer demand & is done on an ad-hoc basis.
- Inventory holding period is very high (45 days against an industry average of 15 days).
- The working capital cycle is longer.
- The time take to fulfil an order from the store is very high.
- The production is dispatched to a central warehouse for further deliveries to the stores. This could be an inefficient process.
- Liquidation of products at discount for products with low shelf life.

### The SCM process is explained below:

- **Plan** – the first step in SCM process is to develop a plan to address the requirements of the customer. Sun Electronics must shift its focus from ad hoc and predetermined production planning to understanding the requirements of customers. Production must be planned based on the demand of products. The focus must be on producing what the customer wants.
- **Develop (procure)** – in this step, the materials required for production is sourced from various suppliers. A good relationship with supplier is required to ensure that the parts/materials are received as and when required by the production team. It is also important that the vendors supply quality material which is not the case in Sun Electronics. The company must select suppliers which are dependable and can deliver quality products in the stipulated time. The company must focus in reducing the lead time required for sourcing materials which will reduce the inventory holding period.
- **Make** – the third step is making or manufacturing the products required by the customer. This is quite different from the existing practice in Sun Electronics where store managers are allowed to place only one order. This would mean that the company is not considering the ever-changing demands and tastes of the customers.
- **Deliver** – the fourth stage is to deliver the products manufactured for the customers. This stage is concerned with logistics. The time required to deliver to the store in case of Sun Electronics is very high. The company must evaluate if the centralized warehouse is causing delay in delivery of products to the stores.

Logistics is one of the important components of the entire supply chain process. Right from procurement of material, movement of raw material in the plants and final delivery of products of customers, logistics plays a critical role. An excellent system must be in place to ensure that the movement of materials and final product are uninterrupted.

Warehousing also plays an important role in today's business environment. The company has a centralized warehouse to meet the needs of all its stores. This would not be the most efficient way. The company must evaluate creation of additional storage facility which would ensure timely delivery goods to the stores. Newer products can reach the market faster.

### Benefits of SCM to Sun Electronics

SCM looks at the entire value chain process as an integrated process. There is a seamless flow of information and products between suppliers and customers. The customer's requirements would be captured to plan the production. The supplier would be intimated to supply the materials according the production plan. An effective logistics system ensures that movement of materials is seamless. Sun Electronics can also consider implementing an integrated ERP which would also interact with vendors on real time basis.

The following benefits of SCM can be envisaged for Sun Electronics-

- Better Customer Service as customer is supplied with what he/she wants in the minimum time.
- Better delivery mechanism for goods.
- Improves productivity across various functions and departments.
- Minimizes cost (both direct and indirect).
- Reduces the inventory holding time and improves the working capital cycle.
- Enhances inventory management and assists in implementation of JIT systems.
- Assists companies in minimizing wastes and reduce costs.
- Improves supplier relationship.

## E-Commerce and SCM

The SCM is the backbone of E-commerce industry. Customers buying products online want deliveries to be faster. Another distinct feature of e-commerce is that buyers could be located in any corner of the country and not just restricted to the cities where Sun Limited has physical presence. This definitely means that the company must have an effective Supply Chain Management in place which could meet the customer's requirement.

The existing practice of one order per month from each store would not work in the e-commerce space. Orders can come at any time and from anywhere. Supply Chain Management would be required for success of e-commerce business.

## Customer Orders

The company must have an effective mechanism to capture customer orders and feed it into the production planning on a real time basis. An integrated ERP system would be required for this purpose. Any delay in intimating the production team would mean delay in production and delivery which would not be taken positively by the customers. The existing system of one order per month from a store would not fit the purpose. A real time flow of information would mean lower inventory holding.

## Procurement

The material requirements must be communicated to suppliers seamlessly. The company must identify those vendors who can deliver quality materials in the required time frame. A delay in supplies would delay the production process. A company cannot afford this in e-commerce business. Automatic exchange of information using EDI (Electronic Data Interchange) or Integrated ERP systems would ensure that the vendors receive material requirements in a timely manner.

## Production

As discussed earlier, the production must be in accordance with the customer order. This requires a shift in approach of the production team. Business environments have shifted from “Customer will buy what we produce” to “We have to produce what the customers require”. The company would ideally not produce products to store them and sell later.

## Logistics

Logistics would be the backbone of entire e-commerce set up. Right from sourcing of materials to delivery of products at the customer’s door step, logistics would play an important role. If the company has an in-house logistics facility, the logistics team must be trained with the requirement of the new business. If the company has outsourced the logistics, vendors must be briefed about the requirements of the e-commerce. The company might have to tie up with new logistic vendors to avoid any delay in deliveries.



## Summary

Issue	Resolve (Benefit)
Production Planning: adhoc basis : Not as per customer demand	Better Customer Service
Inventory holding Period: - High (45 days)	Reduce Inventory holding Period. Working cycle Increase
Working Cycle: Longer	Order Processing time reduce.
Time taken to fill order from store: High	Improve Supplier Relation
Product obsolete: - Quality not standard: Technology Change	Reduce Cost Waste

## Process of Supply Chain (Application)

<b>I: -Customer Management</b>	<b>Relationship</b>	<b>Identify the Requirement of Customer/demand</b> <b>Production match: - Customer taste</b> <ul style="list-style-type: none"> <li>- <b>Not adhoc as in Sun Electronics</b></li> <li>- <b>Manage &amp; analyze customer interaction</b></li> <li>- <b>Production must be planned based on demand of product. Focus must</b></li> </ul>
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	be on producing what the customer wants.
<b>2: -Supplier Relationship management:</b> -	<p><b>Good relationship with the supplier is required to ensure that: -</b></p> <p><b>1: - Materials are received as &amp; when required.</b></p> <p><b>2: - Quality material would receive as not in Sun Electronic Co.</b></p> <p><b>3: - Reduce lead period.</b></p> <p><b>4: - So that Inventory holding period will reduce.</b></p> <p><b>This can be done by selecting the supplier &amp; Make the Payment on time.</b></p>
	<b>Select the supplier: - Make the Payment on time-</b>
	<b>Less inventory holding Period</b>
<b>3: - Customer Service Management</b>	<b>Order will be delivered on time as 45 days in Sun effective SC management.</b>
<b>4: - Demand Management: -</b>	<b>Estimate demand accurately</b>
<b>5: - Order Fulfillment</b>	<p>➤ <b>Strong logistic system to ensure delivery of order on time. Delivery Time is high.</b></p> <p>➤ <b>Sun receiving material form Supplier</b></p> <p>➤ <b>Movement of material in Plant</b></p> <p>➤ <b>Delivery of goods to customer Effective</b></p> <p><b>Logistic System</b></p> <p>➤ <b>At present the time required to deliver to the store is very high in Sun Electronic evaluate the Centralize warehouse causing delay delivery to store. Creation of Additional store facility is required.</b></p>

<b>6: - Manufacture Flow Management</b>	<b>Production planning Department should be effectively managed, received material Process, delivery to store as produced instead of present system once in a month.</b>
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**E- COMMNERCE: -**

<b>E-Sourcing</b>	<ul style="list-style-type: none"> <li>➤ <b>Website should be developed. Order may be received from anywhere. Physical store-Not necessary (Sun Electronics)</b></li> <li>➤ <b>Integrated ERP Required.</b></li> <li>➤ <b>As order Received-Feed in software</b></li> <li>➤ <b>Production department (information on Real time not even in a one time in a month)</b></li> <li>➤ <b>If Delay- delay Production</b></li> <li>➤ <b>The company must have effective mechanism to capture customer order &amp; feed it into Production planning on real time. Existing one order per month from store would not fix the purpose, delay in Intimation means delay in production, delay delivery.</b></li> </ul>
<b>E- Purchasing</b>	<ul style="list-style-type: none"> <li>➤ <b>Software =Material Required communicated to supplier (Electronic data interchange)</b></li> <li>➤ <b>Vender received material Req. Information Timely</b></li> <li>➤ <b>Vender delivery the quality material on time only when he receives the information on Real time basis.</b></li> </ul>
<b>E- Payment</b>	<ul style="list-style-type: none"> <li>➤ <b>As material Received -RTGS/NEFT</b></li> <li>➤ <b>Save time (Cost)</b></li> </ul>

<b>Production</b>	<ul style="list-style-type: none"> <li>➤ <b>Production must be in accordance with customer order, business environment change.</b></li> <li>➤ <b>Present: - Customer will buy what we produce</b></li> <li>➤ <b>Now: - We have to produce what customer require.</b></li> </ul>
<b>Logistic System</b>	<ul style="list-style-type: none"> <li>➤ <b>Logistic team must be trained with required of new business.</b></li> <li>➤ <b>Either</b> <ul style="list-style-type: none"> <li>— <b>Outsource</b></li> <li>— <b>Own transfer</b></li> </ul> </li> </ul>

## Business Excellence Model

**Question 42:** As a guest lecturer at a symposium for Business Excellence where you are giving a lecture on “Sustaining Business Excellence”. A manufacturer of a fashion clothing line is one of the participants at the symposium. He has the following query:

“We are an apparel company that manufacture and sell our fashion clothing and accessories directly through 30 stores spread across India. Shortly we are planning to establish similar outlets overseas. Our business is under constant change due to changing customer terms, at the same time, we are the largest company in our industry segment in India, both in terms of market share and profits. We have a satisfied base of customers who are loyal to our brand. Shareholders are also satisfied stakeholders due to good returns provided on their investments. What would be the relevance of Business Excellence model to our company?

Thank you”.

You are required to frame an appropriate response to this query.

Required: —

- (i) Explain the importance of business excellence to an organization.
- (ii) List the tool available to achieve and sustain excellence.
- (iii) Apply the fundamentals of EFQM model on the appeal company.
- (iv) Explain the relationship between various criteria of the model in general terms.

**(Study Material)**

**Solution:** (i) Business Excellence is a philosophy for developing and strengthening the management systems and processes of an organization to improve performance and create value for stakeholders. Stakeholders in an organization are not limited to shareholders (business)

alone. They include also customers, employees (people) and society. What an organization does impact all the stakeholders in different ways, yet they are all interlinked to each other. Customers' needs are of paramount importance to companies. Yet given uncertain conditions, shareholders demand challenging return on their investments. Employees need more from their company than just their pay-check. They want the company to enable to grow their knowledge and experience that can improve their career growth. Society expects companies to operate ethically and for the overall betterment of the society and environment.

For several years' businesses have been operating under challenging circumstances. For example, landline phones have been entirely replaced by mobile phones. Television programs can be watched seamlessly on internet enabled mobile phones. Not just this, today's smartphones have computing capability much more than the computers that were used in Apollo Mission to send the first man to moon! The proliferation of mobile phones has changed not just the telecom industry but also others like communication, banking, e-commerce etc. The pace of change is both exhilarating and challenging.

To manage this complex scenario, a company cannot focus on only one aspect of their operations. Optimize processes, delivery quality to customers, manage employee talents, earn required return on investment while managing to be a socially responsible organization. In short, the company should achieve excellence in all aspects of its operations. This is business excellence. Business excellence principles emerged because of development of quality drive into traditional business management. It is imperative not just to achieve excellence but also to sustain it.

Business excellence models are holistic tools that help companies develop stakeholder focused strategy. Each operation within a company enables a corresponding result. Business models present a formal, standardized cause effect relationship between different operations (enablers) and their resultant consequences. If the company want to achieve a different result, it has to do things differently. This can be better analyzed through these models. Continuous improvement on various operations will ultimately lead to excellence. More importantly, these models need to be used to sustain and maintain excellence to retain their competitive advantage. They are not to be taken as one-time exercise by the company. Assessments using this model have to be made periodically so that timely action can be taken to achieve the desired result.

**(ii)** Some of the popular business excellence models are (i) the European Foundation Quality Management (EFQM) model (ii) Baldrige Criteria for Performance Excellence (iii) Singapore BE Framework (iv) Japan Quality Award Model and (iv) Australian Business Excellence Framework.

**(iii)** The apparel company is a well-established player in the industry. It is a growing company that is looking to expand its operations overseas. To achieve business excellence in this environment, the company could adopt the EFQM model, which is a popular model.

The EFQM model was developed by the European Foundation for Quality Management. The model provides an all-round view of the organization and it can be used to determine how

different methods fit together and complement each other. It can help the company understand the cause-and-effect relationships between what their organization does and the results it achieves. Creating an EFQM Management Document gives the organization a holistic overview of its strategic goals, the key approaches it has adopted and the key results it has achieved.

The fundamental concepts for excellence are the basic principles that describe the essential foundation for any organization to achieve sustainable excellence. With respect to the company, they can be detailed as below:

- (a) Adding value to customers: Companies need to understand their customers, their needs, anticipate their needs and make use of opportunities to fulfil their expectations.

In the current case, fashion apparel business is ever changing and dynamic due to the changing trends in customer's tastes. This could differ across locations within India and abroad. In the era of e-commerce, competition would be cut-throat. Before going to "how" it can meet customer's needs, the company should be clear on "what" need of the customer it can satisfy. For example, should the company cater to Indian apparel market, western apparel market, men or women or children apparel market etc. Once the "what" is clear, the company should have mechanisms in place to find out and anticipate customer tastes. Accordingly, it should structure its operations to add value to the customers in terms of quality, availability, support, and experience.

- (b) Creating a sustainable future: Society and environment (People and Planet of Triple Bottomline concept) play a major role in ensuring the sustainability of business. A company should have as much positive impact on its surroundings and try to minimize any negative impact on the same. Here, the company should assess the environmental impact of its operations, measures to minimize adverse impacts, business impact on the society etc.

For example, leather is contended to be harmful to the environment since it requires the skin of animals specially cattle hide, needs huge amount of energy and chemicals to process it. This has a negative environmental impact. As regards societal impact, suppliers of cloth to the apparel company should not indulge in labor malpractice like child labor and should adhere to safety standards within its factories. The company should procure cloth only from suppliers who adhere to such standards.

- (c) Developing Organizational Capability: Companies need to manage change within the organization and beyond. The company should identify "what it is capable of being great at?" in order to differentiate it from its competitors. For example, the apparel company may have the capability of tracking its inventory at the stores on real time basis. As soon as the inventory falls below a certain level, the stores issues fresh products to stock up. This ensures that there are no stock outs at the retail outlet. This ability to track inventory real time and ability to stock up quickly may be unique to the company that gives it a competitive edge. Another can be the ability to quickly change the apparel production to meet changing trends. Likewise, the company should identify and develop unique

capabilities to have a competitive edge in the market.

- (d) **Harnessing creativity and innovation:** Continuous improvement and innovation brings value to the company. The company should promote a working environment that enables and appreciates creativity and innovation. For example, new apparel designs can be promoted to test the market. If found feasible, the company can go for mass production of the same.
  - (e) **Leading with vision, inspiration, and integrity:** The tone at the top defines the rest of the company. The leaders and management of the company should have a clear vision of what the company wants to achieve, develop strategy to achieve it, work with integrity and ethics. Leaders shape the future of the organization.
  - (f) **Managing with agility:** Agility would be the capability to identify and effectively respond to opportunities and threats. For example, although the apparel company is in an expansionary phase, it should consider the threat, yet opportunity of using e-commerce as a platform to reach out to customers directly. Brick and mortar stores are becoming largely redundant due to online platforms, a threat the company should recognize and act upon.
  - (g) **Succeeding through the talent of people:** An organization is only as good as the people who work in it. There should be an atmosphere of teamwork that enable achievement of organizational and personal goals. Performance evaluation, reward and recognition programs, training and talent network are ways to cultivate talent within the organization.
  - (h) **Sustaining outstanding results:** Use of EFQM model is not a onetime exercise. Constant and periodic evaluation is required to keep up and sustain excellence.
- (iv)** The criteria of the model are comprised of 5 enablers and 4 results. Enablers covers what an organization does (its objective) and how it does it (strategy, use of resources to achieve it).
- (a) **Leadership:** A leader defines the organization's culture. They enable the organization to achieve its goals by taking the correct decisions at the correct time. To do this they should have sufficient skill, work as per the company's code of conduct and should be ethical in their dealings.
  - (b) **Strategy:** Operations should be planned and directed as per a clearly defined strategy. The company's vision and mission statement with respect to its various stakeholders are the goals that the organization wishes to achieve. Strategy (plan) enables the company to achieve these goals.
  - (c) **People:** Excellence is possible only if the people working in the company wish to achieve it. They must be motivated, recognized, and managed to enable them to work towards the company's vision and mission. The work culture should be that this opens up opportunities for personal development as well. This would cultivate a bond with the organization, which enables people working within to strive for excellence.
  - (d) **Partnerships and resources:** Effective management of partnerships that the company has

with other organizations is critical to success. Partners could be external vendors, suppliers, and service providers. The services of partners enable business to operate smoothly. Resources, both tangible and intangible should be managed optimally. Tangible resources can be financial (cash, bank accounts) and physical assets (machinery, building, land etc.). Intangible resources would be intellectual property rights, information technology, licenses etc. Proper management of resources enables optimal results.

- (e) Processes, Products, and Services: A company exists because of its processes, products, and services. They should be managed and continuously improved to create value to the stakeholders.

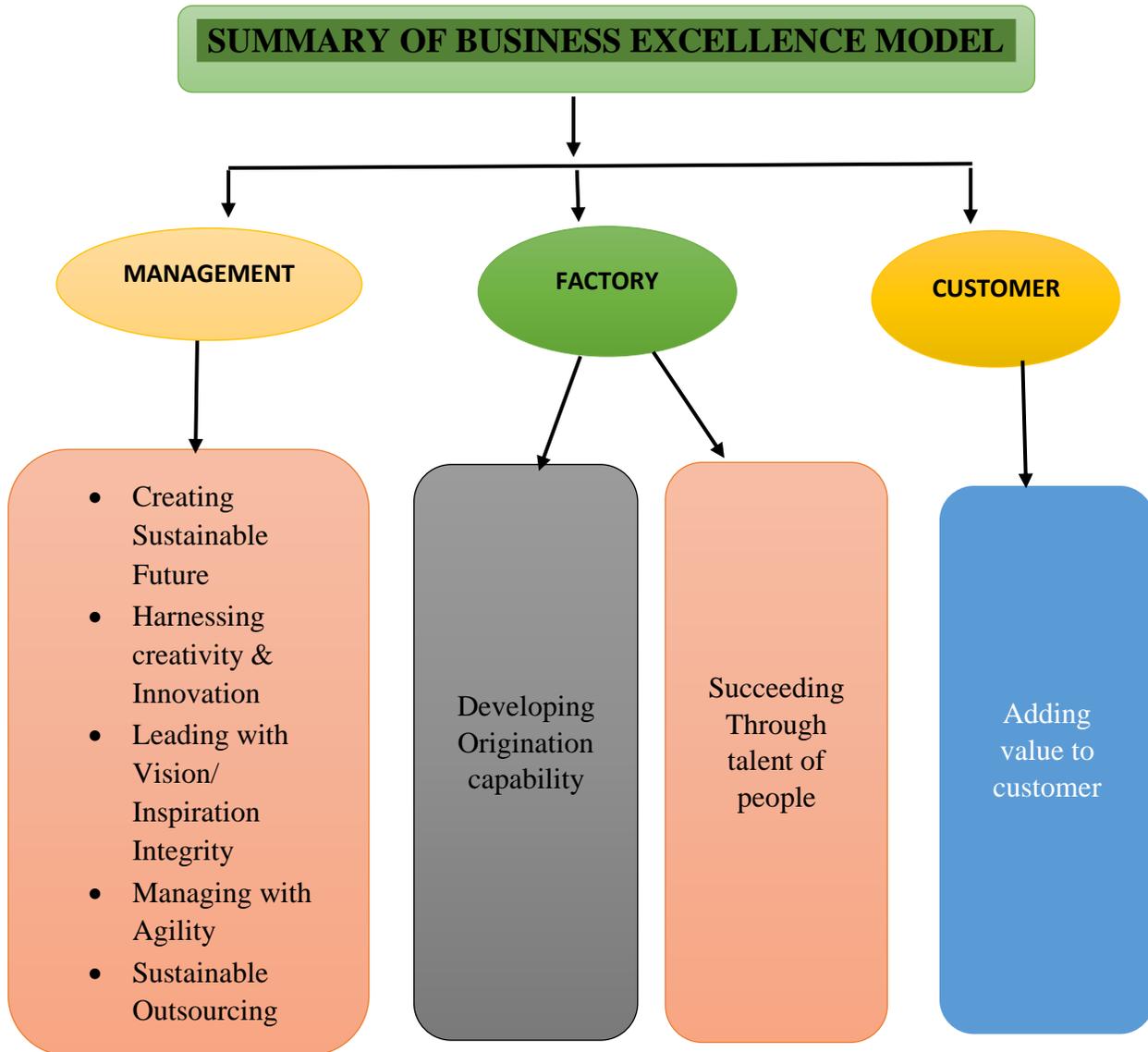
Results are what the organization achieves following its operations and decisions. As explained before, the stakeholders of the company are investors (business), people (employees), customers and society. In order to track performance, the company has to develop Key Performance Indicators (KPI)s for each of the stakeholder groups. Results should be tracked periodically. Changes to targets and benchmarks should be continuously made to reflect the current objectives that the company wants to achieve. Some of the results that the company can look at are:

- (a) Customer results: Are the customers of the company satisfied with the products and service? How does the company fare in terms of brand loyalty? Is the customer base growing to indicate increasing market share?
- (b) People results: Does the company have skilled and motivated employees? What is the employee turnover with reasons for the same? Does the company have proper access to hire required talent? Are the employees motivated, trained, recognized, and rewarded for their performance? What is performance measurement system, is it robust and accurate to measure performance?
- (c) Society results: Is the company a good corporate citizen. Are the objectives of corporate social responsibility being met? If the organization is a not-for-profit organization, is it meeting its objectives and goals?
- (d) Business results: Is a for profit organization achieving the required return on investment, profitability that the shareholders and other investor demand? Has the company been able to manage financial and other risks properly?

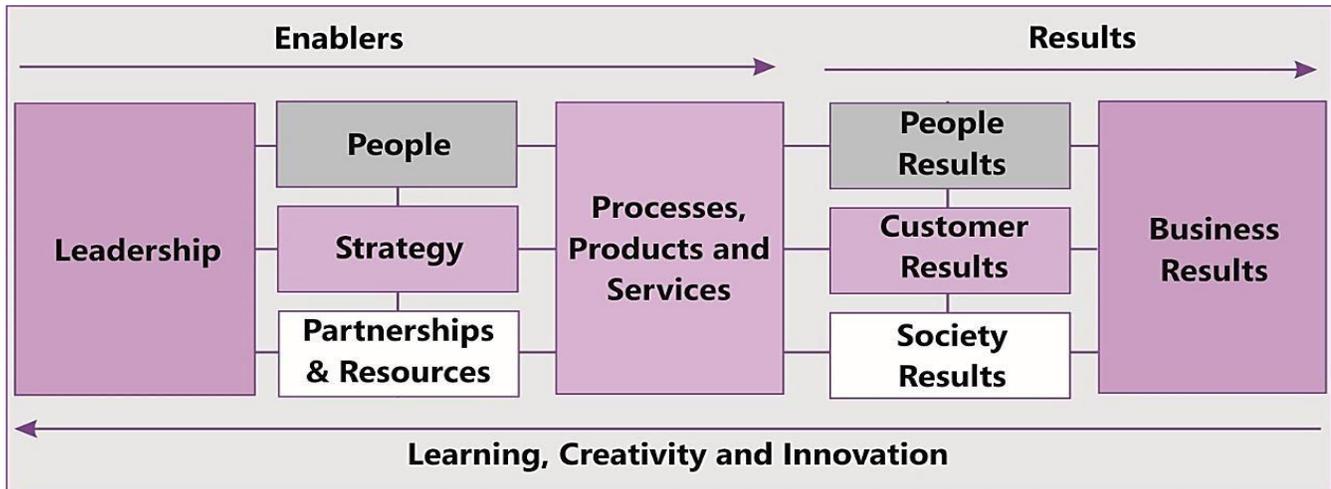
Enablers enable achievement of results. EFQM model documents this flow and symbiosis in a structured way. It highlights the strength and weakness of the enablers. With this information, the company can alter its operations and strategy to achieve desired results. On assessment, there is a flow from results to enablers. If the results have been achieved, enablers continue to operate status quo. If the results fall short of targets, changes have to be made to enablers to improve performance.

Therefore, it can be concluded the EFQM model encourages constant self- assessment to achieve excellence.

When a company wins an excellence, award based on a business excellence model, it gains in stature within the industry. This recognition could work to its advantage financially and otherwise.



The dynamic nature of the model is emphasized by the arrows as shown in the diagram.



### Business Excellence Model

<b><u>Basic concept:</u></b> =	<p><b>All Round development:</b> - Company should achieve excellence in all aspects of its operation Holistic tool.</p> <p><b>“Is a philosophy for developing &amp; strengthening the management system &amp; process of an organization.</b></p> <p><b>A:</b> - To improve performance</p> <p><b>B:</b> - Create value for stakeholder.</p>						
<b>Stake Holder:</b> -	<p><b>Share Holder:</b> -High Return on investment</p> <p><b>Customer:</b> - Quality on time delivery</p> <p><b>Employee:</b> - Bonus in addition to salary growth, their knowledge update.</p>						
<b>Society:</b> -	Operate ethically (For environment)						
<b>Changes:</b> -	<p><b>Business circumstances change very fast (become challenging)</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>OLD</u></td> <td style="text-align: center;"><u>NOW</u></td> </tr> <tr> <td style="text-align: center;">↓</td> <td style="text-align: center;">↓</td> </tr> <tr> <td style="text-align: center;">Landline Phone T.V. ( Programs) Computer</td> <td style="text-align: center;">Mobile Internet Smart phone</td> </tr> </table>	<u>OLD</u>	<u>NOW</u>	↓	↓	Landline Phone T.V. ( Programs) Computer	Mobile Internet Smart phone
<u>OLD</u>	<u>NOW</u>						
↓	↓						
Landline Phone T.V. ( Programs) Computer	Mobile Internet Smart phone						

**Company should focus in all area. For this purpose, some business excellence Models are:**

**1:** - European Foundation Quality Management (EFQM) (Most Popular Model)

**2:** - Baldrige creation for performance excellence Model. **3:** - Singapore BE framework.

**4: - Australian business excellence model.**

**BASIC PRINCIPLES FOR ANY ORGANISATION TO ACHIEVE SUSTAINABLE EXCELLENCE ARE: -**

<p><b>1: - Adding value to the Customer: -</b></p>	<p>Analyze customer taste, needs expectation &amp; then accordingly structure its operation to add value to customer in terms of quality, availability, support &amp; experience.  <b>Example: - Apparel Company: - Should cater capture/either to: - (i) Indian Market (ii) Western apparel market (iii) Men, women/Child apparel Market.</b></p>
<p><b>2: - Develop Organization Capability: -</b></p>	<p>Ability to quickly change to meet challenging Trend, ability to unique differ from others.  <b>- Competitive edge. - Apply Inventory Management System. - Inform to supplier on Real Time basis, to avoid stock out.</b></p>
<p><b>3: - Harnessing Creativity innovation: -</b></p>	<p>Develop working environment to ensure innovation &amp; continuous Improvement  <b>Example: - Test new apparel design: - Promote: - - If Feasible - Do mass Production</b></p>
<p><b>4: - Leading with Vision inspiration/integrity: -</b></p>	<p>Leaders—Clear Vision (Shape Future)  <b>- Develop strategy to achieve it what they want</b></p>
<p><b>5: - Managing with agility: - Example: - Tea - Malai</b></p>	<p>Effectively respond to opportunity /Threats  <b>Apparel Company: - accept - e Commerce - To reach directly to customers.</b></p>
<p><b>6: - Succeeding through the talent of People: -</b></p>	<p>Atmosphere: - Team work</p>
<p><b>Company will be creating from employees - Employees are back bone of the company Car - ----- Engine</b></p>	<p>Good people - Good organization  <b>Performance evaluation: - Rewards, Training Programs, Motivations, employee of the month.</b></p>

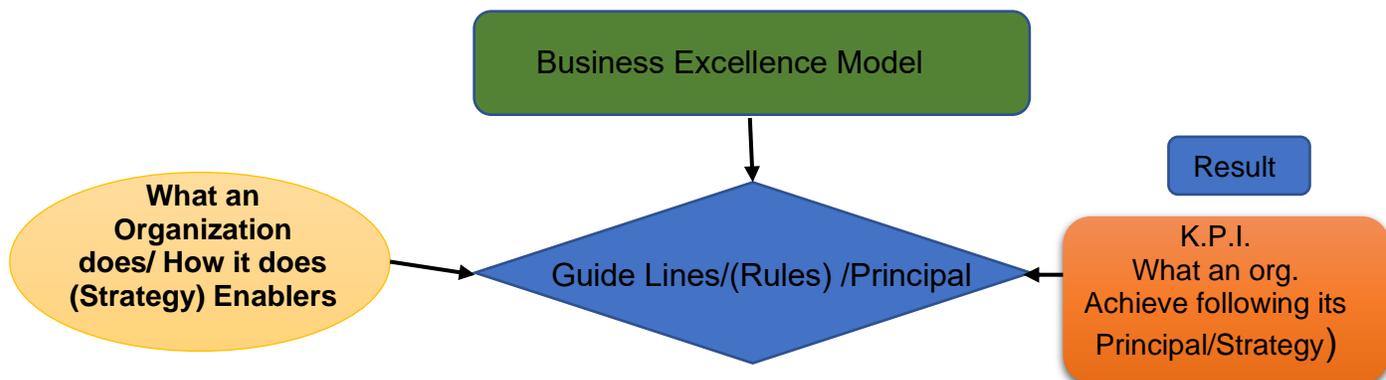


➤ If Results have been achieved enables continue to operate

➤ If Results have not been achieved changes have to be made to enables to improve performance

## Basic Concept applicable for every Case study of Business Excellence Model

### Summary of Business Excellence Model



Customer	Content	Ex.
(1) <b>Adding Value to the Customer</b>	* Co. Need to understand the expectation, need taste Requirement of their customer.	<b><u>Cloth Industry:</u></b> - Indian Apparel, Western apparel, men, women, children.
	According, it should structure It operation to add value, to the customer in terms of quality, on time delivery, support.	<b><u>Car Industry:</u></b> - hatchback car, Sports car, sedan. Mobile: - Features
<b><u>Factory:</u></b> -		
(2) <b>Developing Org capability:</b> -	Company should identify & develop unique capability to have competitive edge (Differentiate from other)	<b><u>E.g.</u></b>

	<p>(Employee: - Why we offer Job to you: - Decision Making, Power in tuff condition)</p> <p><b>Lecturer:</b> - Delivery of words.</p>	<ul style="list-style-type: none"> <li>➤ Tracking inventory on Real Time basis at all stores</li> <li>➤ Your supply chain</li> <li>➤ Flooring Co.: -</li> </ul> <p>To install your new flooring tomorrow if you buy it today.</p> <p><b>Singer, Player:</b> -</p>
<p><b>(3) Succeeding through talent of people.</b></p> <p><b>(Engine/ Pillar)</b></p>	<p>Atmosphere of team work, to ensure achieve organisation goal/Personal goal. (They should do works by heart /not by time)</p>	<p>Performance evaluation employee a month, Reward, Training -ways to cultivate talent within the organisation.</p>
<b>Management</b>	<b>Content</b>	<b>Example</b>
<p><b>(4) Creating sustainable future</b></p>	<p>Company should have positive impact on environment try to reduce negative impact, (Triple bottom line)</p>	<ul style="list-style-type: none"> <li>• Use natural resource in optimum manner.</li> <li>• Do not utilize child labour.(Exploitation of Labour)</li> <li>• <b>Do not use leather as input:</b> - It require animal skin.</li> </ul>
<p><b>(5) Harnessing creativity &amp; Innovation</b></p>	<p>Promote/encourage working environment that appreciate creativity &amp; innovation, continuous improvement</p>	<p><b>New apparel design tested:</b> -</p> <ul style="list-style-type: none"> <li>• If feasible-Mass production</li> <li>• Filter/Purifier at source of water.</li> </ul>

<b>(6) Leading with vision, Inspiration, Integrity</b>	Management of company should have clear vision & strategy to achieve them.	Leader shape the future of organization. High thought: - High growth
<b>(7) Managing with agility</b>	Capability to identify & effectively respond. To opportunity & threats. To Grab new challenges	E-commerce /Online business.
<b>(8) Sustaining outstanding Result</b>	It's not a onetime Programme, Do it continuous.	-----

<b><u>Enables</u></b>		<b><u>Results</u></b>	
(What an organization does/How it performs by framing strategy /use of resources)		(Should be tracked Periodically) K.P.I.	
<b>a: - Leadership</b>	Leader (having sufficient skill) Take the correct decision at correct time i.e., Frame the strategy	Business Results	Profit, Return on Investment
<b>b: - Strategy: -</b>	According to the defined strategy, Operations: - Planned & Activated.		Profit, Return on Investment
<b>C: - People: -</b>	Motivate the people/staff to do the work/so as to achieve organisation goal.	People: -	Employee turnover, performance measurement system: i.e., Robust/accurate.
<b>d: -Partnership &amp; resources: - (Vender), (Machinery/Plant/Cash bank Balance)</b>	Service should be excellent Resources should be utilized optimally	Society Result	Good Corporate citizen C.S.R. (net)

e: - <b>Process: Product, Services</b>	Should be managed/continuously Improved.	Customer Result	Satisfaction level, brand loyalty/ Increase market share
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**CRUX:** - If the Results have been achieved, enables continue to operate status Quo, otherwise changes have to be made to enablers to Improve performance.



## Case Study No: - (Gain Sharing Management)

**Question 43:** **Raya Health Care** Limited is a leading healthcare service provider in Mumbai, it has approximately 450 potential beds, it provides diagnostic and day care specialty facilities also. In diagnostic centers they are using traditional devices for CT Scan and MRI which are not enough as per demand. Patients waited more than weeks for CT and MRI scans, this problem can cause delay in diagnosing illness; waste of time and other resources; not just in radiology but throughout the healthcare system.

Raya has planned to outsource CT scan and MRI services to Livlife, which has world- class international chain of diagnostic center. Livlife promise to provide radiologist report within 24 hours. However, finance manager of Raya doubt that it will not be a profitable arrangement. For the satisfaction of Raya, Livlife has entered an agreement to provide its services to Raya with no guarantee of receiving payment. Raya agrees to the following conditions:

- Cost savings generated in first year, the same will be retained by Livlife.
- Cost savings generated in second and third year will be shared between Raya and Livlife at a ratio of 30%:70%.
- Cost savings generated in the fourth year will be passed to Raya.
- Any cost savings generated by an idea proposed exclusively by Raya that does not require capital investment by Livlife will be immediately passed along to Raya.

Required: -

DISCUSS the agreement between Raya and Livlife. **(RTP Nov'19)**

**Solution:** - The agreement between Raya and Livlife is **Gain Sharing Arrangement**. Gain sharing (also known as cost saving sharing) arrangement is an approach to the review and adjustment of an existing contract, or series of contracts, where the adjustment provides *benefits to both parties*. A fundamental form of gain-sharing is where a supplier agrees to perform its side of the contract with *no guarantee* of receiving a payment. Instead, any payment received is based upon the benefits that emerge to the customer as a result of the successful completion of the supplier's side of the bargain.

Livlife and Raya has also entered into such arrangement. This is clearly a risky stance for the supplier i.e., Livlife, because it could spend a fortune and walk away with nothing. Alternatively, if the benefits to Raya are substantial, Livlife could find itself rewarded with a large return. Cost savings might be attained from reducing the cost of supplies, implementing new skill and technologies, revised delivery time, improvements in operations etc.

The gain, benefit, or advantage to be shared is ***not necessarily financial***, although financial benefits are expected to occur frequently. The Raya, for instance, will not necessarily take cost savings in the form of a lower contract value but might require a *higher specification* for medical treatment. However, to assess any financial benefit, both parties have to provide each other with access to relevant cost numbers to determine the basis for the assessment of the benefit and the calculation and sharing of the benefit.

Many contracts involving these arrangements have emphasis on greater openness and shared development and improvement. In the given case gain-sharing deals are, on the face of it, a win-win situation for both Raya and Livlife, interest of both is aligned. Livlife is trying to save costs of Raya while Raya is trying to get world class services.



## CHAPTER 3

# Lean System & Innovation (JIT)

### CASE STUDY (TOTAL PRODUCTIVE MAINTENANCE)

**Super Refineries Limited** is a leading oil refining company operating in India. The company has three plants - one each situated in North, South and West. The company has a refining capacity of 30 million barrels. The company currently enjoys a 40% share of the domestic market. The plants run on all 365 days in a year and operate at 100% of the capacity. The company currently does not have any maintenance schedule in place for its plant and machinery. Any repair requirement of plant and machinery is carried out on ad-hoc basis.

The company has implemented Total Quality Management (TQM) to ensure that the company rolls out top quality products. The company did not receive any complaints from its customers regarding poor quality of products or products not meeting the specifications. The entire production team is quite excited with superior quality of products.

However, in the last three months, about 30% of the dispatches to customers were delayed. This comes at a time when the entire plant had to be shut for maintenance activity due to breakdown in the machineries for a week. The company also witnessed 20% rejection of the final products. The customers claimed that the products did not meet the specification agreed by them with the company. The Director of Refineries is worried about the worsening situation of production at plants. Another concern for the director is the increase in number of accidents and loss of productive time due to this.

The chairman of the company convened an urgent meeting of the Board of Directors to understand the impact and reasons of the situation at production plants. A key issue highlighted by plant supervisors is that the scheduled maintenance activity for plants was never carried out. The underlying assumption for not carrying out such maintenance activity was - "Since the plant is running smoothly, there is no requirement of preventive maintenance activity. Such activities cost a lot in terms of money and also cause loss of productive time which could otherwise be used for production". The maintenance departments and production department functioned in silos with almost no co-ordination amongst themselves. The most critical parts of the plant were not maintained for a long time.

The chairman called you after the meeting and asked you to help him understand the current issue at the plant. "We had Total Quality Management (TQM) in place at all our plants. I understand from the production director that TQM is working as intended. Why are we facing the breakdown problem in spite of having a TQM in place"- said the Chairman?

#### Required

The Chairman has asked you to quickly prepare a note highlighting the following points—

- (i) What could be the likely losses arising due to breakdown of machinery due to non-maintenance?
- (ii) What kind of maintenance programme could address the issue being faced by the company?
- (iii) EXPLAIN the key features of such programme.
- (iv) COMPARE the programme identified above and TQM.
- (v) What are the various types of maintenance practices that the company can implement.

## **Solution**

### Issue

Super Refineries Limited has implemented a Total Quality Management and is known for producing top quality products. The company enjoys 40% market share in the domestic market. The plants operate at 100% capacity and on all days of the year. This indicates that the company does not carry out preventive and corrective maintenance. The company has not received any complaints with respect to quality from its customers. This can be attributed a solid TQM in place.

However, in the last three months, the company has faced delayed in supplies and customer rejections. The delay in supplies could be attributed to the breakdown in the machineries. The production could have been of an inferior quality if the production managers would have rushed to meet the production deadlines due to loss of production time owing to breakdown.

The discussions at the board meeting indicate that the company has not prioritized preventive maintenance. Maintenance is being carried out on an ad-hoc basis with a proper preventive maintenance schedule. The company is concerned about costs of maintenance and hence no preventive maintenance was carried out. Further, there is no co-ordination between the production team and maintenance team.

### Losses Arising Due to Breakdown

The following are the losses which can be associated with the breakdown of machinery at Super Refineries Limited -

- Equipment failure leading to unexpected loss of time - The production at plants was interrupted and the supplies to customers were delay in case of Super Refinery Limited.
- Idle waits and stoppages due to ad hoc maintenance requirements. Since the interruption is unplanned, the productive labour time is wasted.
- Production of inferior quality products causes financial losses. The company would also incur additional costs to remake the product without any additional revenues.
- The company would also incur losses in terms of additional set up costs. Every time a machine

breaks down, a significant amount of time would be wasted in setting up the production processes again.

## Total Productive Maintenance (TPM)

Based on the facts of the case, it is very clear that the company has not prioritized maintenance. The company can use TPM philosophy to address the issue.

TPM is a maintenance philosophy aimed at eliminating production losses due to faulty equipment. The objective of TPM is to keep equipment's (plant, machinery etc.) in such a position to produce expected quality products at the maximum capacity with no unscheduled stops. This also includes attaining:

- Zero breakdowns.
- Zero downtimes.
- Zero failures attributed to poor condition of equipment.
- No loss of efficiency or production capacity due to the equipment.

The concept was initially applied to equipment i.e., plant and machinery. Of late, the concept has also been extended to processes and employees. TPM focuses in keeping equipment and employees in top working condition to avoid any breakdowns and delays in manufacturing process.

Traditionally, maintenance work has been considered as a responsibility of the Maintenance Team which is different from the production team. Total Productive Maintenance seeks to involve workers in all departments and levels in ensuring the effective operations of the plant. When both the teams work in alignment, learning's can be shared with each other. The production team also takes ownership of maintenance requirement. A sole focus on higher production without taking care of maintenance requirement can hamper the long-term production requirements, as could be seen in the case of Super Refinery Limited.

## Features

- Traditional maintenance is centered in the maintenance department. However, TPM seeks to involve workers at all departments and levels. There is a great amount of co-ordination between the production and maintenance team in TPM.
- Autonomous maintenance focuses on training operators to be able to take care of minor maintenance tasks. This relieves specialized maintenance staff to focus on critical issues.
- TPM focuses on achieving and sustaining zero losses with respect to minor stops, measurement and adjustments, defects, and unavoidable downtimes.
- Planned Maintenance is aimed to have trouble free machines and equipment producing defect free products for total customer satisfaction. The approach here is proactive maintenance instead of reactive maintenance. Super Refinery limited had a reactive approach to maintenance where maintenance was carried out on an ad hoc basis.

- TPM emphasizes on training of workers across all levels and departments. The ultimate objective is to have a factory full of skilled workers.

The issues faced by Super Refinery Limited due to unplanned shutdowns can be addressed using a Total Productive Maintenance philosophy.

The following are the Eight Pillars or Principles of TPM—

- Autonomous Maintenance
- Focused Improvement
- Planned Maintenance
- Early Equipment Management
- Quality Maintenance
- Education and Training
- Office TPM
- Safety, Health and Environment

TQM and TPM

Total Quality Management (TQM) and Total Productive Maintenance are often used interchangeably. However, TQM and TPM are considered as two different approaches. TQM attempts to increase the quality of goods, services and concomitant customer satisfaction by raising awareness of quality concerns across the organisation. In other words, TQM focuses on the quality of the product, while TPM focuses on the equipment used to produce the products. By preventing equipment break-down, improving the quality of the equipment and by standardising the equipment, the quality of the products increases. TQM and TPM can both result in an increase of quality. However, the approach of each is different. TPM can be seen as a way to help achieving the goal of TQM.

Super Refinery Limited has implemented TQM and is delivering high quality products to its customers. TQM focuses on the end product being supplied to the customer. In the process of producing high quality and volumes of products, the maintenance aspect of plant and machinery was ignored by all. This led to breakdowns and unplanned shutdown of the plant and machineries. The TPM philosophy would focus on the equipment which support production of high-quality products under TQM.

Types of Maintenance under TPM

The following are the types of Maintenance Programmes which Super Refineries Limited can implement—

Breakdown Maintenance

No maintenance is carried out unless the equipment actually fails. This is the approach taken by

Super Refineries Limited currently. This type of maintenance is used when the equipment failure does not impact the operations and production significantly and the only cost incurred is the cost of repair. This is not advisable in case of Super Refineries as breakdown of machineries have led to significant delays in deliveries and poor quality of production.

#### Preventive Maintenance

It is a daily maintenance (cleaning, inspection, oiling and re-tightening), designed to retain the healthy condition of equipment and prevent failure through the prevention of deterioration, periodic inspection or equipment condition diagnosis, to measure deterioration. This can be compared with a routine and periodic maintenance activity of a vehicle.

#### Corrective Maintenance

Corrective maintenance focuses on making machines easier to clean and maintain. There could be reconfiguration of certain parts of the machines (say, a lubricating pipe) to ensure that the maintenance staff can carry out maintenance effectively and easily.

#### Maintenance Prevention

Through the analysis of maintenance data, the maintenance technicians can work with the designers of our machines to create machines that are more reliable. Maintenance and repairs that are required can be made as simple and as easy as possible to reduce time, save money and improve safety.

#### Autonomous Maintenance

In case of autonomous maintenance, minor and day to day repairs are carried out by the operators of plant themselves instead of waiting for technicians. Activities like lubricating, bolt tightening etc. are done along with minor repairs by the floor workers or operators. Maintenance team is called only when sophisticated and highly technical maintenance work is required. You may change the tires of your car on your own but to repair a puncture or wheel alignment, you visit a technician.

#### Conclusion

Super Refinery Limited should implement a TPM which would complement and support the TQM philosophy. This would also address the issue of the production team and maintenance team not working in co-ordination. Down time for maintenance should not be considered as a cost or unproductive activity. This should be an integral part of the overall manufacturing plan. This would ensure that emergency and unplanned downtime are kept to a minimum.



## **SUMMARY OF SIX SIGMA**

**DMAIC is a Methodology of Six Sigma used to Improve existing business Process**

**SIX SIGMA (BASIC CONCEPT For Case Study)**

# DMAIC

Define the Process	Basic Understanding	Applicable for almost all case study (All company, service Provider)						
	<p>Ex: - In case of a Student</p>	<p>What is the Req. of Customers? Satisfaction i.e., on time delivery (undamaged goods) &amp; Quality Goods. Properly packed in box (Min req in manufacture &amp; Packing Process) why returns forms customers are Increasing, it will increase cost, dent on branding as well as adverse effect on financial performance Six Sigma focus on defining the objective &amp; opportunity to improve by: - (a) Discussion with staff (b) Customer feedback/ complaint</p>						
<p>(समस्या क्या है) (जब तक समस्या सही से explain नहीं होगी तो हल कैसे निकलेगा)</p>	<p>Why a student is not being able to concentrate on his study (मन नहीं लगता) Purpose: - To get success/Rank/Good job</p>							
<p>2: - Measure (Where we stand at present)</p>	<p>Quantitative procedure to collect statistical data. Different Marks in different subjects. Which subject has low marks, so that we can Improve the overall performance by improving in that particulars subject (s).</p>	<p>Collect the statistical data to measure the impact of various process on customer satisfaction. As Different process has different impact on customer satisfaction. (What is the level of six sigma of current operation) Banking: - Waiting Times have (Doctors/Hospitals) Maximum Impact on customers satisfaction Sales Return (Types)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 20%;">%</th> </tr> </thead> <tbody> <tr> <td>Difficulty in (a) Assembling /part missing</td> <td>XX</td> </tr> <tr> <td>(b) Damage defective Poor quality</td> <td>XX</td> </tr> </tbody> </table>		%	Difficulty in (a) Assembling /part missing	XX	(b) Damage defective Poor quality	XX
	%							
Difficulty in (a) Assembling /part missing	XX							
(b) Damage defective Poor quality	XX							

		(c) Late arrival	XX
			_____
		<b>Sales Return</b>	
		Country Wise	XX
		Product Wise	XX
			_____
<p>3: - <u>Analyze</u> (Detect the root cause of Problem so as to improve that Problem)</p>	<p>Identify the reason of achieving low marks in particular subject(s): Possible reasons may be</p> <p>A: - Not getting proper coaching</p> <p>B: - Not Preparing proper notes</p>	Detect the root cause of Problem: - Eg.	
		<u>Problem</u>	<u>Possible cause</u>
		a): - Defect in Assembly	Poor design, No proper marking
		b): -Parts missing: (bicycle, Furniture, toys etc.)	Defect in packing (not user friendly)
		C): - Defective / damage Goods	Lack in manufacturing
		d): - Not delivered properly	In appropriate delivery system.
		<p>Country (Particular) has high % of Sales return: - Dealer/business partner is not good.</p> <p>(Defective can be rectified but damage goods can't be rectified, must disposed)</p> <p>*Assembly line workers (in efficiency): - New workers, Lack of proper standardized training.</p> <p>*Substandard Raw material used: - Improper, Inspection</p> <p>*Machine: - Outdated</p>	
<b>Improve</b>	Try to join expert	Experts take corrective measure,	

	coaching, prepare appropriate notes to improve weak subjects.	Recommendations to improve process in consultation with staff/based on facts, to minimize/eliminate the root cause of problem.	
		<b><u>Problems</u></b>	<b><u>Suggestions</u></b>
		a) Defect in Assembly: -	Adequate marking
		b) Part missing: -	Packing could be improved by Training to staff (Inspection before delivery)
		c) Defect/damage	Apply Preventive maintenance
		d) Delay/not delivered properly	Improve delivery system/ may be outsourced.
		e) Substandard Raw material used	Inspect at receiving stage/ change supplier.
<b>Control</b>	Monitor/check that the weak subject is improved or not if improved: Keep it up If not improved: Revise/change/amend the process	Monitor the performance ongoing basis If sales return > Target level i.e. No Improvement, report to responsible person & Revise/ change the procedure of DMAIC. If Sales Return < Target i.e., improvement is achieved, present process should be continued.	

## CASE STUDY No:- 1 (Six Sigma and Cost of Quality)

Absolute Singapore Pte Ltd. (ASPL) manufactures electronic components for washing machines in an assembly line. Recent market survey reports indicate erosion of its clientele. Feedback taken from customers suggest that the company's products were not of good quality. ASPL is concerned because its competitors have been able to achieve zero defect performance in terms of nil sale returns on account of quality and nil subsequent warranty cost. Therefore, the competitors enjoy huge customer loyalty.

To satisfy its customers, the company ASPL wants to improve its product quality.

Consequently, it has decided to undertake Six Sigma study of its operations.

Below is the additional information given about ASPL's operations:

Yearly sales of electronic components are 25,000 units at Rs.20,000 each. Of these, 1% sales are returned due to quality issues. These are scrapped and a replacement is made by the company. In addition, each product is under warranty for one year after sale. If a claim is accepted under warranty, service and replacement of parts is done free of cost.

Current yearly warranty claims (these are separate from sales returns), which is also representative of the average yearly warranty claims, amount to Rs.30,00,000 per annum. Quality control check and inspection is carried out directly at the assembly line. There is no quality check done at any other point in the entire work flow. Total time spent on inspection is 2,000 hours in a year which costs the company Rs.10,00,000 per annum. Inspection leads to 10% rejection i.e., 2,525 units. These units require only one cycle of rework, after which they are ready for sale. Rate of rework in the units rejected on inspection at the assembly line is 5 units in 1 hour. Cost of rework is Rs.6,250 per hour.

The variable cost of electronic component is Rs.12,500.

The Six Sigma team as part of its study found that rework on products was mainly due to the following reasons:

- (1) Assembly line workers, including new hires, learnt on the job as to how to assemble the input material to produce the final electronic component. This lead to many errors due to lack of proper standardized training. Therefore, on account of these errors, the entire electronic component has to assembled again.
- (2) Sub-standard quality of raw material is detected on inspection only at the assembly line. By this time, the defective material is already fitted into the final electronic component. Therefore, entire component has to be reworked upon to replace the defective raw material input.
- (3) Machines are outdated and are not entirely suitable for the current production methodology.

**Proposed solutions to tackle these issues are as follows:**

- (1) Provide *training to assembly line workers* to train them on the production methodology. This training is expected to standardize work flow, thereby reducing errors. Such training

programs will be held regularly to update the workers on new methodologies. These programs can also serve as employee feedback sessions about the actual working conditions at the assembly line. This two-way communication can improve and streamline the production process. Brainstorming can help detect or give heads up about potential problems in the production process. Total training hours in a year are expected to be 5,000 hours, costing Rs.1,000 each hour.

- (2) Currently poor quality of raw material input is detected only on inspection at the assembly line. This results in wastage of resources in terms of material, time and capacity. In addition to the existing inspection at the assembly line, a *new functional area for quality planning and improvement* is proposed to be set up. At the time of procurement, the department will determine the appropriate quality of raw material input, ensure that suppliers supply material as per these requirements as well as suggest alternatives that can help improve product quality. By ensuring quality of raw materials at the beginning of the production process, wastage of resources is reduced, if not can be eliminated. Cost of setting up such a facility will be Rs.1,50,00,000. In addition to this facility, inspection will continue at the assembly line. This ensures complete quality check during the entire production cycle. At the same time, due to the introduction of this new functionality for quality control, the pressure on resources for inspection at the assembly line would reduce.
- (3) Current machines should be replaced entirely with *new machines*. Old machines can be sold for negligible amount as scrap. New machines would cost Rs.3,60,00,000 having a life of three years.

Implementation of the above three solutions can have the following impact:

- Rework of products can be entirely eliminated.
- Sale returns will reduce from 1% to 0% due to better quality of products.
- Yearly warranty claims will reduce from Rs.30,00,000 to nil per annum
- With the introduction of the new facility, time required for inspection at the assembly line would reduce from 2,000 hours to 1,200 hours. Cost of inspection to do quality check at the assembly line would reduce from Rs.10,00,000 per annum to Rs.600,000 per annum.
- Due to better quality, ASPL can build better reputation with the customers which can further yield additional sales of 5,000 units per year.

## Required

You are the management accountant at ASPL. AS part of the six Sigma project implementation team, you are requested to EVALUATE proposals suggested by the Six Sigma team. The team Has used the DMAIC technique to assess quality improvements.

## Solution:

DMAIC technique analyses operational problems by assessing them in the following phases (1) Define; (2) Measure; (3) Analyze; (4) Improve and (6) Control.

*(1) Define the problem, project goals and customer requirements:* Poor quality leading to erosion of clientele.

Customers feedback indicates that product quality requires improvement. Dis - satisfaction is reflected in the form of sale returns and warranty claims. Competitors have no sale returns on account of poor quality as well as no warranty claims on its products. Hence, in an environment where 100% quality can be achieved, **ASPL is facing quality issues**. This is the problem to be addressed. Failure to do so would result in loss of clientele, leading to a possibility of going out of business. The goal of the project is to identify what is the sigma level at which the company is operating and to suggest improvements to the production process it achieve 6  $\sigma$  level of operations.

*(2) Measure current performance:* Indicators of poor quality to find out what is the sigma level of the current operations?

Current performance focusing on quality can be determined based on the cost incurred in the following phases:

**(a) Sale returns:** Sale returns are 1% of total sales. Gross sales are 25,000 units per annum at selling price of Rs.20,000 each, therefore having a value of Rs.50,00,00,000. Sales returns @1% amount to Rs.50,00,000 that represent the return of 250 units per annum. The cost of poor quality on account of these sale returns is the variable cost of the product Rs. 12,500 per unit. This is an avoidable cost amounting to Rs.31,25,000 per annum that is 0.63% of sales (Rs.31,25,000/Rs. 50,00,00,000).

**(b) Warranty claims:** Warranty is an undertaking given by the company to repair the electronic component free of cost if defect occurs within a specific period of time. Hence, when the customer files a claim that is accepted by the company, it means that there has been an issue with the quality of the product. This is a liability/cost that should ideally be kept minimum, if not nil like ASPL's competitors.

Warranty for the product is for one year from the date of sale. Warranty claims this year is Rs.30,00,000, which is given to be representative of the average yearly warranty cost. Therefore, currently this cost amount to 0.60% of sales (Rs.30,00,000/Rs.50,00,00,000).

Summarizing sale returns and warranty claims alone represent 1.23% of current sales. Considering the current percentage of deficiency, the **company is operating between 3 $\sigma$  and 4 $\sigma$  level**. The rest of the industry is able to achieve 6  $\sigma$  level of operations. At zero defective production, there are no sale returns on account of quality and no warranty claim costs. Therefore, is **tremendous scope for improvement in ASPL's operations**.

**(3) Analyze:** What is the cause of poor quality? What is the cost of resources focused on quality?

Six sigma team studied the production process in detail. Replicating the issues detailed in the given problem:

**(a) Problem 1:** Assembly line workers, including new hires, learnt on the job as to how to assemble the input material to produce the final electronic component. This led to many errors due to lack of proper standardized training. Therefore, on account of these errors, the entire electronic component has to be assembled again.

**(b) Problem 2:** Sub-standard quality of raw material is detected on inspection only at the assembly line. Inspection leads to 10% rejection of units. By this time, the defective material is already fitted into the final electronic component. Therefore, the entire component has to be reworked upon to replace the defective raw material input.

**(c) Problem 3:** Machines are outdated and are not entirely suitable for the current production methodology.

**The above factors result in rework on products, an internal failure cost, that lead to wastage of material, resources, and capacity.**

Two costs incurred to focus on quality are cost of inspection and cost of rework, 2,525 units are reworked upon. Time required to rework 2,525 units per year =  $2,525 \text{ units} / 5 \text{ units per hour} = 505 \text{ hours per year}$ . Cost of rework is given to be ₹6,250 per hour. Therefore, total cost of rework per year = ₹31,56,250.

Inspection cost for 2,000 hours at the assembly line is given to be ₹10,00,000 per annum.

Therefore, total cost of resources currently incurred for quality = ₹41,56,250 per annum.

(4) **Improve:** Reduce errors and improve quality of the product.

While cost of resources currently incurred for quality is only 0.83% of sales (₹41,56,250/₹50,00,00,000), a detailed analysis brings forth many qualitative aspects that ASPL needs to be addressed. If its competitors are able to achieve excellence in quality, so must ASPL, in order to remain in business. Therefore, following are the proposals that can provide solutions to the problems referred to above:

**(a) Solution to Problem 1:** Periodic training sessions to educate new hires and update workers in the assembly line on the latest techniques in production. Standardized and informed working will lead to lower errors and thereby improving product quality. Cost per year =  $5,000 \text{ hours yearly training} \times ₹1,000 \text{ per hour} = ₹50,00,000$ .

**(b) Solution to Problem 2:** Delay in detection of poor-quality input can be resolved by streamlining the work flow. New function for quality planning and improvement, at the beginning of the process helps in early detection, without wastage of resources. Cost per

year for introducing this functionality = ₹1,50,00,000.

**(c)Solution to Problem 3:** Replace old machines with newer ones. Machine upgrade will align the resource with the production requirements. This reduces chances of errors in the production process.

Cost of procurement: ₹3,60,00,000 has a life of 3 years. Therefore, annual depreciation is ₹1,20,00,000.

(d) Consequences of implementing these proposals, as given in the problem, can result in the following improvements:

- (1) Rework of products can be entirely eliminated.
- (2) Sale returns will reduce from 1% to 0% due to better quality of products.
- (3) Yearly Warranty claims will reduce from ₹30,00,000 to nil per annum.
- (4) With the introduction of the new facility, time required for inspection at the assembly line would reduce from 2,000 hours to 1,200 hours. Cost of inspection at the assembly line would reduce from ₹10,00,000 per annum to ₹6,00,000 per annum.
- (5) Due to better quality, ASPL can build better reputation with the customers which can further yield additional sales of 5,000 units per year.

When the company is capable to achieve points (i), (ii) and (iii) milestones, it would have achieved 6  $\sigma$  operational level. The cost of quality report summarizes the above discussion:

### Cost of Quality Report

Cost of Quality Component	Before Improvements		After Improvements	
	Current Cost ₹	% of Sales	Projected Cost ₹	% of Sales
<b>Preventive Cost</b>				
Training (5,000 hrs. × ₹1,000 per hour)	xxx	xxx	50,00,000	0.83%
Quality Planning and Improvement	xxx	xxx	1,50,00,000	2.50%
<b>Appraisal Cost</b>				
Inspection Cost	10,00,000	0.20%	6,00,000	0.10%
<b>Internal Failure Cost</b>				
Rework	31,56,250	0.63%	xxx	0.00%

<b>External Failure Cost</b>				
Sale Returns	31,25,000	0.63%	xxx	0.00%
Warranty Claims	30,00,000	0.60%	xxx	0.00%
<b>Total Cost of Quality</b>	1,02,81,250	2.06%	2,06,00,000	3.43%
Yearly Sales	50,00,00,000		60,00,00,000	
<b>Total Cost of Quality / Sales (%)</b>	<b>2.06%</b>		<b>3.43%</b>	

(e) Cost of quality is 2.06% of sales of which 1.23% alone is external failure cost. This has an impact on the customer experience and can erode customer base. By implementing the six-sigma team's proposal, this external failure cost on account of sale returns and warranty costs, can completely eliminated. Internal failure cost can also be eliminated. The increase in cost of quality proposed to be made would be a preventive cost to avoid failure of quality. The company should focus on preventing the error such that it ensures that product is of good quality when it reaches the customer at the very first instance. This enhances the customer experience and therefore eliminating the scope for external failures like sales returns and warranty claims. Better quality can yield further sales of 5,000 units per year. Therefore, an increase in spending on quality measures is justified since it not only yields significant improvements to quality but also brings in more sales orders.

**Improvement to the financial position of the firm is summarized below:**

<b>Particulars</b>	<b>Amount ₹</b>
Improved Contribution Margin (Ref. note I)	3,75,00,000
Elimination of Goods Replacement	31,25,000
Elimination of Warranty Claims	30,00,000
Elimination of Rework	31,56,250
Savings in Inspection Cost	4,00,000
Total Benefit ... (A)	4,71,81,250
Additional Costs Incurred	
Training	50,00,000
Quality Planning and Improvement	1,50,00,000
Increase in Fixed Cost (Yearly Depreciation of Upgraded Machines)	1,20,00,000
Total Additional Cost ... (B)	3,20,00,000
Net Benefit ... (A) - (B)	1,51,81,250

Note I: Incremental Contribution:

Sales have increased by 5,000 units. Selling Price is ₹20,000 per unit while variable cost is ₹12,500 per unit. Contribution is ₹7,500 per unit.

**Conclusion: Six Sigma team’s proposals are focused on preventing the error from occurring. Consequently, quality improves, sale improves and thereby can yield a net benefit of ₹1,51,81,250 per year to the company.**

(5) **Control:** Maintain quality at 6σ level and keep the production facilities updated.

(i) Training sessions with workers can serve as two-way communication platform to detect other problems that can be resolved in more timely manner. Inputs received can also be used to improve the production work flow as well.

(ii) New function of quality planning and improvement can help the company be better informed about the latest production methodologies.

(iii) Updated machines are better equipped to handled changes in the production process since they are built with the latest technology. ASPL should do a continuous assessment of the state of its machines and upgrade them when necessary.

**DMAIC is a Methology of Six Sigma used to Improve existing business Process**

**SIX SIGMA (BASIC CONCEPT For Case Study)**

**DMAIC**

<b><u>Define the Process</u></b>	<b><u>Applicable for almost all case study (All company, service Provider)</u></b>
(समस्या क्या है) (जब तक समस्या सही से explain नहीं होगी तो हल कैसे निकलेगा)	What is the Req. of Customers? Satisfaction i.e., on time delivery (undamaged goods) & Quality Goods. why returns forms customers are Increasing, it will increase cost, dent on branding as well as adverse effect on financial performance Six Sigma focus on defining the objective & opportunity to improve by: - (c) Discussion with staff (d) Customer feedback/ complaint Dissatisfaction is reflected in the form of sales return & Warranty claim. Competitors have no sales return, No warranty claim.
2: - Measure	Collect the statistical data to measure the impact of various process on customer satisfaction. As Different process has different impact

(Where we stand at present)

on customer satisfaction.  
 (What is the level of six sigma of current operation)  
 Maximum Impact on customers satisfaction

	Qty	Rate	Amount (₹)
b) Sales	25000	@20,000	50 crore
Sales Return i.e., 1% of Sales	250	@20,000	= 50 Lakh
a) VC (Cost of Poor Quality) Avoidable Cost	250	12500	31,25,000
VC as % of Sale a/b = d	0.63 % of sales		
Warranty Claim (Cost of Rectification)	C) 30 Lakh	i.e., 0.6% of Sales (c/b) = e	
Total d+C	0.63% + 0.6%	=1.23% of sales	
Company Operates 3 σ & 4 σ			

3: - Analyze  
 (Detect the root cause of Problem so as to improve that Problem)

Detect the root cause of Problem: - Eg.

<u>Problem</u>	<u>Possible cause</u>
1: - Assembly line workers (in efficiency): -	New workers, Lack of proper standardized training.
2: - Substandard Raw material used: -	Inspection only at assembly line leads to 10% rejection unit, entire component has to be reworked.
3: - *Machine: -	Outdated, not suitable for current production methodology.

**Improve**

Experts take corrective measure, Recommendations to improve process in consultation with staff/based on facts, to minimize/eliminate the root cause of problem.

<u>Problems</u>	<u>Suggestions</u>
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	1: - Assembly line workers (in efficiency): -	Regular training session, update for new hires, standardized working, cost of training 5000 hours X 1000 ₹ per hour = 50 Lakh.
	2: - Substandard Raw material used: -	New function for quality planning & improvement at the beginning of process, stream lining the work flow, cost per year ₹150 Lakh.
	3: - *Machine: -	Replace old machine with the new one. Cost of new machine ₹360 Lakh, Life 3-year, depreciation ₹120 Lakh per year.
<b>Control</b>	<p>Monitor the performance ongoing basis</p> <p>If sales return &gt; Target level i.e. No Improvement, report to responsible person &amp; Revise/ change the procedure of DMAIC.</p> <p>If Sales Return &lt; Target i.e., improvement is achieved, present process should be continued.</p>	

### Statement of Cost benefit

<b><u>Incremental Contribution</u></b>	(₹)
Sales (Additional) 5000 unit @ 20000	₹ 10 crore
Less: - Variable Cost 5000 unit @ 12500	₹ 6.25 crore
	<b><u>(A):- ₹3.75 crore</u></b>
<b>SAVINGS</b>	(₹)
I: - Inspection cost of Assembly line (10 Lakh – 6 Lakh)	₹4 Lakh
II: - Rework cost	₹31,56,250
$\frac{2525 \text{ unit}}{5 \text{ huors}} = 505 \text{ hours X } 6250 \text{ Per hour}$	

III: - Sales Return (Reduce) 25000-unit X 1%	
25000-unit X 1%	₹31,25,000
= 250-unit X 12500 p.u	
(VC) Warranty Claims	₹30,00,000
iv: - Savings in costs	<b><u>(B): - ₹ 96,81,250</u></b>
<b>Less: - Incremental Cost</b>	<b>(₹)</b>
A: - Training cost	<b>₹50 Lakh</b>
5000 hours X 100 per hour	
B: - Quality Planning & Improvement	<b>₹150 Lakh</b>
C: - Additional Depreciation	<b>₹120 Lakh</b>
	<b><u>(c): - ₹320 Lakh</u></b>
<b>Net benefit A+B-C =</b>	<b>₹151,81,250</b>

**Conclusion:** - six Sigma team's proposals are focused on preventing the error from occurring. Consequently, quality improves, sale improves and thereby can yield a net benefit of ₹1,51,81,250 per year to the company.



## CASE STUDY No:- 2 (Six Sigma)

CPT Limited manufactures furniture made of MDF board for domestic use and plywood for commercial use. It has three divisions – Furniture Division, Plywood Division and Retail Division.

The furniture division purchases raw materials from external suppliers and performs all manufacturing and packaging operations. All

sales of furniture are made through retail division which has 120 retail stores in India as well as through its own website. Furniture is sold in boxes for customers to assemble themselves. About 20% of the furniture sold by CPT limited is purchased already packaged from other

manufacturers. All deliveries are outsourced through a third-party distribution company.

CPT Limited's objective is to maximize shareholders' wealth by producing new model functional furniture and plywood board at low cost. The CEO is concerned about increasing levels of returns of furniture made by the customers and increasing number of customers complaining on online forums about furniture purchased from CPT Limited. Not a single case of return of plywood board was reported in past three years.

Considering the impact of returns of its products, the CEO has approached you as a performance management expert to help the company in implementation of six sigma technique to reduce the number of products returned and define customers' requirements and measure existing performance of the company.

A team of managers has been recently trained in six Sigma. The returns data are compiled every six months along with the key performance indicators (KPIs) for customer satisfaction. The last compilation indicates that 92% of customers were satisfied with the manufacturing quality of furniture.

The following reasons are given by customers while returning furniture:

Category	Reasons for return of Furniture	% Responses
1	Difficult to assemble or parts missing	48%
2	Goods arrived damaged	13%
3	Goods were not as described or were defective	27%
4	Goods were of poor quality or no longer wanted	10%
5	Arrived late	2%
	Total	100%

Since last year the plywood division has also started to manufacture MDF board on pilot project basis in small quantity. Based on the feedback from the market the management of CPT Limited decided to manufacture MDF board at large scale in plywood division in the forthcoming year. CEO has also decided that for manufacture of Furniture, MDF boards should be purchased from plywood division. Details of Furniture and Plywood Divisions are given below:

**Furniture Division:**

35,000 MDF boards of standard size will be needed in the next year. External suppliers could supply at Rs.800 each.

**Plywood Division:**

It has the capacity to produce a total of 60,000 MDF boards of standard size per year. Budgeted details for the forthcoming year

are as follows:

- Budgeted sales volume – 60,000 units
- Selling price per unit of external sale – Rs.850
- Variable cost per unit of external sale – Rs.770

The variable cost per unit will be Rs.20 per unit lower in case of internal sale, due to cost saving in distribution and packaging. Maximum external demand for MDF boards is 30,000 units per year.

Required:

- I. Advise the CEO how six sigma could be implemented using DMAIC methodology so as to reduce sales returns from customers (10 Marks)
- II. Advise with the help of suitable calculations, the number of MDF boards that plywood division should internally supply to furniture division in order to maximize the group profit (6 Marks)
- III. Recommend the transfer price at which the internal sales should be made (4 Marks)

**Answer:-Part I:**

The DMAIC process is a technique used to implement six-sigma to improve existing processes and is split into five phases as described below.

- **Define the process:** The CEO is concerned that the increase in returns from customers is increasing costs and threatens to affect the company's brand. Six sigma focuses closely on the requirements of the customer and it is important to be clear exactly what customers' requirements are and, in this case, specifically why products are returned. The objective of the project needs to be clear, in this case to reduce the number of customer returns. Customers will expect certain minimum requirements from the manufacturing and packaging process. Customers' perceptions of quality should correspond to the price paid, though different customers will have different expectations of this. Customers may be particularly pleased with furniture which is delivered early or at a time especially convenient to them, or which is robust, durable and 'well-made'. While products which significantly exceed customers' expectations will enhance the company's brand, it may also indicate a quality of manufacture which is too high and allow company to reduce manufacturing costs while still having mainly satisfied customers.
- **Measure the existing process:** The current returns figures do give some data to as to why products are returned, but its usefulness is limited as it is unclear which of the categories relates to defective manufacture, and which relate to activities of other divisions. The

ambiguity of the data and category definitions will need addressing to enable the process to be measured effectively. Returns in Category 1 could be because the goods were not manufactured or packed properly in the manufacturing division, but could also be due to poor design, customers losing components or simply being unable to assemble furniture. Damaged goods in Category 2 probably do not arise because of defective manufacturing either, though customers may wrongly categorise defective goods as damaged. For the other categories it is less clear. Though goods may become damaged by the distribution company, it seems that only a small number of returns relate directly to them. Returns in Categories 3 and 4 could be due to defective manufacture or if the customer had simply changed their minds and no longer wanted the product. In Category 3, the identification of 'defective' items is too broad. Returns in Category 5 which arrived late are clearly not due to manufacturing defects and as this causes only 2% of returns, is relatively insignificant. Currently 20% of company's sales are of products from other manufacturers. There is no indication from the data given how many of the returns relate to these products, nor of the total number of returns relative to the number of items sold. Therefore, the existing data are insufficient to reliably measure existing performance and take no account of inputs such as raw materials. Only items which customers value should be measured. The CEO has suggested more detailed data are required, for example, on overall customer satisfaction with the manufacturing, but this is at 92% which already seems high and there is little point in incurring costs to measure what customers are already satisfied with. In the context of the six-sigma project, there is little that can be done to improve this particular area and such items should not be measured.

- **Analyze the process:** This stage is where the root causes of the problems are identified. Additional information may be needed, for example, to analyse customer returns by type of product, by country of sale or with a clearer definition of what is meant by 'defective'. By doing so, company may identify areas of the business where customer returns are particularly high and so be able to focus on these.
- **Improve the process:** At this stage the proposals for improving the process are implemented and availability of resources and likely costs of making the improvements need to be carefully considered. Company may need to consider which aspects of the production or packaging process could be improved, for example, by better maintenance or calibration of machinery. Additional training of staff may also be required.

**Control:** This is the on-going monitoring that the reduction in customer returns due to defective manufacturing is being maintained. Reporting on the number of returns may be done by exception if they reach a particular level. In CPT Limited, it seems likely that the data on customer returns used to manage this process will need to be redesigned to make it clearer

in which responsibility centre the problems arise. The ongoing monitoring may indicate that some of the earlier stages in the DMAIC process need to be revisited.

Part 2 and Part 3: Decision on number of MDF boards to be transferred and fixation of transfer price:

Minimum Transfer Price	Variable cost + opportunity cost	
Maximum Transfer Price	External purchase price <u>±</u> change in cost	

**Calculation of Minimum Transfer Price:**

- Plywood division currently has capacity of 60,000 MDF boards and it has external demand for 30,000 boards. Therefore, it has idle capacity of 30,000 boards
- Transfer price for first 30,000 boards = Variable cost = Rs.750 [There will be no opportunity cost; Additionally, variable cost per unit is Rs.20 lower and hence the same would be Rs.750 per unit]
- Transfer price for balance 5,000 boards = Variable cost + Opportunity cost = Rs.750 + Rs.80 = Rs.830 per unit

**Calculation of Maximum Transfer Price:**

- External suppliers are currently supplying at prices of Rs.800 per unit and hence the maximum transfer price by Furniture Division would be Rs.800 per unit

**Decision:**

- Comparing the minimum and maximum transfer price, we can conclude that the company should go for transfer of 30,000 boards. The transfer price for 30,000 boards can be fixed between Rs.750 per unit to Rs.800 per unit
- Balance 5,000 boards cannot be transferred as minimum transfer price of Rs.830 per unit exceed maximum transfer price of Rs.800 per unit. This would indicate that a transfer is not feasible.

**SUMMARY**

**DMAIC is a Methology of Six Sigma used to Improve existing business Process**

**SIX SIGMA (BASIC CONCEPT For Case Study)**

**DMAIC**

<b><u>Define the Process</u></b>	<b><u>Applicable for almost all case study (All company, service Provider)</u></b>
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<p>(समस्या क्या है) (जब तक समस्या सही से explain नहीं होगी तो हल कैसे निकलेगा)</p>	<p>What is the Req. of Customers? Satisfaction i.e., on time delivery (undamaged Furniture) &amp; Quality Goods. Properly packed in box (Min req in manufacture &amp; Packing Process) why returns forms customers are Increasing, it will increase cost, dent on branding as well as adverse effect on financial performance Six Sigma focus on defining the objective &amp; opportunity to improve by: - (e) Discussion with staff (f) Customer feedback/ complaint Objective: - To reduce the no. of customer returns.</p>																		
<p>2: - Measure (Where we stand at present)</p>	<p>Collect the statistical data to measure the impact of various process on customer satisfaction. As Different process has different impact on customer satisfaction. (What is the level of six sigma of current operation) Sales Return of Furniture (Types)</p> <table border="1"> <thead> <tr> <th></th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Category-1:- Difficulty in Assembling /part missing</td> <td>48</td> </tr> <tr> <td>Catergoty-2, 3 &amp; 4 :- Damage/defective/Poor quality</td> <td>13, 27 &amp; 10 = 50</td> </tr> <tr> <td>Category-5:- Late arrival</td> <td><u>2</u></td> </tr> <tr> <td></td> <td><u>100</u></td> </tr> <tr> <td colspan="2"><b>Sales Return</b></td> </tr> <tr> <td>Country Wise</td> <td>XX</td> </tr> <tr> <td>Product Wise</td> <td>XX</td> </tr> <tr> <td></td> <td>_____</td> </tr> </tbody> </table>		%	Category-1:- Difficulty in Assembling /part missing	48	Catergoty-2, 3 & 4 :- Damage/defective/Poor quality	13, 27 & 10 = 50	Category-5:- Late arrival	<u>2</u>		<u>100</u>	<b>Sales Return</b>		Country Wise	XX	Product Wise	XX		_____
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Category-1:- Difficulty in Assembling /part missing	48																		
Catergoty-2, 3 & 4 :- Damage/defective/Poor quality	13, 27 & 10 = 50																		
Category-5:- Late arrival	<u>2</u>																		
	<u>100</u>																		
<b>Sales Return</b>																			
Country Wise	XX																		
Product Wise	XX																		
	_____																		
<p>3: - Analyze</p>	<p>Detect the root cause of Problem: - Eg.</p>																		

(Detect the root cause of Problem so as to improve that Problem)	<b><u>Problem</u></b>	<b><u>Possible cause</u></b>
	Category 1:- Difficulty in Assembling /part missing	Poor design, No proper marking, Defect in packing (not user friendly)
	Category 2, 3 & 4:- Damage /defective/ Poor quality	Lack in manufacturing, No preventive maintenance.
	Category 5:- Late arrival	Deficiency in services.
	Country (Particular) has high % of Sales return: - Dealer/business partner is not good. (Defective can be rectified but damage goods can't be rectified, must disposed)	
<b>Improve</b>	Experts take corrective measure, Recommendations to improve process in consultation with staff/based on facts, to minimize/eliminate the root cause of problem.	
	<b><u>Problems</u></b>	<b><u>Suggestions</u></b>
	Category 1:- Assembling / part missing	<b>Adequate marking</b> , Packing could be improved by Training to staff (Inspection before delivery) Proper designing.
	Category 2,3 & 4:- Damage /defective / Poor quality	Apply Preventive maintenance, Timely repair, Training to existing staff.
	Category-5:-Late arrival	Improve delivery system.
<b>Control</b>	Monitor the performance ongoing basis If sales return > Target level i.e. No Improvement, report to responsible person & Revise / change the procedure of DMAIC. If Sales Return < Target i.e., improvement is achieved,	

present process should be continued.

- Cost of Improvement should be compared with benefit to be achieved -cost benefit analysis.

(ICAI-Gujrat Paper, 2019)



### CASE STUDY No:- 3 (Six Sigma)

**Derby Grey** is leading manufacturer of leather luggage bags (up to 62”) for the style conscious people around the globe. It is made up of two independent divisions in New Delhi. The division ‘Mx’ performs all manufacturing and packaging operations. All sales are made through the division ‘Rx’ which has 11 retail stores in New Delhi, as well as through Derby Grey’s own well-

developed website. Derby Grey has also retail operations in Dubai, Kuala Lumpur, Bangkok as well as in Singapore. These overseas businesses operate as independent subsidiaries within the Division 'Rx'.

Derby Grey revolutionized the industry by offering cheap but stylish luggage bags. Derby Grey is able to keep its prices low by offering a very basic level of service. Luggage Bags are sold in boxes for customers to assemble themselves and all deliveries are made through third party distributor 'Costa Cruise'.

Dr. Philips (Managing Partner) is bothered about increasing sales returns and massive complaints about product purchased from Derby Grey on social media. With this concern, Dr. Philips has appointed you as performance management expert to help the firm to execute six sigma technique to reduce number of sales returns and to evaluate firm's existing performance. Dr. Philips has heard that Six Sigma analysis involves large quantities of data. Dr. Philips stated—"I'm not confident on our current IT systems. I doubt whether system would be able to identify the required data related to cutting, preparation, closing, lasting etc. These manufacturing sub divisions may be the root causes of the problem. Further, quarterly compiled sales return data has not enough detail. We may need to do more analysis on customer satisfaction and manufacturing quality."

You have been given access to feedback given by customers for returning goods to measure existing performance in this area (refer below):

Difficult to assemble or pieces missing (47%) – Bags were not as demanded (24%) – Poor Quality (19%) –Arrived damaged (9%) – Arrived late (1%)

Required

ADVISE Managing Partner on Six Sigma implementation to reduce number of sales return using DMAIC method.

### **Solution**

DMAIC is a methodology of Six Sigma used to improve existing business process. It is advisable to Managing Partner to execute following phases of DMAIC–

Define the process

This phase emphasizes exactly *what customer's requirements are?* In this case focus is precisely on *why bags are returned*. The objective of the process needs to be clear as in this case to *reduce the number of customer returns*. Customers expect certain minimum requirements from the manufacturing and packaging process, for example, that the bags are properly packed in boxes.

They also expect the goods be delivered undamaged within a reasonable time and delivered at the time and date when committed. Further, customer's perceptions of quality should coincide with the price paid, though different customers may have different expectations.

Measure the existing process

This phase measure the process to determine existing performance. In this case, the sales

returns figures do not show complete picture as to why customers return bags, which of the class belong to 'poor packing', which one belong to 'defective item', which one belong to 'activities of other sub divisions' etc. The *ambiguity of the data and classification of definitions will need to be addressed* as to enable the process to be measured effectively.

## Analyze

This phase *detects the root cause* of the problems. Possible root cause of sales return are as follows:

Difficult to assemble or pieces missing (47%) – Returns could be because the bags were not manufactured or packed properly in the 'Mx' division, but could also be due to poor design, customers losing pieces or simply being unable to assemble bag.

Bags were not as demanded and of poor quality (43%) – Returns could be due to defective manufacture or if the customer had merely changed their minds and no longer required the bag. In 'bags were not as demanded', the identification of 'defective items' are too vast. Arrived damaged (9%) – It may be that customers wrongly classified defective bags as damaged. Though bags may become damaged by the 'Çosta Cruise', only a small number of returns relate directly to them.

Arrived late (1%) – Reasons of arrived late could be either 'Costa Cruise' could not make delivery on time or 'Mx' division could not complete order on time and this causes only 1% of returns, is relatively insignificant.

Further, information could be analyzed, like country wise sales returns, product wise sale, or with *more clear definition of 'defective items' from customer's perspective*. By doing so, firm may easily get information related to areas of the business where sales returns are high and hence be able to focus on.

## Improve

In this phase, recommendations are made to *minimize or eliminate the root cause* of the problem and then those recommendations are implemented to improve the process in a systematic manner. Derby Grey is required to *consider aspects of production or packaging which could be improved*, for example, timely repair and maintenance of equipment or training to existing staff etc. Further, *availability of resources and likely costs of making the improvements* need to be carefully considered.

## Control

Here control means *maintaining the improved performance and future performance*. Derby Grey would be required to monitor the performance ongoing basis. If sales return reach above particular level, it should be reported to responsible person and he should act immediately.

In addition, Derby Grey need to redesign IT system in such a way so that it can provide required detail. Since this is continuous monitoring so it may also require revisiting of some phases in DMAIC.

# SUMMARY

**DMAIC is a Methology of Six Sigma used to Improve existing business Process**

**SIX SIGMA (BASIC CONCEPT For Case Study)**

## DMAIC

<b><u>Define the Process</u></b>	<b><u>Applicable for almost all case study (All company, service Provider)</u></b>														
	What is the Req. of Customers?														
(समस्या क्या है) (जब तक समस्या सही से explain नहीं होगी तो हल कैसे निकलेगा)	<p>Satisfaction i.e., on time delivery (undamaged BAG) &amp; Quality Goods.</p> <p>Properly packed in box (Min req in manufacture &amp; Packing Process) why returns forms customers are Increasing, it will increase cost, dent on branding as well as adverse effect on financial performance</p> <p>Six Sigma focus on defining the objective &amp; opportunity to improve by: -</p> <ul style="list-style-type: none"> <li>(g) Discussion with staff</li> <li>(h) Customer feedback/ complaint</li> </ul>														
2: - Measure (Where we stand at present)	<p>Collect the statistical data to measure the impact of various process on customer satisfaction. As Different process has different impact on customer satisfaction.</p> <p>(What is the level of six sigma of current operation)</p> <p>Sales Return of Bags (Types)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 20%; text-align: center;">%</th> </tr> </thead> <tbody> <tr> <td>Difficulty in</td> <td style="text-align: center;">47</td> </tr> <tr> <td style="padding-left: 20px;">(a) Assembling /part missing</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">(b) Poor quality</td> <td style="text-align: center;">19</td> </tr> <tr> <td style="padding-left: 20px;">(c) Arrived damaged</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="padding-left: 20px;">(d) Bags were no as demanded</td> <td style="text-align: center;">24</td> </tr> <tr> <td style="padding-left: 20px;">(e) Late arrival</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>		%	Difficulty in	47	(a) Assembling /part missing		(b) Poor quality	19	(c) Arrived damaged	9	(d) Bags were no as demanded	24	(e) Late arrival	1
	%														
Difficulty in	47														
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(c) Arrived damaged	9														
(d) Bags were no as demanded	24														
(e) Late arrival	1														

		<u>100</u>
	<b>Sales Return</b>	
	Country Wise	XX
	Product Wise	<u>XX</u>
		_____
<b>3: - Analyze</b> (Detect the root cause of Problem so as to improve that Problem)	Detect the root cause of Problem: - Eg.	
	<b><u>Problem</u></b>	<b><u>Possible cause</u></b>
	Difficulty in (a)Assembling /part missing	Poor design, No proper marking, Defect in packing (not user friendly)
	(b) Poor quality	Lack in manufacturing
	(c) Arrived damaged	Deficiency in services by Costs cruise.
	(d) Bags were no as demanded	Defect in manufacturing, not matching with order, inefficiency in staff working.
	(e) Late arrival	Deficiency in services by Costs cruise.
	Country (Particular) has high % of Sales return: - Dealer/business partner is not good. (Defective can be rectified but damage goods can't be rectified, must disposed)	
<b>Improve</b>	Experts take corrective measure, Recommendations to improve process in consultation with staff/based on facts, to minimize/eliminate the root cause of problem.	
	<b><u>Problems</u></b>	<b><u>Suggestions</u></b>
	(a)Assembling /part missing	<b>Adequate marking, Packing could be improved by Training to staff</b>

	(Inspection before delivery)
(b) Poor quality	Apply Preventive maintenance, Timely repair, Training to existing staff.
(c) Arrived damaged	Improve delivery system.
(d) Bags were not as demanded	Apply Preventive maintenance, staff Training, delivery should be match with order.
(e) Late arrival	Improve delivery system.
<b>Control</b>	<p>Monitor the performance ongoing basis</p> <p>If sales return &gt; Target level i.e. No Improvement, report to responsible person &amp; Revise / change the procedure of DMAIC.</p> <p>If Sales Return &lt; Target i.e., improvement is achieved, present process should be continued.</p>

- Cost of Improvement should be compared with benefit to be achieved -cost benefit analysis.

## CASE STUDY (Business Process Reengineering “ANI”)

ANI is a government-owned bank. The Bank has over 2,500 branches in country ‘A’ spread over all states/union territories including specialized branches. These branches are controlled through 27 Zonal Offices and 4 NBG Offices. As a government owned bank, it has usually been the first preference for customers while choosing a bank. In the last six years, the Government has permitted a number of foreign banks to operate within the country in order to solve the problem of foreign exchange shortage and open up foreign trade as an instrument to promote economic development. These foreign banks offer diverse range of services such as direct access to executive management, a single point of contact to coordinate all banking needs, appointment banking to save time, free online banking services 24/7, free unlimited ATM access etc. In contrast, ANI has very elementary information systems, covering only for internal transaction handling and accounting activities. Customers have to visit banks to carry out transactions like-checking bank balance, cash deposit and withdrawals, transferring money from one account to

another in operational hours. Often customers complain about the amount of time as the employees and clerical staff of the bank can attend only few customers at a time. Customer service evaluation has never been undertaken by ANI. Other processes, new account applications, are complex, requiring completion of many documents' formalities. Board of Directors were worried from growing popularity of new style banks. The Board of Directors of ANI has recently held meeting to discuss the shortfalls in its current services and the need to re-engineer the ANI's business processes.

## Required

ADVISE how Business Process Reengineering (BPR) can be used to improve ANI's current processes.

## Solution

BPR is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvement in critical contemporary measures of performance, such as cost, quality, service and speed. In other words, BPR is concerned with the result of the process (i.e., with those activities that add value to the process). To implement BPR, firstly, each business process of ANI needs to be divided into a series of processes. Then each business process requires be documenting and analysing to find out whether it is essential, whether it provides support to other valuable processes and whether it is adding value. Any process which does not add value or does not provide essential support to the value adding activities must be removed. Those processes that remain require to be re-engineered/re-structured so that can be *as efficient as possible*. For ANI, new technology should be introduced to improve these processes. However, ANI must ensure that the statutory compliances regarding these processes are not undermined. ANI is facing a hyper-competitive marketplace where customers expect a superior experience. BPR activities would help ANI in understanding those processes which ANI's customers value the most and remove those that are not valued. Foreign banks are offering diverse range of services such as direct access to executive management, a single point of contact to coordinate all banking needs, appointment banking to save time, free online banking services 24/7, free unlimited ATM access etc. Clearly these are valuable business processes valued by the customer. ANI should incorporate all these facilities in their banking processes to enhance customer satisfaction and service level.

Opening of new accounts in ANI is complex processes since it requires multiple forms to be complied with. Through BPR, ANI would analyse the whole process and identify the need for only one form that contain all of the necessary customer information. Further, it is also possible to initiate opening of new account through the development of an online application form on ANI's website. Online entry would remove the possibility of forms being lost or incorrect, again enhancing customer satisfaction since customers need not to visit ANI's branch to open account. There should also be online processing authentications/validations as to ensure that data fields are correctly filled by customers that would result in error reduction. This would also remove unnecessary staff activities in checking and re-processing forms.

It is likely that BPR may increase costs in short-term as investment in technology. However, this would also reduce substantial levels of manual activities and processes thereby providing speedy services to customers. In long term, this would result in high levels of efficiency, profitability and better levels of customer satisfaction and retention.



**CASE STUDY: - (Business Process Re- engineering)**

ANA is one of Country “I” stop footwear companies and other equipment. Since its foundation in 1988, ANA has been one of the all-inclusive footwear brands that is committed to nurturing the youth across the world through sports to contribute to society. Over more than three decades, the company inherits its value and provides own products while capturing the changes in the social environment. It’s state-of-the-art production facilities are located strategically across the Country “I” and Produces all kinds of footwear. ANA is best known for its high ethical standards towards its workers, suppliers and the environment and voluntarily publish CSR report every year.

**Organizational Structure and Footwear Market**

ANA is organized into conventional functional departments such as procurement on order basis, sales and finance, most of which have their non-reliable excel sheet-based systems for planning and reporting. Consequently, it often fails to generate accurate, timely and consistent information to monitor its own performance, thus company faces failures in achieving the performance and delivery targets set by retail customers.

In Country “I” footwear market is competitive and Seasonal Retailers, who are ANA’s customers, for footwear they have two main demands, they want—

- (i) Footwear at lower prices to pass it on to consumers.
- (ii) Suppliers to meet performance and delivery targets relating to lead times and quality.

In order to comply with the retailer’s demands, ANA’S competitors have discontinued all their own manufacturing facilities and outsourced all production to suppliers, who have much larger production lines and lower costs. To reduce the shipment cost over distances, competitors have invested in advanced procurement software to consolidate orders so that each 40-foot shipping container gets fully loaded. Purchase invoice processing in also automated via the integration of information systems into the supplier’s software.

**Proposal of Outsourcing**

In order to mitigate costs, it has been proposed to outsource the manufacture of footwear, to a Chinese Supplier 3,750 Km away. A comparison of the average cost of manufacturing and the cost of outsourcing footwear is given below-

Particulars	Manufacturing	Outsourcing
-------------	---------------	-------------

Average manufacturing cost per pair	BND625	---
Purchase cost per pair	---	CNY28

**Notes: -**

1. Country “I” is home currency is the BND.
2. Exchange Rate 1 CNY=18 BND.
3. In addition to the purchase cost from the supplier, ANA will be subject to pay for shipping costs at the rate of BND 40,000 for each large, standard sized shipping container, regardless of the number of units in it. Each container contains 5,000 pairs when fully loaded.
4. Custom tariffs are expected to change soon, Footwear imports into ANI’s home country might be subject to 10% basic custom duty (plus 1% social welfare surcharge on duty) on the assessable value of imports excluding shipping costs.

Therefore, to implement the proposal restructuring of functional departments into multidisciplinary teams are needed to serve major buyer accounts. Each team is required to perform all activities, related to the buyer account management from order taking (Sales order) to procurement to arranging shipping and after sales service. Team members dealing with buyers will work in ANA’s corporate office, while those like QC etc. managing quality and supplier audits, will work at the manufacturing site of Chinese Supplier. Teams will be given greater independence to selling prices to reflect market conditions or setting a price based on the value of the product in the perception of the customer. Many support staff will work as helper roles, or be offered new jobs opportunities overseas after the restructuring.

**EXPERT ADVICE**

Prof. WD, performance Management Consultant has advised ANA that the proposal has features of re-engineered processes and can be defined as business process re-engineering (BPR). Prof. advised for evaluating the proposal, ANA should consider software development for full front-end order entry, purchasing and inventory management solution which may be required along with ethical aspect of the proposed charges.

**Required**

- (i) **ADVISE** on information system which would be required for the reengineering.
- (ii) **ASSESS** the likely impact of reengineering on the ANA’s high ethical standards and accordingly on business performance.

**EVALUATE** how the BPR proposal can improve ANA’s performance in relation to retail customers.

**Solution:**

**Advise on Information System**

Combining several jobs into one, permitting workers to make more decision themselves, defining different versions of processes for simple cases vs complex ones, minimizing situations

when one person check someone else's work, and reorganizing jobs to give individuals more understanding and more responsibility are characteristics of re-engineer's processes.

In ANA outlays can be saved by rearranging staff into multidisciplinary teams, for example, reducing number of excess staff as different stages-cutting, preparation, finish etc. These savings can be utilized in additional costs such as investment in new information systems. Hammer and Champy stress the use of information technology as a catalyst for major changes. BPR organizes work around customer processes rather than functional hierarchies.

Presently ANA's departments have their own excel sheet-based systems for planning and reporting which is unreliable and inconsistent. They are inadequate to provide the accurate, timely and consistent data which ANA needs to meet its own performance and delivery targets. There must a shared database that should be accessible by all parts of the functional teams. This should have real time updating, so that employees in different time zones can use updated data. The database should include financial data and non-financial data, like cost information, data related to lead times and quality. Information systems must be features with all required reports like performance report, budget report etc.

In addition, ANA is required to invest in special system as advised by Prof. WD for full front-end order entry, purchasing and inventory management solution to minimize shipping costs by ensuring that the shipping containers get fully loaded and to integrate with supplier's information systems to automate purchase invoicing.

Overall, ANA must analyze that whether the benefits due to information technology are worthy.

#### (ii)Assessment of Likely Impact of Re-engineering on Ethical Standards

##### Workers

ANA is famous for its high ethical standards towards workers and staff. Because of adopting BPR proposal, manufacturing staff are likely to be unemployed. Competitors, have already shutdown their factories, these workers may not be able to find analogous jobs.

Employees who continue in work may become disappointed if they think the application of BPR to all products. This may reduce productivity, increase staff turnover or difficulties in recruiting new staff. In addition, they may also be demotivated if they are appointed in unfamiliar roles, or may not be willing to learn new skills.

Some of staff members may be motivated by the opportunity to perform new types of work, learn new skills or work outside India. This maybe enhances their individual performance.

##### Suppliers

Any association with non-ethical practices, for example, if the Chinese supplier is indulged in using non-acceptable working practices, could seriously spoil ANA's reputation for high ethical standards. This could undermine financial performance because customers may not buy its products, or possible investors might refuse from providing capital. Staff members located at the manufacturing site is responsible for suppliers' audits, which may assist to mitigate this risk.

##### Environment

ANA should consider the environmental impact of importing goods from long distances. The environmental related credentials of the Chinese Supplier are not known. Since, ANA voluntarily publishes a corporate sustainability report, any distortion in its performance on environmental issues might undermine the financial performance.

### (iii) Evaluation of BPR Proposal in relation to Retailer's Demand

#### Lower Prices

In order to sell footwear at lower prices, there is proposal to reduce costs by outsourcing production to supplier of manufacturing is BND 625.00 per unit. The cost of purchase from an external supplier is BND 512, which is BND 504 (CNY18 × BND28) purchase cost, plus BND 8(BND 40,000/5,000) Shipping cost. This 18.08% (113/625) saving is a substantial improvement in financial performance, but not a dramatic one. It may be noted that BPR is a methodology that should be applied only when radical or dramatic change is required. Further, exchange rate movements may also slash the cost saving significantly. In the near future, expected changes to international trade tariffs will increase the unit cost to CNY30.83 (CNY28.00 × 110.10%) i.e., 554.94 in BND and reduce the cost saving to just 11.21% (70.06/625).

#### Meeting Performance Targets

##### Lead times

Current lead times for customer orders are not ascertainable. Since the proposed Chinese Supplier is 3,750 Km away, consignment will take several weeks to be imported by sea. This may increase lead times substantially, although may be set off by faster production times in Suppliers plant. AS ANA's sales are seasonal, retailers may order in advance, decreasing the long lead times. In order to decrease shipping costs, shipping containers must be full, meaning that deliveries must be larger quantities.

#### Quality

ANA is already known for manufacturing high quality footwears. The quality of the new supplier's footwear needs to be checked. Any distortion in the quality of footwear will deteriorate its reputation and decrease long-term business performance since only few customers would order. Quality standards checking is more difficult while using outside suppliers, especially at long distance, than manufacturing in ANA's own factory. In BPR work is done where it makes most sense to do so. In this aspect, having employees responsible for quality checking and supplier audits (working at the manufacturing site, abroad) will assist ANA in sustaining the best supplier relationship management.



## CHAPTER 4

# Cost Management Techniques

### ENVIRONMENTAL MANAGEMENT ACCOUNTING(Summary)

#### **Question 15:** Case Scenario

Kaveri Ltd. (KL) is a manufacturer of bikes in India and it sells them in India and outside India. KL has just launched the World's smallest and most affordable bike called 'Zingaroo'. The bike is mounted with all- aluminium, single cylinder, air cooled, 99.2 cc engine. The engine makes just over 8 bhp power and 8 Nm of torque, but it stakes claim to be the fuel-efficient bike, with a claimed figure of 88 kmpl. It has been creating competition for two wheelers as none of the Indian companies as well as foreign companies, offer a bike for such a competitive price within the reach of middle-class family.

KL has adopted target costing technique in manufacturing this bike. For KL, maintaining target-price was difficult. During the designing and production process of bike, input costs increased frequently. However, KL designed various components especially for bike to maintain the target price. Though, one curiosity how this can be done in the future when input costs are bound to increase further.

Many environmentalists have opposed the manufacture of this bike, because they believe that mass production of small bike (about 2.5 lakh bike every year) will create heavy pollution. Many people believe that this small bike is not up to the safety standards due to lightweight and use of aluminium and plastic frames. The design of this bike is entirely different from that of other bikes.

This also causes a doubt that the existing bike mechanics would be able to repair or not. Durability of bike is another issue in the Indian environment. Further, performance of 'Zingaroo' more or less depends upon the condition of roads and traffic system.

After the launch of 'Zingaroo', many other national and international automobile companies are also planning to manufacture small bike which will create tough competition in near future.

#### Required:

Now you being a strategic performance analyst of KL, answer the following questions:

- (i) IDENTIFY strategy which KL has adopted for 'Zingaroo' bike?
- (ii) After adopting target costing, IDENTIFY issues and challenges faced by KL and suggest the remedial action to be taken to solve these issues?

#### **Solution:**

- (i) KL has adopted Low Cost Strategy for "Zingaroo" bike since the main purpose of

manufacturing this bike was to make it cheapest and affordable.

(ii) The issues and challenges faced by KL and their remedial action are as follows:

#### Maintaining of Target Price

'Zingaroo' bike is one of the world's cheapest and smallest bike. Maintaining target-price proved to be a big challenge for the KL since input cost of bike are bound to increase further in future. The initial value engineering may not uncover all possible cost savings. Thus, Kaizen Costing may be designed to repeat many of the value engineering steps for as long as a bike is produced, constantly refining the process and thereby stripping out extra costs.

#### Environmental Issues

Many environmentalists have opposed the manufacture of bike as they believe that mass production of small bikes will create heavy pollution since automobile pollution is already a big problem for a country like India. For this issue, 'Zingaroo' bike can be prepared based on BS emission norms. These norms restrict the pollution created by any motor vehicle.

#### Safety Issues

Since 'Zingaroo' bike is made of aluminium and plastic frames so this may also create safety issues for the customers. For such issues, KL should meet safety standards. Further, KL should make people aware that 'Safety is Primary'/'Drive Safely'.

#### Servicing/Repairing Facilities

The design of 'Zingaroo' bike is entirely different from that of other bikes. This causes a doubt that the existing bike mechanics would be able to repair or not. For such problem, creation of a good network of service center can be a solution i.e., repair center should be established on required places.

#### Durability

Durability of 'Zingaroo' bike is another issue in the Indian environment. The performance of bike more or less depends upon the condition of roads and traffic system. For such issues, type quality and hydraulic brake system should be compatible to the roads and traffic system.

#### Global Competition

After the launch of 'Zingaroo', many other national and international automobile companies are also planning to manufacture a small bike, which will be a big challenge for the KL in the near future. To face such competition, it may adopt Kaizen Costing technique. The cost reductions resulting from Kaizen Costing are much smaller than those achieved with Value

Engineering but are still worth the effort since competitive pressures are likely to force down the price of 'Zingaroo' over time, and any possible cost savings allow KL to still attain its targeted profit margins while continuing to reduce cost.



## CASE STUDY No: -1: Environmental Management Accounting

Gulf Oil Ltd., an Indian oil company, is the leading manufacturer of all streams of oil and engaged in refining (processing capacity 50 MMTPA of crude oil), pipeline transportation and marketing of petroleum products to research & development, exploration & production, marketing of natural gas and petrochemicals. The company has high-caliber employees, sophisticated technologies and leading-edge R&D. By venturing itself into the renewables and the nuclear energy, Gulf Oil has grown and evolved itself from a pure petroleum refining and marketing company to a full-fledged energy company. Due to government's new environmental policy, environmental report is mandatorily required to be submitted yearly for the prescribed industries polluting environment substantially otherwise would be penalized. Energy sector also falls in these prescribed industries. Gulf Oil has already taken initiatives to control air pollution and water pollution like use of low Sulphur fuel oil in boilers and heaters & NOx burners to minimize gas emission, network of underground sewers for segregated collection of various wastewater streams for waste water management, however while preparing and analyzing environmental report, Mr. K. Singh, CEO, is not happy with high environmental cost in terms of Waste (oily/chemical/biological sludge, scrape batteries, e-waste, chemical containers, effluents etc.) Raw Material Consumption, Water Consumption, Energy and Transportation. He raised his concern with Board of Directors and they have decided to appoint you as an environmental management accounting expert to manage environmental cost.

### Required

APPLY Environmental Management Accounting in Gulf Oil to manage environmental costs.

### **Solution:**

**(i) (a)** Environmental Management Accounting (EMA) is the process of collection and analysis of the information relating to environmental cost for internal decision making. EMA identifies and estimates the cost of environment related activities and seek to control these cost.

In Gulf Oil, during refinery operations, waste water, fugitive emissions, flue gases and solid wastes are generated. Due to this excess waste and gas emission, environmental cost rises. Scarce natural resources should be used in such a way so that their consumption is sustainably optimized. In order to cutback environmental cost, EMA can be applied as follows:

### Waste

Gulf Oil should measure, manage and monitor waste from operations in order to minimise impact on people and the environment. 'Mass balance' approach can be used to determine how much material is wasted in production, whereby the weight of materials bought is compared to the product yield. From this process, potential cost savings may be identified.

In Gulf Oil, wastes are oily/chemical/biological sludge, scrape batteries, e-waste, chemical containers, effluent etc. Waste generated in operations is either treated within the premise or disposed through approved waste treatment, storage, and disposal facility. To avoid the usage of chemical drums/containers in large quantity, separate storage tanks can be created for bulk storage of additives to reduce the drum procurement and disposal.

Further, refineries in operation should be upgraded from time to time to minimize waste.

## Water Management

Businesses pay for water twice – first, to buy it and second, to dispose of it. If savings are to be made in terms of reduced water bills, it is important for Gulf Oil to identify where water is used and how consumption can be decreased.

For water conservation, sustainable water management techniques should be adopted. In refining operation, water is mainly used in boilers and cooling units. Collective efforts should be made to optimize water consumption and maximum reuse of used water. Advanced treatment system like rain water harvesting, ultra-filtration, reverse osmosis etc. may be used for water purification for further use. This would lead to substantial reduction in intake of fresh water.

In addition, Gulf Oil staff should be alerted for water conservation through seminars, presentations, conference, awareness campaigns.

## Energy

Often, energy costs can be reduced significantly at very little cost. Environmental Management Accounts may help to identify inefficiencies and wasteful practices and, therefore, opportunities for cost savings. Some of energy conservation initiatives may be taken by Gulf Oil like:

- Conducting periodic energy audits for identifying energy saving opportunities.
- Phasing out conventional lights and replacement with LED lights/induction lights.
- Power factor improvement by installation of capacitor banks.
- Installation of 5 star rated energy equipment.
- Prevention of idle running of equipment.
- Installation of solar lights.
- Use of Nano molecular thermal additives in ACs.
- Installation of efficient energy monitoring system for energy intensive equipment.
- Capacity improvement for batteries.

## Consumables and Raw Material

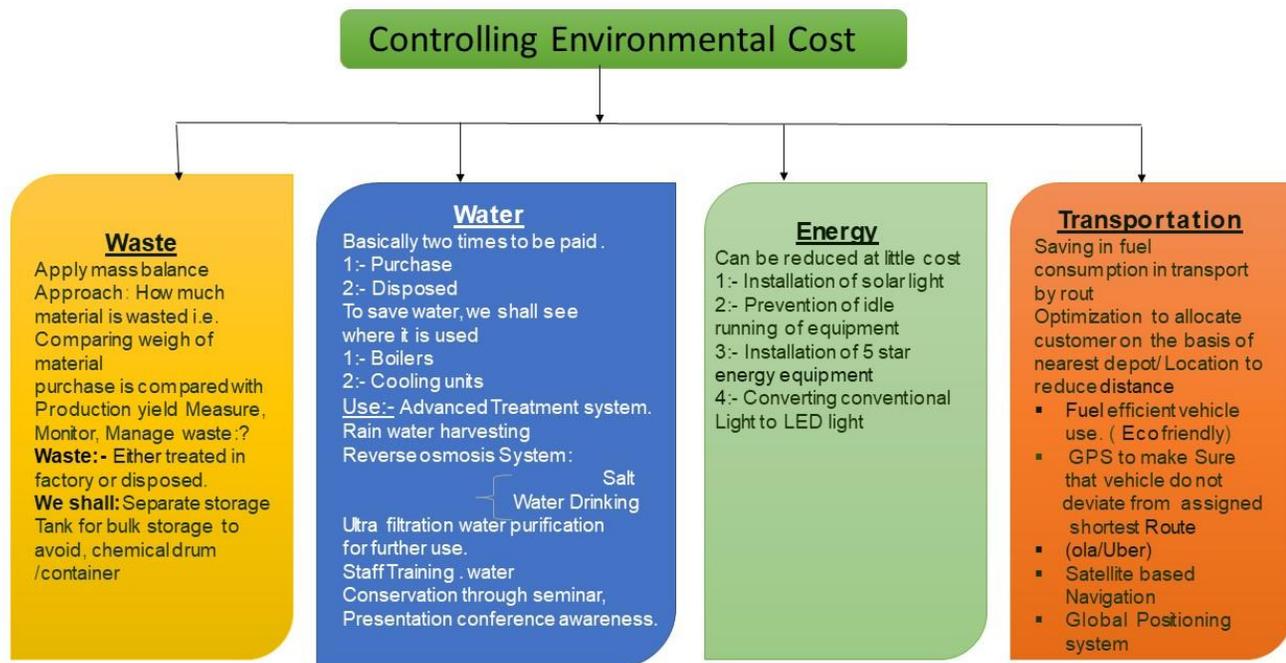
Refineries ‘refine’ crude oil in massive quantities, to produce the fuels need. There should be continuously monitoring on optimum utilization of crude oil to improve gross refining margin. The gross refining margin is the difference between the total value of petroleum products coming out of an oil refinery (output) and the price of the raw material, (input) which is crude oil. Even not only crude oil there should also be optimum and sustainable utilization of resources like additives, chemicals etc. from procurement to production stages.

Gulf Oil may use recyclable technology for raw material and consumable wastages which provides sustainability in terms of environmental protection and reduction in carbon footprint. Periodic testing should be performed to assess the health of equipment and pipelines as to have better process of raw materials and consumables.

**Transport**

Again, EMA may be used to identify saving in terms of transport of goods and materials. At Gulf Oil, in order to cutback emission and fuel consumption due to transportation, route optimization activity may be used like allocation of customer on the basis of nearest depots and locations as to reduce distance, real time fleet tracking using GPS (to make sure that vehicles do not deviate from assigned shortest route) etc.

**Summary: -**



**CASE STUDY No-2: Environmental Management Accounting**

Following three independent situations pertaining to environmental management and sustainability are provided to you:

### **Situation I**

Wasco Limited is a chemical company which uses chloro-fluorocarbons (CFC) in the production of chemical. As awareness of the environmental damage caused by CFC spread, Wasco Limited stopped using CFC in its production processes and analysed and redesigned its product range much before the legislation controlling use of CFC introduced by the Government.

### **Situation II**

Energy drink manufacturer Cool Limited was ordered to submit a yearly report to the Ministry of Environment and Forests on activities, which contains information concerning collection, recovery and recycling of packaging waste, fulfilment of the targets, volume of recovered and recycled packaging waste by type of material and declaration that all compulsory contributions and taxes have been paid.

### **Situation III**

KOA Limited has achieved a 25% reduction of energy consumption through its “Go Renewable” initiative. For, the company a 25% reduction represents a cost saving of about Rs. 30,00,000/-.

## Required

Read the above three situations and **EXPLAIN any 2 items** from (i), (ii) and (iii) below:

- (i) Why Wasco Limited stopped using CFC and redesigned its product range much before legislation introduced by Government?
- (ii) The risk exposure of Cool Limited.
- (iii) How focusing on environmental sustainability provides opportunity to KOA Limited for reducing costs?

## **Solution:**

**(i)** Ever increasing and demanding environmental regulation is forcing companies to change their practices. In many countries, numerous pieces of legislation cover areas such as air quality, climate change, hazardous substances, packaging, waste, and water quality.

The trend is very much in the direction of increased and more stringent legislation. Environment sustainability is not an issue that can be avoided by any organisation.

Organisations need to consider how environmental regulation will impact their operations and the cost of doing business.

By stopping the use of CFC much before the legislation, Wasco Limited gained advantages over its rivals. Wasco's actions were integral to its own strategic success, and instrumental in driving through the subsequent legislation from which the company later benefited.

- (ii) Organizations increasingly have to demonstrate that they are managing all of their risks systematically and responsibly. This includes environmental risks- risks that are a result of impacts of the organization on the environment. By assessing the environmental risks associated with their activities, processes, product, and services, organizations can identify their potential legal and business exposure. Non-compliances can cause enormous financial impacts, such as fines, penalties, legal costs, and damages.

Thus, Cool Ltd is exposed to environmental risks.

(iii) Focusing on environmental sustainability will often provide opportunities for reducing costs. For example, reducing carbon impacts often also saves energy costs. Similarly, programmes for reducing wastes improve environmental performance and reduce operating costs.

Reducing environmental impacts can also reduce or eliminate associated tax, levies, and other compliance costs.

Focusing on environmental sustainability thereby making investments in developing clean technologies and more energy-efficient products and processes will not only save the organization money, but could also be patented and/or sold to other organizations, providing an additional source of income. KOA Limited may have carbon credit for efficiency in reducing energy and sell on the open market, thereby actually generating revenue.



## CASE STUDY No-3: ENVIRONMENTAL MANAGEMENT ACCOUNTING

Shandaar Bangle Ltd (SBL) have been recognized as a manufacturers and exporters of high-quality Bangles, designed and manufactured using optimum quality raw material, sourced from trustworthy vendors of the market.

### Manufacturing Process

The process of manufacture of glass bangles is highly skilled labour oriented one comprising of the following main operations:

Glass Melting Phase —————> Parison Making Phase —————> Spiral/Coil Forming Phase

In first phase, glass batch materials like sand, soda ash, lime stone feldspar, borax etc. with other additives and coloring materials in a suitable proportion are mixed manually and fed into the pot places in pot furnace. The raw material is melted in the furnace at a temperature of about 1300 – 1400 (°C) to obtain molten glass.

In second phase, molten glass is drawn from the pot of the furnace with the help of the iron pipe and formed into gob to gather required quantity of glass for formation into parisons on iron plates. The parisons of different colors are joined together and reheated in an auxiliary furnace to obtain required designs.

In third phase, the reheated parison is then transferred to 'Belan Furnace' from which the glass is further drawn into spiral/coil of bangles on the spindle counted and rotated manually at uniform rate of revaluation synchronizing with the manually at the other end of the furnace. Spiral are then taken out from the spindle and cut with the help of a pencil cutter to separate out the single pieces of bangles from spiral. These cut or un-joined bangles are then sent for joining of end, finishing cutting & polishing, decoration etc. The finished products are then neatly packed for sale.

### Environmental Impact

But unfortunately, these processes have environmental impact at all stages of the process, including emissions of airborne pollution in the form of ashes, gases, noise and vibration.

### Conditions of the Workplace

Due to limitations of maintaining appropriate temperature for melting and moulding of the glass, furnaces are kept burning. Therefore, workers have to work with such working conditions continuously without proper leisure time.

The above-mentioned factors become more harmful while working in immense heat and sound which is normally higher than permissible levels.

### Health Impact

A recent study has revealed adverse impact of pollution over workers and people who are living in nearby area.

### Management Initiatives

The management of company is worried about environmental impact and health impact and has taken certain initiatives in taking care of environment like- batch house cyclonic dust collector, noise absorbing device, natural gas fired furnace, better refractory materials, training for waste minimization, treatment of solid waste, research and development activities aimed at reducing pollution level, planting trees, treatment of nitrogen oxide and other harmful gases.

### Required

Management desires to adopt environmental management accounting as a part of strategic decision-making process.

- (i) **EXPLAIN** the requirement to have environmental management accounting and **IDENTIFY** the SBL's environmental prevention, appraisal, and failure costs.
- (ii) **ANALYZE** the appropriateness of SBL incorporating the following in implementing Environmental Management Accounting:
  - Activity Based Costing

- Life Cycle Costing
- Input Output Analysis

(iii) EXPLAIN the need of non-financial consideration in decision making and suggest safety measures that can be taken into consideration for workers

### **Solution**

Environmental management accounting (EMA) is the generation and analysis of both financial and non-financial information in order to support internal environmental management processes i.e., identification, prioritization, quantification and recording of environmental cost into business decision.

By adopting EMA, SBL will have following benefits:

- Product Pricing.
- Budgeting.
- Investment Appraisal.
- Calculating Investing Options.
- Designing, Calculating Costs, Savings and Benefits of Environment Projects.
- Setting Quantified Performance Targets.
- Assessment of Annual Environmental Costs.
- Environmental Performance Evaluation, Indicators and Benchmarking.
- External Reporting- Disclosure of Environmental Expenditures, Investments and Liabilities.

### **Environmental Costs of SBL**

- **Environmental Prevention Cost:** These costs are basically incurred in relation to activities undertaken to prevent the production of waste that could harm the environment.

Company's efforts to minimize the effect of its activities on the environment like installing batch house cyclonic dust collector, natural gas fired furnace, better refractory materials, training for waste minimization, research and development activities, noise absorbing device and planting trees can be classified as Environmental Preventive Cost.

- **Environmental Appraisal Costs:** It means costs incurred in relation to activities undertaken to determine whether product processes and other activities within firm are complying with environment standards.

SBL may perform 'Contamination Test' to observe the environment compatibility of its processes can be categorized under environmental appraisal cost.

- **Environmental Failure Cost:** It means cost incurred in relation to activities dealing with

pollution arising from the activities of entity includes costs related to treatment harmful gases and treatment of solid waste.

## Appropriateness of Techniques for Identification and Allocation

### Activity Based Costing

This costing technique would help the SBL to separate environmental costs from the general overheads and allocate them to glass bangles by identifying appropriate drivers of these environmental cost. Possible environment activities for environmental costs and their drivers are:

Activity	Cost Drivers
<ul style="list-style-type: none"> <li>Planting of trees</li> </ul>	<ul style="list-style-type: none"> <li>Number of trees planted</li> </ul>
<ul style="list-style-type: none"> <li>Treatment of nitrogen oxide (in the same way, activity and related cost driver for other gases would be determined)</li> </ul>	<ul style="list-style-type: none"> <li>Volume of nitrogen oxide treated</li> </ul>
<ul style="list-style-type: none"> <li>Solid waste removal</li> </ul>	<ul style="list-style-type: none"> <li>Volume of such waste</li> </ul>
<ul style="list-style-type: none"> <li>Research and development activities</li> </ul>	<ul style="list-style-type: none"> <li>Man, hours worked for such activities</li> </ul>

### Life Cycle Costing

By using this costing in EMA, SBL would be able to identify, record and control the environmental costs relating to various stages in the life of glass bangles. At each of following stage environmental cost would be incurred:

- In raw material stage, some natural product would be purchased.
- In manufacturing stage, emission and treatment of nitrogen oxide & other gases and treatment of solid waste.
- In marketing and distribution stage, environmental cost relating to transportation of glass bangles to various customers.

### Input/Output Analysis

Here detail analysis of input and output of a system is done for the purpose of assessment of ecological wellbeing of entity's products, processes and other activities. This technique is based on the fact that whatever goes into the system has to come out of it.

In case of SBL, it can evaluate the volume of sand, soda ash, lime stone feldspar, borax etc. and the resulting volume of output i.e., glass bangles. Through such evaluation, the SBL would be able to allocate and analyses environmental cost attributable to input and output of glass bangles.

### Non-Financial Considerations

Entities generally give emphasis on financial measures such as earnings and accounting returns

but little emphasis on drivers of value such as customer and employee satisfaction, innovation and quality. Due to which mostly companies could not continue in long term. So, for the purpose of achieving long-term organizational strategies, non-financial consideration should be taken into account. Without this it may be that company achieve short term goal but would be difficult to achieve long term goal.

In SBL, it can be clearly seen that there is great impact on health of workers. By creating safe and healthy environment for employees, SBL can improve productivity, business performance, staff morale and employee engagement. Further, SBL will also be able to reduce – accidents/work related ill health/sick pay costs as well as insurance costs. A healthy work force can demonstrate corporate responsibility. If SBL look after employees, business is likely to have a more positive public image.

To create safe and healthy environment following measures can be taken into consideration:

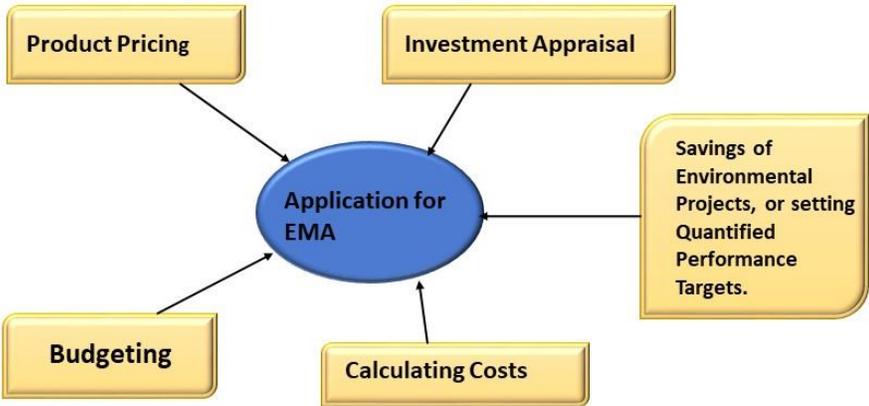
- Safety monitoring system.
- Workers must be trained.
- Recruitment of more workers.
- First aid kit should be available.
- Protective glasses, clothes, gloves should be provided.

Regular health check-up camps and awareness programs.

Summary: -

**ENVIRONMENTAL MANAGEMENT ACCOUNTING (EMA)**

EMA is the process of collection and analysis of the information relating to environmental cost for internal decision making. EMA identifies and estimates the costs of environment-related activities and seeks to control these costs. The focus of EMA is not on financial costs but it also considers the environmental cost or benefit of any decisions made. EMA is an attempt to integrate best management accounting thinking with best environmental management practice.



In practice, Environmental Costs can be split into further two categories: **Internal Costs and External Costs**.

**Internal Costs** have direct impact on the income statement of a company. On the other hand, **External Costs** are imposed on society at large, but not borne by the company that generates the cost in the first instance. Recently governments of many countries are becoming increasingly aware of these external costs and are using taxes and regulations to convert them to internal costs. For example, if the activities of companies lead to forest degradation they might be required to have a tree replacement programme, or they may be granted lower tax allowances on vehicles that cause a high degree of harm to the environment.

## Environmental Costs

### Environmental Prevention

**Costs**-Those costs associated with preventing adverse environmental impacts.

Examples include

- Evaluating and picking pollution control equipment
- Creating environmental policies
- Environmentally driven R & D
- Site and feasibility studies
- Investment in protective equipment

### Environmental Appraisal

**Costs**— The cost of activities executed to determine whether products, process and activities are in compliance with environmental standards, policies and laws. Examples include

- Monitoring, testing, inspection and reporting
- Improved systems and checks in order to prevent fines/penalties
- Regulatory compliances
- Performing contamination tests
- Audit of environmental activities

### Environmental

#### Internal Failure

**Costs** – Costs incurred from activities that have been produced but *not discharged* into the environment. Examples include

- Recycling scrap
- Disposing toxic material
- Back end costs such as decommissioning costs on project completion

### Environmental

#### External Failure

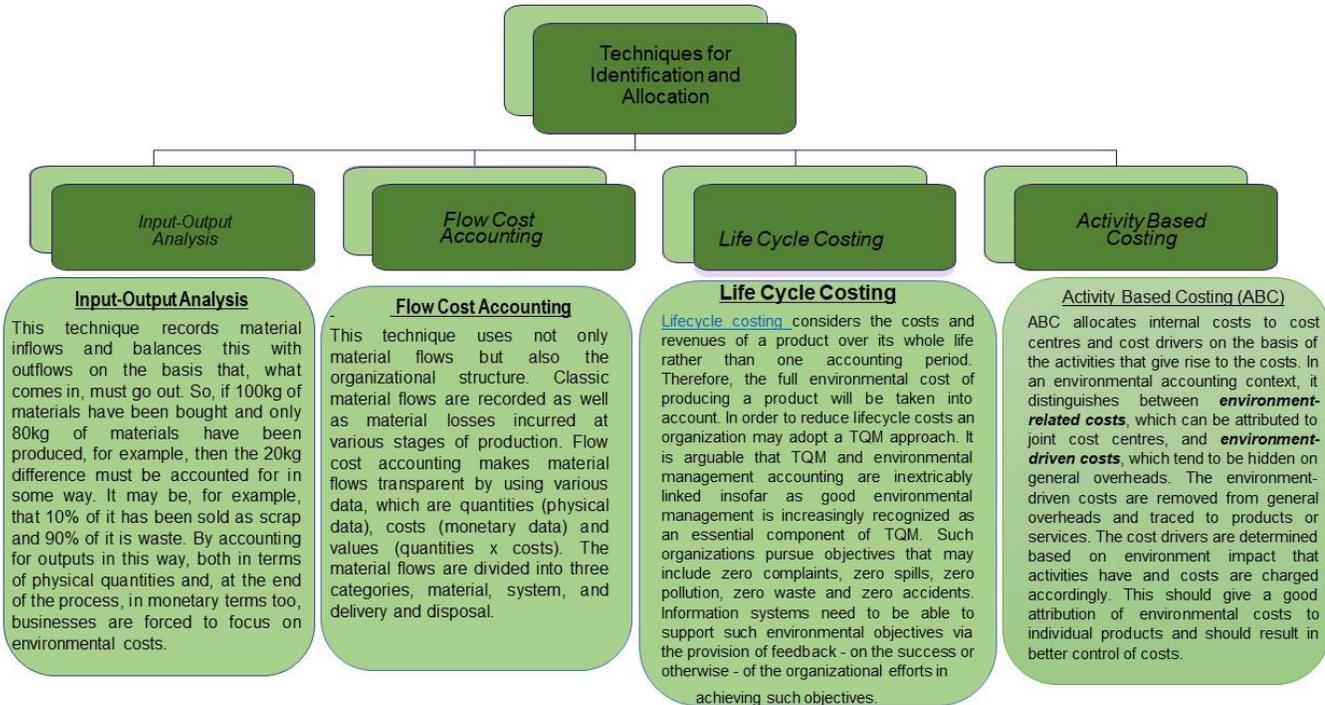
**Costs** – Costs incurred on activities performed after discharging waste into the environment.

These costs have adverse impact on the organisation's reputation and natural resources.

Examples include

- Cleaning up contaminated soil.
- Restoring land to its natural state

## IDENTIFICATION OF ENVIRONMENTAL COSTS





## CASE STUDY: Value Analysis & Functional Analysis

Queenstown Wood Co. (QWC) began 20 years ago, as a small family-run business supplying custom-made school furniture. Now QWC has grown into a thriving hub of experts specializing in either custom-made, locally sourced or quality imported commercial grade furniture. The newly appointed CFO is concerned about the trends in dropping sales volumes, increasing costs, and hence falling profits over the last three years. He observed that the reason of these trends is increased cut-throat competition that has emerged over the last three years. For many years, QWC has been known for high quality but now this quality is being matched by the competitors. QWC's share of the market is declining due to equivalent products being sold by competitors at lower prices. It is considered that, to offer such low prices, the furniture's production costs of the competitors must be lower than QWC's.

### Required

ADVISE how QWC can improve its sales volumes, costs and profits using Value Analysis and Functional Analysis.

### **Solution:**

*Value Analysis* is viewed as a reduction in cost and problem-solving technique. Such technique analyses an *existing product* to identify and cutback or eliminate any cost which do not give any contribution to performance or value. It is a planned, scientific approach to cost reduction which reviews the *material composition* of a product and *production design* so that modifications and improvements can be made which do not reduce the value of the product to the customer or to the user. (i.e., quality for purpose should not be compromised.)

*Functional analysis* is applied to the design of *new products* and breaks the product down into functional parts. For example, a new chair may have the moveable feature. The value that the customer places on each feature is considered and added to give a target cost. Thus, functional

analysis aims to increase profits by reducing costs through elimination of *unnecessary features* and/or by adding cost-effective *new features* that are so *attractive to customers* that the product becomes more lucrative.

The result of the above analysis is to improve the value of the furniture while maintaining costs and/or cutback the costs of the furniture without compromising with value. It is clear from the scenario that QWC needs to cut back its selling prices to compete in the market. This selling price reduction can only be possible by a reduction in QWC's unit costs; however, such reduction must not be accomplished by compromising with quality. Both value analysis and functional cost analysis may be used for QWC; however, value analysis is likely to be a more useful technique because office tables and chairs are such items which are demanded more on the basis of their use value rather than their esteem value.



# CHAPTER 5

## Cost Management for Specific Sector

TIPS Should adopt the following to reduce Losses

**Cartel  
reduce  
(Create Group)**

**Value chain analysis**

**Contract Farming**

**Target Costing to  
Cost**

Agriculture sector  
30% of total  
Production lost  
every  
Year  
Do value chain  
analysis & avoid the  
same

Agreement  
between buyer  
(Fresh bazar) &  
farmer to buy at  
future date

Also, they can assist  
farmers in latest  
technology of in  
farming soil analysis  
etc.

Also, by analysing  
value chain try to  
eliminate all inter  
mediaries

This should  
reduce costs

Benefits: -

- 1: - Increased Production  
(Also, they can assist farmers in latest technology of in forming, soil analysis etc.
- 2: - Low transaction costs
- 3: - Better quality
- 4: - Low fluctuation in Price in unlike in whole sale mandis
- 5: - No Intermediaries

## CHAPTER 6

# Decision Making

### CASE STUDY: -

**Question 9:** - ABC Limited specializes in the manufacture of chemical intermediaries in a very competitive business environment. ABC is a public listed company, with majority of its shareholders being institutional investors like mutual funds, banks and insurance companies. It is located in a water scarce zone in Tamil Nadu. There are restrictions on the tapping and usage of groundwater under the relevant laws. Penal provisions of the law will apply in case of violations. The production process requires water and the amount of water that the company can draw is limited to 19,000 kilo-liters (1 Kilo-liter is 1,000 liters). Purchase of water is not an option as availability is highly erratic and exorbitant on cost.

The company manufactures two types of chemicals “A” and “B” and these are sold in kilograms. The company is in the process of making the business plan for the year 2021.

Based on the actual operating data for 2020 and taking into consideration the inflation and possible price increases that it can obtain from the market, the following product costing details have been arrived at:

Product	A	B
Capacity Volume kg. (not inter-changeable)	8,25,000	9,30,000
Selling Price per kg.	₹2,000	₹1,000
Variable Cost per kg.	₹1,500	₹650
Water (liter/ kg.)	12.5	10

Under the relevant income tax laws prevalent, companies with a turnover of ₹250 Cr. (Crores) or less are taxed at a lower rate of 25% as against the normal 30%. The company intends to keep its sales for 2021 equal to ₹250 Cr. or slightly lesser to avail this concessional income tax benefit.

With capacity constraints, the company has calculated that it would be still beneficial for the company to stick to ₹250 Cr. as only a marginal increase in turnover is possible over ₹250 Cr.; after a higher tax @30%, the PAT would be still lower than the PAT arrived at after doing just ₹250 Cr. and availing the lower income tax rate.

CFO asked management consultant to work out the volumes in kg. of products “A” and “B” which would give an optimal (maximum) contribution given the constraints on capacity, water usage and turnover to avail the concessional income tax benefit.

Consultant work out with the following product mix using Linear Programming. She also

proposes another mix which does not meet the constraint on water usage where the company could end up drawing excess water than permitted by 113 kilo-liters but would result in an increase of ₹30 lacs in contribution. She says that it is easily possible to do this by managing reporting to the water authorities.

Product		Optimal	Suggested
A (Volume in kg.)		8,00,000	7,85,000
B (Volume in kg.)		9,00,000	9,30,000
Contribution in ₹Cr.		71.5	71.8
<b>Constraints</b>			
Sales	<= 250 Cr.	250	250
Volume of "A" in kg.	<= 8,25,000	8,00,000	7,85,000
Volume of "B" in kg.	<= 9,30,000	9,00,000	9,30,000
Water usage (in KL)	<= 19,000	19,000	19,113

#### Required

The CFO is not satisfied with the calculations. He wants you (Sr. Finance Manager) to come up with a proper DISCUSSION. (RTP NOV.2020)

**Solution:** - Primary goal of investor –owned firms is shareholder wealth maximisation, which translates to stock price maximisation. Management Consultant’s plan is looking good for the ABC as there is a positive impact on the profitability (₹30 lacs) of the company. Also, ABC operates in a competitive environment so for its survival, it has to work on plans like above.

There is second side of coin that cannot also be ignored i.e., **business ethics**. It is easily possible to manage drawing of excess water, but it is not an ethical practice as the company has *responsibilities towards* use of natural resources like water and protecting the environment.

Besides, a whistle-blower complaint to the water authorities can land the company into trouble in terms of penalties, *a financial impact* and also such penalties are disallowed for income tax purposes. It is possible that such a violation may be reported in the media causing *disrepute to the name* of the company. It can also make *investors* in the share market stay away from the company as it has ethical governance issues. The company will face challenges in obtaining other *government approvals* when it will plan expansion as this violation may have to be reported on the applications seeking approvals.

## Overall

May be ABC would able to earn profit due to this plan in *short run* but it will tarnish the image of the ABC which would hurt profitability in *long run*. Therefore, before taking any decision on this plan, ABC should analyse both qualitative and quantitative factors.

(Study Material)



## CASE STUDY

**Question 48:** Aditya Group was established in 1975, manufactures and sells electronic personal grooming and beauty products. The group has two 100% subsidiaries AUS Ltd. and ANZ Ltd. AUS Ltd. manufactures luxury products that cater to niche customers who prefer specialized personal grooming and beauty care. ANZ Ltd. caters to regular daily beauty and grooming requirements that has a wide reach within the market. Factories of both companies are located within India. The products are sold to wholesalers, who supply these products to the retail market.

Aditya Group purchases its raw material requirements from both domestic and overseas markets. Additionally, certain products manufactured by AUS Ltd. can be enhanced based on the products manufactured by ANZ Ltd. Therefore, as per production requirements, AUS Ltd. sources some product components from ANZ Ltd.

Aditya Group has a centralized decision-making set-up. Basic policy decisions for functions such as production planning, sales and client relationship, finance and human resources are handled at the group level. Individual units AUS Ltd. and ANZ Ltd. concentrate on the manufacturing alone.

## About You

You are an Assistant Manager in Finance and Accounts department of Aditya Group, headed by Director-Finance Ms. Elsea. You assist and report to Ms. Fiona, Manager of your department, drafting reports for board meetings, preparation of presentation and staff trainings.

### **Business Situation- I**

Yesterday, 5.15 P.M.

You got an email from Ms. Elsea, with Cc to Ms. Fiona. Ms. Elsea, asked you to prepare a cost statement for making a quotation to a new customer. She has also informed you that the customer can also maintain a long-term business relation with us. You have been requested to gather information related to the specification from Sales Manager.

Yesterday, 5.25 P.M.

You have been called by Ms. Fiona, and provided the product specification received from Sales-Manager for which quotation has to be quoted. Ms. Fiona has also requested you to gather relevant information to prepare cost statement. Due to the expected long term business relationship that AUS Ltd. wants to have with the customer, the sales manager wants to quote

the lowest possible price. AUS Ltd. currently has some spare capacity that can be utilized to cater to this entire order. Therefore, only the relevant cost to AUS Ltd. has to be considered to arrive at the quote.

After meeting with your reporting officer, you mailed to various concerned department and requested for data.

The following information has been obtained in relation to the contract:

Today, 10.05 A.M.

You got an e-mail from Production Manager; it has been informed that 40 tonnes of material Dx would be required. This material is in regular use by AUS and has a current purchase price of ₹380 per tonne. Currently, there are 5 tonnes in inventory which cost ₹350 per tonne. The resale value of the material in inventory is ₹240 per tonne.

Further, with regards to components, it has been informed that 4,000 components would be required. These could be bought externally for ₹15 each or alternatively they could be supplied by ANZ Ltd. the variable cost of the component if it were manufactured by ANZ Ltd. would be ₹8 per unit. ANZ Ltd. has sufficient capacity to produce 2,500 components without affecting its ability to satisfy its own external customers. However, in order to make the extra 1,500 components required by AUS Ltd., ANZ Ltd. would have to forgo other external sales of ₹50,000 which have a contribution to sales ratio of 40%. To have uniformity in the quality of the component, it is assumed that AUS Ltd. would procure its entire requirement of 4,000 components either externally or from ANZ Ltd. the transfer pricing policy of Aditya Group for sales between units aims at goal congruence. The unit selling the goods would be allowed to charge any opportunity cost on account of catering to internal demand, while the purchasing unit should ensure that the company is not at a loss.

Today, 10.45 A.M.

You got an e-mail from Personnel Manager; it has been informed that 2,000 high skilled labour hours would be required. The grade of labour required is currently paid ₹5 per hour. Highly skilled labour is in short supply and cannot be increased significantly in the short-term, this labour is presently engaged in meeting the demand for product 'G', which requires 4 hours of highly skilled labour. The contribution from the sale of one unit of product L is ₹24.

It has also been informed that the contract would require a specialist machine. The machine could be hired for ₹15,000 or it could be bought for ₹50,000. At the end of the contract if the machine were bought, it could be sold for ₹30,000. Alternatively, it could be modified at a cost of ₹5,000 and then used on other contracts instead of buying another essential machine that would cost ₹45,000. The operating costs of the machine are payable by AUS whether it hires or buys the machine. These costs would total ₹12,000 in respect of the new contract.

Supervisor

The contract would be supervised by an existing manager who is paid an annual salary of ₹50,000 and has sufficient capacity to carry out this supervision. The manager would receive a bonus of ₹5,000 for the additional work.

## Development Time

15 hours of development time at a cost of ₹30,000 have already been worked in determining the resource requirements of the contract.

## Fixed Overhead Absorption Rate

AUS uses an absorption rate of ₹20 per direct labour hour to recover its general fixed overhead costs. This includes ₹5 per hour for depreciation.

Today, 11.15 A.M: Ms. Fiona called you in her place as asked you the following:

## Required

- (i) CALCULATE the relevant cost of the contract to AUS. You must present your answer in a schedule that clearly shows the relevant cost value for each of the items identified above. You should also EXPLAIN each relevant cost value you have included in your schedule and why any values you have excluded are not relevant. Ignore taxation and the time value of money.
- (ii) DISCUSS two problems that can arise as a result of setting prices using relevant costing.

## Business Situation-2

Today, 5.26 PM: A memo from Managing Director of the group has been circulated to all officers of the group which stated “My objective for the forthcoming year is to reduce our quality costs in each of the primary activities in our value chain”. The company is keen to build a reputation for quality and gives a five-year guarantee with all of its products.

Today, 5.37: Ms. Fiona, called you in her place and asked the following:

## Required

- (iii) EXPLAIN, by giving examples, how each of the four types of quality cost could be reduced. You should also IDENTIFY in which primary activity each one of your examples would occur in Aditya group’s value chain.



**Question 49:** Star Bus Tours Co. Ltd. (SBTCL) is an open top double-decker bus sightseeing company, particularly identified with its special red and cream-colored buses. It commenced operating in small town of Meghalaya in June 2014 with four buses and as of 2018 operated over 44 buses in north east region of India. SBTCL operates five routes with stops at tourist destinations. The company runs hop-on, hop-off bus tours of various hills, with one 24-hour ticket valid for unlimited journeys on the route.

## Budget Process/Incentive Plan

As a part of management performance control and incentive scheme it has been following participative budgeting approach. In SBTCL, budgeting is a joint process in which functional divisions develop their plans in conformity with corporate goals for the next financial year. Based on these plans, divisions prepare functional budgets and send to the appropriate management for review and approval. The budgets after the incorporation of the feedback and suggestions received from the said management, are finalised for the implementation.

Then, finalised budgets are used as yardstick for performance measurement. Comparing the actual performance with the yardstick, bonus and other performance related incentives are considered. The higher management believe that this performance control and incentive scheme is very helpful to measure the performance and fixing responsibilities for the responsibility centres.

**Budgeted Income Statement (₹'000)**

Revenue	1,13,800
Less:	
Variable Costs-	
Direct Material (Fuel, Lubricants and Sundries)	13,600
Direct Labour	40,500
Variable Overheads	7,700
Fixed Costs-	
Operating Overheads (Buses, Garage, Salaries)	18,100
Marketing and Administration	10,700
Profit/(Loss) before taxes	23,200

**Tabel-I**

**Current Year's Income Statement (₹'000)**

Revenue	93,500
Less:	
Variable Costs:	
Direct Material (Fuel, Lubricants, and Sundries)	19,600
Direct Labour	37,700
Variable Overheads	6,200
Fixed Costs:	
Operating Overheads (Buses, Garage, Salaries)	20,150
Marketing and Administration	10,100

Profit/(Loss) before taxes	(250)
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Tabel-2

**Other Information**

Surprisingly above given current year's actual results were not up to the mark. Actual results were clearly showing adverse performance in comparison with budgeted figures.

Managers of SBTCL were upset because they did not receive the bonus. Ms. Maggie, Tour Manager of Route No. 3, said –

*“We lost 2 month's revenue and fuel prices are almost doubled. We did our best but these circumstances were beyond our control and we should not penalize at all.”*

In support of her statement, Ms. Meggie provided following additional information –

- (a) Rain is common in Northern Region. But the past year set a record in numbers. In July, the expected average was 1,577 mm and received was 1,810 mm, In August the expected average rain was 990 mm and actual received was 1,535 mm. Heavy rain in these two months disrupted normal life of the region.
- (b) The fuel prices have risen almost continuously since last year due to surge in global crude prices.
- (c) Additional operational expenses ₹22,00,000 also incurred to remove the milky appearance and give the stainless a nice new look effected by heavy rain.

She claimed that –

*“Revised budget with consideration of the above factors would give different results and lead to different conclusions”*

**Required**

**ANALYSE** the tour manager's view.

**Solution:** - It appears the SBTCL has been badly hit by the whether-high rain in July and August nave led to a stump in business. Revenue have seen it fall of 15% over the budgeted figure. Direct Material (most of the fuel) is 21 % of the sales (compared to 12% of budgeted level) because of hike in fuel price Variable Overheads are almost same. However interestingly, there is a saving of ₹ 1,50,000 in Operating. Overheads as compared to the budgeted figure after catering additional Operational Expenses of ₹ 22,00,000 (for removal of milky appearance etc.) Furthermore, there is reduction in Marketing & Administration cost. The ratio of Salary to Sales rise to 40% in 2018 from 36% (as budgeted). This appears to be a typical. Instead, there should be a cut in this ratio due to stump in business.

Award of bonus in case of losses is not justified and managers should be held accountable for their operations. However, they should not be held accountable for the events beyond their control. A manager cannot control movements in fuel price, yet he/she is supposed to have the most information and he/she is expected to correctly forecast movements in

the prices of fuel. Managers shouldn't be penalized for the uncontrollable events.

Accordingly, in SBTCL there should be revision in the budget to account uncontrollable events. Refer able -X.

Revised Budgeted income statement (₹ '000)

Revenue	94,833
Less:	
Variable Costs: -	
Direct Material (Fuel, Lubricants and Sundries)	19,879
Direct Labour	33,750
Variable Overheads	6,417
Fixed costs: -	
Operating Overheads (Buses, Garage, Salaries)	20,300
Marketing & Administration	10,700
Profit / (Loss) before taxes	3,787

### **Table-X**

\* 10 months revenue, \*\* at actual price levels

The Revised Profit Margin has come down to 4% as against the Target profit Margin of 20%. This clearly indicates that the performance was benchmarked against the higher target. If original budget figure is used to measure the performance, it will punish employees for the reason which are beyond their control.

SBTCL is not too far away from revised Profit Margin. Therefore at least some bonus may be considered to be awarded to the employees which may create more employees loyally and may be beneficial for long term.

Further continuous monitoring of Budget Performance (achievement/Failure) in SBTCL is essential to overcome this situation. This helps to identify where revisions are required in the budget to account changing conditions, errors, modification to company's plan etc. Monitoring of Budget performance should be the responsibility of the mangers in SBTCL. The essence of the effective monitoring of Budget Performance is that the managers should provide accurate, relevant, actionable information on time to the appropriate management level so that budget can give a realistic target to measure the performance.

It is also important to note that at the time of revising the budget, the primary budget as well as past information should not be ignored as they are the basis for preparing all

budgets.



## CASE STUDY

**Question 52:** -The President of Automation Limited, a 150 persons engineering company, decided it was time to fire the company's biggest client. Although the client provided close to 60% of the company's annual revenue, Automation Limited decided that dropping this client was necessary. The client was profitable.

The President of Automation Limited stated "We cannot be a great place to work without employees, and this client was bullying my employees. Its demands for turnaround were impossible to meet even with people working seven days a week. No client is worth losing my valued employees".

The initial impact on revenues was significant. However, Automation Limited was able to cut costs and obtain new

customers to fill the void. Moreover, the dropped client later gave Automation Limited two projects on more equitable terms.

### Required

- (i) DISCUSS the reasons behind dropping of a profitable client by Automation Limited.
- (ii) STATE three qualitative factors that management should consider in outsourcing and make or buy decisions. **(ICAI NOV19)**

**Solution:** - Decision Making – Automation Ltd.

With increasing completion, dynamic market changes, changing needs of customers, non-financial and ethical considerations have gained relevance in the decision-making process. A company may face the dilemma of meeting customers' needs while protecting employees' rights. While there are no clear-cut parameters to measure the impact of such decisions, they have a long-term impact on the company's operations that ensures profitability and sustainability of an organization.

In the given scenario, a customer who contributes close to 60% of Automation Ltd.'s profits have been making turnaround demands that are unreasonable for the company employees to meet. Automation Ltd. has to decide whether to continue doing business with the customer based on the current terms or protecting the work environment of its employees. In the current scenario, it is in Automation's long-term interests to protect its employees' rights (a non-financial consideration). Keeping this approach in mind, Automation Ltd. decided to terminate business with the profitable client. While this had a significant impact on revenues in the short term, in the long run Automation Ltd. was able to get business from new clients. Also, realizing the value of service provided, the dropped client came back with projects on equitable terms.

Therefore, even though it did not make financial sense in the short run, decisions based on non-financial metrics played an important role in ensuring Automation Ltd.'s long term sustainability.

**(i) Qualitative factors to consider while making the outsourcing and make or buy decisions:**

- (a) Quality of goods produced outside vs. in-house production of the component. Outsourcing or buying a component from the external market, should not impact the overall quality of the product. Therefore, any component critical for a product would generally not be outsourced unless its supplier gives quality assurance.
- (b) Reliability of suppliers in the outsourcing arrangement. Assurance must be given by the supplier in terms of both quality and timely delivery of components for the given price. Also, there must be a sufficient pool of suppliers from whom the company can buy the product. If one supplier closes shop, there must be alternate suppliers available.
- (c) Availability of skilled labor and infrastructure to make the component in-house. If not available, then the component may have to be bought from the external market.
- (d) Regularity of demand for the product – If made in-house, seasonal demand for a product may result in the risk of holding high inventories (including that of raw materials) or making high capital investments that will prove unproductive during off-season. Therefore, outsourcing or buying from external market may be more viable when the demand for the final product is seasonal.
- (e) Risk of technological obsolescence for the component – when the risk is higher company may favor outsourcing.
- (f) Confidentiality of process or patent of process – Confidential processes or critical components may not be outsourced.
- (g) The shutting down of company's manufacturing facility might have a negative impact on the morale of remaining employees.



Case study of Ethical and Non-Financial Consideration

**Question 89:** Star Limited is in the business of manufacturing copper rods. The Copper rods are sold to various cable wires manufactures across the country. The growth in economy, especially the power sector, has led to a sharp increase in demand of cable wires and copper rods. The company is considering an opportunity to set up its own copper wire manufacturing plant and gain a share of cable wire's market. A detailed study was carried out to understand the market of cable wires, market growth, competitive landscape, financial feasibility etc. The Chairman has asked the Director of Finance to review the financial feasibility study and highlight concerns, if any.

The Following paragraphs contain summarized information of financial study carried out:

The project of setting up a new cable wire manufacturing plant is expected to yield a Net Present value of 200 crores considering a project life of 20 years. The initial cost of setting up the plant is 500 crores which is readily available with the company. The project would yield an IRR of 17.5% which is higher than the IRR of other plants under operation.

The plant would employ about 70% of labour on contractual basis. These labours would mostly comprise immigrants from neighboring countries. The feasibility study has assumed that the immigrants labours would be paid 15% less wage than that paid to other workers. However, the wage paid to immigrants would still be higher than the minimum wage requirements. The contribution to retirement funds is also not considered in the project evaluation. The company feels that immigrant workers would not stay beyond a period of a year and thus there is no requirement to contribute to retirement funds.

The existing plants of the company do not have free space available and hence the company will need to buy land adjacent to its existing plant. A part of the proposed land to be acquired falls under the forest reserve area where no commercial activity is allowed. The company official is in liaison with the government official to get the land parcel approved. A certain amount of the value of land would be paid to certain government officials through a consultant. This cost is not a part of the project evaluation report.

The new plant would also produce certain chemically harmful waste which would be disposed of into a nearby river after treatment. The company however does not have any technology to treat the waste fully. A new treatment plant would cost about 100 crores.

The Finance director has forwarded the entire report to you for comments.

#### Required:

- (i) List various non-financial and ethical considerations in decision making.
- (ii) Evaluate the impact of the various issues in the financial study and give your recommendation.

**(Study Material)**

## Solution

### Issue

Star Limited manufactures copper rods and is considering commencing a new plant for manufacturing of cable wire. A financial evaluation has been carried out and the project appears to be financially viable. The project has a positive NPV of 200 crores and an IRR of 17.5%. Though the project is financially viable, there are certain concerns relating to the project.

### Non-Financial and Ethical Consideration in Decision Making

Capital Budgeting or Investments decisions are generally made based on the various financial evaluation like Net Present Value, Internal Rate of Return, Payback Period etc. The financial

considerations in capital budgeting decisions are important because the end objective of every for-profit business is maximisation of shareholders wealth. However, an important aspect of capital budgeting is that investment decisions cannot be purely based on financial analysis; there are other soft non-financial aspects of the investment appraisal that need to be thoroughly looked into. Some of the non-financial considerations that a company factors for capital budgeting or investment decisions are listed below:

#### Environmental Factors

Environmental factors like pollution, deforestation, impact on climate and weather, greenhouse effects etc. must be considered by companies while selecting a project for implementation. Any project which adversely affects the environment is not taken positively by common public and environmentalists. A lot of projects have been stalled or delayed due to the protests by pro-environment groups leading to cost and time overrun. The government through ministry of environment could impose penalties on projects which are violating environmental norms or green norms.

#### Staff Motivation

Staff motivation and satisfaction is another important factor which companies might consider while choosing projects. If, for example, a company decides to implement automation in its plants for operations which would result in redundancy in labour, the overall staff motivation would come down. Staff and workers would resort to strikes and lockouts to protest against such decisions. The company should adopt a participative approach while taking such decisions considering the impact it would have on the labors.

#### Government Regulations

The companies must comply with relevant government regulations while implementing projects. Some projects might be profitable and yield excellent returns. However, if the profits and cash flows are generated by violating government regulations, it could be harmful in the longer run for the company and its brand. The companies must ensure that all relevant laws and regulations are complied with.

#### Availability of Resources

The evaluation of any project must also consider availability of key resources like raw material, manpower, logistics infrastructure, electricity etc. If there is any constraint on any of the key resources at a future date, a financially viable and excellent project could well turn into a failed project. It is thus important that the requirements and availability of key resources are analysed in advance.

#### Availability of Project Site

Site selection involves measuring the needs of a new project against the merits of potential locations. This indicates the practice of new facility location, keep in ginmind project requirements. A wrong or unsuitable project location may mar the very benefits of a financially

lucrative investment proposal.

### Corporate Social Responsibility

Corporate social responsibility refers to "the ethical principle that an organisation should be responsible for how its behavior might affect society and the environment". The companies do not function in silos but are a part of the larger society and environment. They have a responsibility towards the society and environment to use the various resources judiciously and ensure a sustainable development. Companies are expected to uplift the well-being of the society at large and to not harm the environment through operations. The aspects of corporate social responsibility must also be considered while deciding the project to be implemented.

### Ethics

Ethics are a set of guiding moral principles for individuals and corporates. Every company has a duty of care to various stakeholders (shareholders, employees, suppliers, customers etc.). A company is expected to act in a fair and transparent manner and be honest in all its dealings with stakeholders.

### Issues in the Financial Study

As discussed earlier, the project is financially viable with a very good NPV and IRR. The amount required to build the plant is also available with the company. Financially, the project must be accepted. However, there are certain non-financial issues which must be addressed before a decision to build the plant is taken.

### Payment to Labour and Ethics

As explained earlier, every company has a duty of care to all its stakeholders and the stakeholders must be treated fairly. Labours are a key stakeholder for the construction and running of the plant. The company has chosen to pay 15% lower wage to immigrant workers and not contribute anything towards their retirement benefits.

The company is paying a higher wage to the labours than required by law and hence there is nothing illegal in such payments. However, the company must not discriminate between workers who are doing same nature of work just because the workers are immigrants. The reputation of the company might be affected because of the lower wages paid to immigrants. There is a possibility that these labours go on protests and strikes or decide not to work for the company.

The company has also decided not to contribute to retirement funds for these workers. This could have a legal implication as well. The financial impact of paying wages at par with other workers and contributing to the retirement fund for immigrant workers is not known. However, the company should reconsider this decision and pay all the workers the same level of wages. The company should also contribute to the retirement fund of employees.

### Availability of land and bribery

The existing plant does not have sufficient space to build a new plant and hence the company is planning to acquire additional land which falls under the forest reserve area where no commercial activity is allowed. The company is in liaison with government officials to get the land acquisition approved. The company would also be paying bribes indirectly to the government officials to get the land allotment approved.

The payment of bribes to government officials, whether directly or indirectly would be unethical. The company could face litigation for acquiring land by unfair means and in future, there is a possibility of such allotments being cancelled. The company's reputation would also be dented if news of bribery is published by the media. The company also has a responsibility towards the environment and must contribute towards a sustainable development. The society at large would not take acquisition of forest land by unfair means positively. This impact the overall goodwill and brand image of the company.

The company must evaluate if land at other sites can be acquired for construction of the plant. Such acquisition would be at a higher cost but would be beneficial to the company in the longer run.

### Chemical waste and technology

The proposed plant is likely to emit chemically harmful waste which would pollute the environment. The technology available with the company can treat such waste partially. The company has to incur an additional cost of 100 crores to build a new treatment plant. This means that the NPV of the project would be reduced by 100 crores and IRR would also be lesser if the new treatment plant is built.

As discussed earlier, the company must operate in a socially responsible manner and consider implication of its action on the environment. The pollution caused by plants affects the surrounding environment and might lead to protests by local residents. Sometimes such protests are backed by NGOs as well. The commissioning of environmentally sensitive projects is difficult at times and can cause project delays as well.

The company should consider acquiring a new chemical waste treatment plant to ensure that there is no discharge of harmful waste from the company's plant. Though, there is an additional cost involved in building a new plant, it is important that the society at large perceives that the company is operating in a socially responsible manner. The company operates in a society and is an integral part of it and hence, it has certain responsibilities towards the society as well.

### Conclusion

The ultimate objective of a company is to maximise shareholders wealth. The company must, however, operate in a socially responsible manner in achieving the objective of wealth maximisation. The company has a duty of care to other stakeholders like employees, society at large etc. In some cases, there may be conflict between different stakeholder's objectives. For instance, a new waste treatment plant would be good for the environment and society at large but would be adverse for shareholders as an additional cost of 100 crores would be incurred.

The company must definitely consider non-financial factors along with financial factors while deciding on whether to build a new plant or not.



## CHAPTER 7

# Pricing Decision

### Case Scenario

**Question 4:** Netcom Ltd. manufactures and sells a number of products. All of its products have a life cycle of less than one year. Netcom Ltd. uses a four-stage life cycle model (Introduction, Growth, Maturity and Decline).

Netcom Ltd. has recently developed an innovative product. It was decided that it would be appropriate to adopt a market skimming pricing policy for the launch of the product.

However, Netcom Ltd. expects that other companies will try to join the market very soon.

This product is currently in the Introduction stage of its life cycle and is generating significant unit profits. However, there are concerns that these current unit profits will not continue during the other stages of the product's life cycle.

#### Required

EXPLAIN, with reasons, the changes, if any, to the unit selling price and the unit production cost that could occur when the products move from the previous stage into each of the following stages of its life cycle:

- (i) Growth
- (ii) Maturity

#### Solution

##### Growth Stage

Compared to the introduction stage the likely changes are as follows:

##### Unit Selling Prices:

These are likely to be reducing for a number of reasons:

- The product will become less unique as competitors use reverse engineering to introduce their versions of the product.
- Netcom may wish to discourage competitors from entering the market by lowering the price and thereby lowering the unit profitability.
- The price needs to be lowered so that the product becomes attractive to different market segments thus increasing demand to achieve the growth in sales volume.

### **Unit Production Costs:**

These are likely to reduce for a number of reasons:

- Direct materials are being bought in larger quantities and therefore Netcom may be able to negotiate better prices from its suppliers thus causing unit material costs to reduce.
- Direct labour costs may be reducing if the product is labour intensive due to the effects of the learning and experience curves.
- Other variable overhead costs may be reducing as larger batch sizes reduce the cost of each unit.
- Fixed production costs are being shared by a greater number of units.

### **Maturity Stage**

Compared to the growth stage the likely changes are as follows:

#### **Unit Selling Prices:**

These are unlikely to be reducing any longer as the product has become established in the market place. This is a time for consolidation and whilst there may be occasional offers to tempt customers to buy the product the selling price is likely to be fairly constant during this period.

#### **Unit Production Costs:**

Direct material costs are likely to be fairly constant in this phase and may even rise as the quantities required diminish compared to those required in the growth stage with the consequential loss of negotiating power.

Direct labour costs are unlikely to be reducing any longer as the effects of the learning and experience curves have ended. Indeed, the workers may have started working on the next product so that their attention towards this product has diminished with the result that these costs may increase.

Overhead costs are likely to be similar to those of the end of the growth phase as optimum batch sizes have been established and are more likely to be used in this maturity stage of the product life cycle where demand is more easily predicted.

**(ICMA LONDON)**



## CHAPTER 9

# Divisional Transfer Pricing

### CASE STUDY: TRANSFER PRICING: -Business Model

**Question 43:** - Rest Easy Company is a rapidly growing start-up in the technology sector. It develops customized ERP packages for clients across various business sectors. The business comprises primarily of two departments (1) consultant and (2) customer support. Consultant department has highly qualified professionals from management, accounting, and technology background, who approach clients as a team and work out solutions that meet their needs.

Customer support personnel are in charge of IT implementation and provide support the rough telephone, e-mail or on-site. Currently, the strength of the consultant's department is 200 while that of customer support is 150.

Yash, the founder and CEO of the company, is very passionate about this business model. To deliver high-quality product solutions, he believes that his staff should be well-trained and up-to-date with developments in their professional fields. Therefore, Rest Easy provides periodic training to its staff in-house. All employees are expected to undergo 2 weeks of training annually. A training department has been set up with qualified trainers in various fields, who provide periodic training sessions to both Consultant and Customer Service departments. The training department has 5 trainers. Training sessions are aimed at providing skills that the executives need to provide better service to their clients. This in-house focus of high-quality delivery, is the key factor that Yash believes would set apart Rest Easy from its competitors.

In addition to delivering training sessions, trainers are responsible for developing training material for routine, on-going as well as specialized training sessions. They attend conferences, train the trainer sessions and subscribe to journals to keep themselves up-to-date with various developments that consultants and customer support executives need to be aware of.

At the beginning of each year, heads of consultant and customer service departments advise the training department on the expected number of training sessions that their staff would undertake. In special situations, where developments need to be communicated rapidly, extra sessions can also be conducted. Training department budgets are prepared based on these needs.

#### Transfer Pricing - Training Cost Allocation

Cost incurred by the training department is allocated to the consultant and customer service department based on the training sessions availed by both departments. A standard quote

(transfer price) based on budgets is provided at the beginning of the year. At the end of the year, actual cost is allocated based on actual training sessions of each department.

Each of the user departments use the transfer price to prepare their individual budgets, that further gets built into their pricing models used for billing clients. One of the metrics for manager appraisal is also the financial performance of their individual departments. Hence, managers of both consultant and customer service departments are very cost conscious.

Figures for budget and actual costs for 2018 of the training department are as follows:

Figures in ₹

Cost Particulars	Budget	Actual
Salaries	25,00,000	30,00,000
Depreciation on Office Equipment	2,00,000	5,00,000
Software Licenses for Training Packages	80,000	1,05,000
Conference Travel for Train the Trainer Sessions	10,000	15,000
Telephone	20,000	25,000
Training Supplies	50,000	60,000
Trainee Lunch	100,000	120,000
Total Expenses	29,60,000	38,25,000

Consultant and Customer service departments are charged based on the number of training sessions actually availed. Details of training sessions for each department are:

Department	Budget	Actual
Consultant	100	100
Customer Service	100	80
Total	200	180

### Problem of Goal Congruence

In accordance with the above explanation, the training department quoted a rate of ₹14,800 per session based on the budgeted cost and budgeted training sessions. (Budgeted cost

₹29,60,000 for 200 training sessions). Actual cost per session is ₹21,250 (Actual cost ₹38,25,000 for 180 training sessions). Cost overrun of ₹6,450 per session, a jump of 44% from the original quote.

Consequently, a meeting was called that was attended by the managers of consultant, customer service and training departments, along with the CEO Yash.

The user departments were unhappy with the higher charge. Manager of the consultant department raised the following concerns:

- (a) The market rate for similar trainings provided by external vendors was only ₹12,000 per session. He has accepted a higher transfer price of ₹14,800 per session only because the in-house training program was more customized towards Rest Easy's end-user- clients. However, if the department is actually going to be charged ₹ 21,250 per session, he would rather source the training to the outside vendor.
- (b) Further, he pointed out that while his department had adhered to its commitment of 100 training sessions, the customer service department has availed of 20 lesser sessions than its commitment. Reviewing the cost structure of the training department, most of the expenses are fixed in nature. Therefore, when the transfer price is based on the actual cost and actual training sessions, the per session cost has increased because the customer service department did not undergo the entire 100 sessions. He questions, why he should bear a higher allocation of cost due to variance in actual and budgeted usage of training resources of the customer service department?

Manager of the customer service department explained that the variance of 20 training session is on account of the executives handling high-priority work pressure that did not allow them enough time to complete some of the training sessions. At the same time, she contended that she should not be charged for those 20 sessions for which no training was availed.

Manager of the training department explained that the ₹500,000 cost overrun on salary due to new hire of a trainer. The trainer's experience is very valuable to the company and hence to get her on board, the company had to offer a higher pay scale. Depreciation on office equipment was higher by ₹300,000 due to higher replacement cost of ageing equipment. A specialized software license resulted in an excess spend of ₹25,000. The manager argued that the rest of the expenses were normal increases which were not controllable.

Yash, the CEO, was understandably not happy with the cost over-run. Higher internal transfer price to the end user departments would affect employee morale. However, even though a cheaper option was available from an outside vendor, he could still foresee the value of investing in in-house training programs. Intangible benefits from these customized sessions, would definitely help the company's growth.

To conclude, he was not willing to shut down the training department. At the same time, he had to resolve the dispute resulting from internal transfer pricing in an amicable way. Like profits, teamwork is critical to success.

## Required

- (i) IDENTIFY the threats to goal congruence due to internal transfer pricing.
- (ii) During the meeting, an alternate transfer pricing methodology based on two-part pricing system was formulated. Costs would be segregated into fixed and variable categories. A transfer price for each category would be arrived based on budgeted costs and budgeted usage. The standard rate for fixed cost will be applied to the budgeted training sessions and charged to the user departments. The standard rate for variable cost will be applied to the actual training sessions and charged to the user departments. Fixed cost would be defined as those that are not directly impacted by the number of training sessions. CALCULATE the transfer price to be charged to each department under this method.
- (iii) EVALUATE how the two-part pricing price method of transfer pricing address the threats to goal congruence as identified in question 1?

**Solution:** - Threats to goals congruence due to internal transfer pricing are:

- (a) User groups, consulting and customer service department are concerned that training department is not controlling its costs. Since the entire actual costs gets allocated to the users, training department may not be managing its costs efficiently. Since the financials of user departments are affected, it may lead to conflict between the departments.
- (b) Yash, the CEO is a firm believer of in-house training and its benefits. However, there are outside vendors that provide similar service at substantially reduced costs. Performance assessment of managers of consulting and customer service are based on their department's financial metrics. Higher internal transfer price for training would affect employee morale since they have no control over these allocated costs. However, their performance is being evaluated based on uncontrollable factors. This could lead to discontent among the managers. Alternatively, Yash may want to re-consider his strategy of in-house training. When suitable, training can be sourced to cheaper options available in the market, without compromising on quality.
- (c) Most costs of the training department are fixed in nature, as they need to be incurred irrespective of the number of training sessions. These costs are being allocated to the users based on actual training sessions. The budgeted target price is used by the user departments, to determine their billing model to Rest Easy's end user clients. Hence it is important that the budget transfer price is not very different from the actual transfer price charged at the end of the year.

In the given problem, internal transfer price has been based on a budget of 200 sessions. Here the customer service department does not adhere to its commitment of 100 training sessions, training sessions actually availed are only 80. Since costs are mostly fixed in nature, the actual cost per training session increases. This is then charged out to the consultant and customer service departments. Consequently, despite meeting its commitment, the consultant department bears a higher cost allocation due to

variance in the usage of training resources. This can lead to friction between the user departments.

- (ii) By segregating the costs into fixed and variable components, Rest Easy is working out two-part pricing system for transfer price.

### **Two-Part Pricing System = Lump-Sum Charge + Marginal Cost**

To segregate the costs into fixed and variable categories, the criteria is whether the costs change per additional training session. Accordingly, the classification of costs will be as below:

<b>Cost Particulars</b>	<b>Budget (₹)</b>	<b>Classification</b>
Salaries	25,00,000	Fixed
Depreciation on Office Equipment	2,00,000	Fixed
Software Licenses for Training Packages	80,000	Fixed
Conference Travel for Train the Trainer Sessions	10,000	Fixed
Telephone	20,000	Fixed
Training Supplies	50,000	Variable
Trainee Lunch	100,000	Variable
<b>Total Expenses</b>	<b>29,60,000</b>	

The lump-sum charge would be based on the fixed cost budget. Marginal cost would be based on the variable cost budget.

Total budget fixed expenses = ₹28,10,000 and total budget variable expenses = ₹150,000. Number of training sessions is 200, that is 100 each for consultant and customer service departments. Hence the fixed cost allocation rate would be ₹14,050 per session and variable cost allocation rate is ₹750 per session.

Transfer price to the consulting department = lump-sum charge + marginal cost

= (Standard Fixed Cost *per session* × Budgeted Training Sessions) + (Standard Variable Cost *per Session* × Actual Training Sessions)

= (₹14,050 × 100) + (₹750 × 100)

= ₹14,05,000 + 75,000

= ₹14,80,000.

Transfer price to the customer service department = lump-sum charge + marginal cost

= (Standard Fixed Cost *per session* × Budgeted Training Sessions) + (Standard Variable Cost

per session × Actual Training Sessions)

= (₹14,050 × 100) + (₹750 × 80)

= ₹14,05,000 + ₹60,000

= ₹14,65,000.

Total transfer price allocation is ₹29,45,000 versus actual expenses of ₹38,25,000. Unallocated expenses are ₹880,000.

- (iii) Evaluate how the two-part transfer pricing model would address the goal congruence issues listed in question 1?
- (a) Since transfer prices are based on budgets, the training department would become more cost-conscious. As explained above, as per this transfer pricing method, unallocated expenses of ₹880,000 would have to be borne by the training department. As given in the problem, this variance is mainly on account of extra cost for the newly hired trainer and the higher depreciation expense. The department will be more cautious while taking future decisions. However, Yash the CEO must ensure that the quality of training is not compromised and remains in line with the company's strategic policy.
- (b) Internal transfer price of ₹14,800 per session is still higher than the outside rate of ₹12,000 per session. Further decisions would be based on the company's strategic objective. At the same time, if the number of training sessions are expected to increase beyond the budget, this transfer pricing method charges the user department only a marginal cost of ₹750 per session. This is definitely lower than the external rate.
- (c) Under this method, fixed expenses that form majority of the cost are allocated based on budgeted cost and budgeted usage. Variable expense is allocated based on actual training sessions. Hence, any variance in the utilization of training resources, does not impact the other user department.

Therefore, most of the goal congruence issues can be addressed through this methodology.



## Case study of Six Sigma & Transfer Price

**Question 44:** - CPT Limited manufactures furniture made of MDF Board for domestic use and plywood for commercial use. It has three divisions-Furniture Division, Plywood Division and Retail Division.

The furniture division purchases raw materials from external suppliers and performs all manufacturing and packaging operations. All sales of furniture are made through the retail division which has 120 retail stores in India as well as through its own website. Furniture is sold in boxes for customers to assemble themselves. About 20% of the furniture sold by CPT Limited is purchased already packaged from other manufacturers. All deliveries are outsourcing through a third-party distribution company.

CPT Limited's objective is to maximize shareholders wealth by producing new model functional

furniture and plywood board at low cost. The CEO is concerned about increasing levels of returns of furniture made by the customers and increasing number of customers complaining on online forums about furniture purchased from CPT Limited. Not a single case of return of plywood board was reported in past three years.

Considering the impact of return of its products, the CEO has approached you as a performance management expert to help the company in implementation of Six Sigma technique to reduce the number of products returned and define customer's requirements and measure existing performance of the company.

A team of managers has been recently trained in Six Sigma. The returns data are compiled every six months along with the Key Performance Indicators (KPIs) for customer satisfaction. The last compilation indicates that 92% of customers were satisfied with the manufacturing quality of furniture.

The Following reasons are given by customers while quality of furniture:

Category	Reasons for return of furniture	% Responses
1	Difficult to assemble or parts missing	48%
2	Goods arrived damaged	13%
3	Goods were not as described or were defective	27%
4	Goods were of poor quality or no longer wanted	10%
5	Arrived late	2%
	Total	100%

Since last year the plywood division has also started to manufacture MDF Board on pilot project basis in small quantity. Based on the feedback from the market the management of CPT limited decided to manufacture MDF board at large scale in the plywood division in the forthcoming year. CEO has also decided that for manufacture of furniture, MDF boards should be purchased from the plywood division.

Details of furniture and plywood divisions are given below:

### **Furniture Division**

35,000 MDF boards for standard size will be needed in the next year. External suppliers could supply at ₹800 each.

### **Plywood Division**

It has the capacity to produce a total of 60,000 MDF boards of standard size per year. Budgeted details for the forthcoming year are as follows:

Budgeted Sales volume	60,000 units
Selling price per unit for external sale	₹850
Variable cost per unit for external sale	₹ 770

The variable cost per unit will be ₹ 20 per unit lower in case of internal sale, due to cost savings on distribution and packaging.

Maximum external demand for MDF boards is 30,000 units per year.

Required:

- (i) Advise the CEO how six sigma technique could be implemented using DMAIC methodology so as to reduce the sales returns from customers.
- (ii) Advise with the help of suitable calculations. The number of MDF boards that plywood division should internally supply to furniture division in order to maximize the group profit.
- (iii) Recommend the transfer price at which these internal sales be made.

**Solution: -**

**Part I:**

The DMAIC process is a technique used to implement six-sigma to improve existing processes and is split into five phases as described below.

- **Define the process:** The CEO is concerned that the increase in returns from customers is increasing costs and threatens to affect the company's brand. Six sigma focuses closely on the requirements of the customer and it is important to be clear exactly what customers' requirements are and, in this case, specifically why products are returned. The objective of the project needs to be clear, in this case to reduce the number of customer returns. Customers will expect certain minimum requirements from the manufacturing and packaging process. Customers' perceptions of quality should correspond to the price paid, though different customers will have different expectations of this. Customers may be particularly pleased with furniture which is delivered early or at a time especially convenient to them, or which is robust, durable and 'well-made'. While products which significantly exceed customers' expectations will enhance the company's brand, it may also indicate a quality of manufacture which is too high and allow company to reduce manufacturing costs while still having mainly satisfied customers.
- **Measure the existing process:** The current returns figures do give some data to as to why products are returned, but its usefulness is limited as it is unclear which of the categories relates to defective manufacture, and which relate to activities of other divisions. The ambiguity of the data and category definitions will need addressing to enable the process to be measured effectively. Returns in Category I could

be because the goods were not manufactured or packed properly in the manufacturing division, but could also be due to poor design, customers losing components or simply being unable to assemble furniture. Damaged goods in Category 2 probably do not arise because of defective manufacturing either, though customers may wrongly categorize defective goods as damaged. For the other categories it is less clear. Though goods may become damaged by the distribution company, it seems that only a small number of returns relate directly to them. Returns in Categories 3 and 4 could be due to defective manufacture or if the customer had simply changed their minds and no longer wanted the product. In Category 3, the identification of 'defective' items is too broad. Returns in Category 5 which arrived late are clearly not due to manufacturing defects and as this causes only 2% of returns, is relatively insignificant. Currently 20% of company's sales are of products from other manufacturers. There is no indication from the data given how many of the returns relate to these products, nor of the total number of returns relative to the number of items sold. Therefore, the existing data are insufficient to reliably measure existing performance and take no account of inputs such as raw materials. Only items which customers value should be measured. The CEO has suggested more detailed data are required, for example, on overall customer satisfaction with the manufacturing, but this is at 92% which already seems high and there is little point in incurring costs to measure what customers are already satisfied with. In the context of the six-sigma project, there is little that can be done to improve this particular area and such items should not be measured.

- **Analyze the process:** This stage is where the root causes of the problems are identified. Additional information may be needed, for example, to analyze customer returns by type of product, by country of sale or with a clearer definition of what is meant by 'defective'. By doing so, company may identify areas of the business where customer returns are particularly high and so be able to focus on these.
- **Improve the process:** At this stage the proposals for improving the process are implemented and availability of resources and likely costs of making the improvements need to be carefully considered. Company may need to consider which aspects of the production or packaging process could be improved, for example, by better maintenance or calibration of machinery. Additional training of staff may also be required.
- **Control:** This is the on-going monitoring that the reduction in customer returns due to defective manufacturing is being maintained. Reporting on the number of returns may be done by exception if they reach a particular level. In CPT Limited, it seems likely that the data on customer returns used to manage this process will need to be redesigned to make it clearer in which responsibility center the problems arise. The ongoing monitoring may indicate that some of the earlier stages in the DMAIC process need to be revisited.

**Part 2 and Part 3: Decision on number of MDF boards to be transferred and fixation of transfer price:**

Minimum Transfer Price	Variable cost + opportunity cost
Maximum Transfer Price	External purchase price $\pm$ change in cost

**Calculation of Minimum Transfer Price:**

- Plywood division currently has capacity of 60,000 MDF boards and it has external demand for 30,000 boards. Therefore, it has idle capacity of 30,000 boards
- **Transfer price for first 30,000 boards = Variable cost = Rs.750** [There will be no opportunity cost; Additionally, variable cost per unit is Rs.20 lower and hence the same would be Rs.750 per unit]
- Transfer price for balance 5,000 boards = Variable cost + Opportunity cost = Rs.750 + Rs.80 = Rs.830 per unit

**Calculation of Maximum Transfer Price:**

- External suppliers are currently supplying at prices of Rs.800 per unit and hence the maximum transfer price by Furniture Division would be Rs.800 per unit

**Decision:**

- **Comparing the minimum and maximum transfer price, we can conclude that the company should go for transfer of 30,000 boards. The transfer price for 30,000 boards can be fixed between Rs.750 per unit to Rs.800 per unit**
- Balance 5,000 boards cannot be transferred as minimum transfer price of Rs.830 per unit exceed maximum transfer price of Rs.800 per unit. This would indicate that a transfer is not feasible



## CHAPTER 10

# Strategic Analysis of Operating Income

### CASE STUDY: KAIZEN COSTING

Zen Limited is a leading mobile manufacturing company and sells its mobile phone across the world. In a fast-changing technological environment, Zen has been able to maintain its leadership in smartphones segment for third year in a row now. Though the revenues have grown year on year, the costs have increased at a higher rate in the mobile phone industry as a whole.

“We have been leaders in revenue. We must lead in cost reduction front as well. I believe we can achieve this with improvements overtime, however minor they might be!”

– This is what the CEO of Zen has told its directors in a recently concluded board meeting.

The net profit margins of the company has fallen from 10% in 2016 to 8% in 2017 owing to rise in raw material & repair cost. Another significant rise in the cost was on account of repairs of mobiles which are under warranty. There was an increase in these repair costs by 1.5 crores which represents 1% of the total turnover of the company.

The process of repairs/replacement of under warranty product is outlined below:

- The company own 200 repair centers in various cities in India.
- A customer whose phone is under warranty and requires replacement/repair visits any of the 200 centers to deposit the faulty mobile phone.
- The technician at service centers examines the phone and the service center sends the phone to a centralized repair Centre at Mumbai. The phones are sent to Mumbai even for minor repairs which can be done locally if requisite infrastructure is provided to the service centers.
- The phones are sent in batches. Each service centre creates 3-4 batches of mobile phones in a day. (A recent study showed that the batches could be combined into a single batch per day)
- The phones are repaired in Mumbai’s centralized centres and sent back to the respective service centres for handing them back to the customer. The phones which are repaired are sent in separate batches and those which are replaced are sent in separate batches.

#### Required

You are working as a Finance Manager in Zen. The finance director has approached you to understand whether the minor improvement would be useful given the size of the company. The Finance Director has asked you to examine the process of warranty repairs and replacement and submit a report covering the following aspects:

- (i) What is the CEO referring to when he says “minor improvements”?
- (ii) What are the benefits of such minor improvements?

- (iii) Apply the above process to the warranty claim process and explain how the process can be improved.
- (iv) Any other matter which you consider relevant.

### **Solution:**

#### Issue

Zen limited is a leader in manufacturing of mobiles and is concerned about increasing costs. The increase in warranty related costs has been significant in the current year as compared to previous year. This has reduced the net profit of the company by 1% of sales.

#### Applicability of Kaizen Costing

“Kaizen” is a Japanese word which means “Change for Better”. In business parlance, Kaizen is used to refer to small and continuous improvement across all functions, processes and employees. Kaizen costing is a cost reduction system. Yashihuro Modem defines Kaizen Costing as "the maintenance of present cost levels for products currently being manufactured via systematic efforts to achieve the desired cost level.

Toyota Production System is considered as a pioneer in Kaizen Costing. Though the model was used for eliminating wastage from production at factory initially, the concept can be applied in any of the processes in a business. Since Kaizen is a continuous improvement process, a radical change or disruptive innovation is not expected in Kaizen costing.

#### The following are the key features of Kaizen -

- Kaizen processes focus on eliminating waste in the systems and processes of an organisation, improving productivity and achieving sustained continual improvement.
- Application of small, incremental changes routinely applied and sustained over a long period can lead to significant improvements.
- It aims to involve workers from multiple functions and levels in the organisation.
- A value chain analysis helps to quickly identify opportunities to eliminate wastage
- Although incremental changes can often be too small to be seen, Kaizen can be very effective in the long run. An airline which identified that 75% of its flyers would leave the olive from salad, the airline decided to remove it from its servings. This saved the airline \$ 40,000 per year. Another example is where an airline stopped printing its logo in the rubbish bags as it did not add value saved over \$ 300,000 per year.

The CEO is referring to Kaizen costing when he mentions minor improvements to save costs over time. Kaizen costing takes into consideration various costs such as costs of supply chain, manufacturing costs, marketing, sales, distribution costs etc.

#### Benefits of Kaizen Costing

- Kaizen reduces waste in areas such as employees waiting time, transportation, excess inventory etc., which leads to improved efficiency in overall business processes and systems.
- A company applying Kaizen philosophy can achieve cost reduction through small incremental improvements and cost savings.
- Kaizen looks at functions and processes at all levels of organisation and requires participation of all employees and massive as well as open communication system. This participative approach improves teamwork across the organisation.
- Product improvement using Kaizen is likely to result in less number of defective products leading to customer satisfaction and reduction in warranty related costs.
- The reduction in wastage, improved efficiency and cost reduction improves the overall profitability of the company.

### Implementation of Kaizen in the Current Case

The implementation of Kaizen as a cost reduction technique can take several forms. The key question to ask for implementation is - “Can we eliminate waste?”. The waste can take several forms like—

- Unnecessary movement of material and men - Travelling for meeting in cases where a video conferencing could help.
- Unwanted part in a product which if removed is not likely to impact the performance of the product. (Nano sim card has reduced a significant portion of use fiber boards as compared to the traditional sim cards.)
- Defects which involve extra cost in terms of reworks.
- *Waiting time* - A simple example could be locating for files in your computer which has not be arranged properly. This leads to waste of time.

The above is just an indicative list where improvements can be made. However, an important point to note is that reduction of waste should not be done by compromising the quality of product. Apple launched iPhone 5c as a budget phone by using plastic material instead of Aluminum. The market did not like the product as it was considered to be an inferior product as compared to iPhone 5s.

### Another way of looking at Kaizen is asking following questions -

- Can we eliminate functions from the production process without compromising the quality and utility of end products? - Removing unnecessary movements of material and men.
- Can we eliminate some durability? - Use of unbreakable plastic for producing disposable glasses would be waste of resources
- Can we minimize design? - e.g. use of Nano Sims.

- Can we substitute parts of the product being manufactured? – Can we take supplier’s assistance to get better quality parts?
- Is there a better way? - This is a question which must be asked continuously to ensure that the improvement is not a one-time exercise.

**(The above questions also form a part of the Value Engineering Process)**

Application of Kaizen at Zen Limited

The current warranty claim process at Zen involves movement of mobile phones from various service centres across the country to a centralised centre in Mumbai. The possible improvements in the claim process are explained below -

- The company needs to analyse whether it requires to own 200 centres by itself across the country. The company can evaluate closing down centres with less customer footfalls or outsource the ones which are not located at the strategic location. This would save some cost to the company.
- The current process requires each service centre to send the faulty mobile phones back to Mumbai for repair or replacement. This is done even in case of minor repairs which can be handled locally. The company can provide necessary infrastructure to the service centres to carry out minor repairs locally. This would save logistics cost of sending the phones to Mumbai and back to service centre. The company should analyse the past data to understand the proportion of phones which require minor repair. Repairing the phones locally would also reduce the turnaround time and the customer will get back the phone faster.
- The current process is to send phones in 3-4 batches in a day. This effectively means creating 3-4 consignments, documents for dispatches and incurring extra costs for transportation. Combining the phones in a single batch would reduce the cost of transportation and administrative cost as well.
- The phones can be sent back from Mumbai in single batch instead of creating multiple batches to save transportation costs.

The above improvements must be revisited continuously to derive required benefit from Kaizen process.

Apart from eliminating waste in the warranty claim process, the company must also identify root causes of increase in warranty claims in the current year as compared to previous year. Every phone being sent back for repair/replacement involves avoidable cost. The company must also revisit the manufacturing process and quality control processes to eliminate wastage in production process and improve quality.

- Zen can consider producing better quality mobiles at the manufacturing process to reduce the warranty claims.
- The pattern of warranty claim must be analysed to understand whether there is certain

common problem related to repair claims. If the issue has some relation with parts used in mobile, the issue can be taken up with supplier of such parts



## CHAPTER 11

# Budgetary Control

### CASE SCENARIO No: - 1 Real Petroleum

Real Petroleum Corporation manufactures lubricant oils for motor vehicles (two wheelers, four wheelers and heavy vehicles). The company offers lubricant oils in various packages ranging from a 100 ml pouch to a 200 liters drum. About 70% of lubricant sales comprise are made in the form of 900 ml 'cans'. The process of manufacturing and packaging lubricant oils are given below:

- Base oil of required grade is imported from middle east.
- The base oil is blended with additives at the manufacturing plants at specified temperatures to produce lubricant oils.
- The oil is stored for a day to bring the temperature to normal.
- The plant has an automated bottling facility. The operator is required to preset the quantity and number of 'cans' to be filled in a computerised system. No manual intervention is required thereafter.
- The product is filled in 'cans' at the first stage of packaging with 900 ml of product.
- Caps are fixed on the 'cans' and sealed at the second stage of packaging.
- The product is weighed at third stage of packaging (a conversion factor is used to cover volume into weight) before the 'cans' are packed into a carton.

Any 'can' have lesser quantity of oil is removed before the 'cans' are packed into the cartons. The 'cans' which are short filled cannot be reused. Once the seal is broken, the 'can' is of no use. There is no process by which the oil in short filled 'can' could be reused. Hence the product is wasted.

The company is considering a proposal to add a component in its packaging unit to avoid losses arising out of quantity issues in packaging. The component will be installed after the first stage of packaging. The component will measure the volume of product and will forward the 'can' for capping and sealing only if the quantity in 'cans' is correct. In case the 'can' does not have required volume of product, the 'can' will be topped up with balance product before the capping and sealing process. The company will be able to achieve 0% wastage due to short filling after implementation of new system.

#### Required

Using the context of control systems, IDENTIFY and EXPLAIN the type of control which is existing in the company and the type of control which is proposed.

#### **Solution:**

Control is a management function of establishing benchmarks and comparing actual performance against the benchmarks and taking corrective actions. Control is required at all levels of organisation to ensure that the organisation achieves its intended objective. There are two types of control systems - Feedback Control and Feed-forward Control.

**Feedback Control:** Feedback Control is a control activity that takes place after a process is complete. It is also known as post action control. If any problem is identified after a process is complete, a corrective action is taken to rectify the problem. Feedback control provides information only after the process is complete and sometimes a significant time is lost to take corrective action. Feedback-based systems have the advantage of being simple and easy to implement.

Real Petroleum currently has a feedback control mechanism in place. The actual volume of the product is measured at the end of the packaging process. The current control process is that any 'can' which is short filled is not packed in the carton. This ensures that a lower quantity of product is not supplied into the market. The current control system, however leads to product losses as identification of short-filled 'cans' at the end of process is not useful to the production process. In case, there is a huge variation in the final packaging, the packaging system can be reviewed to ensure that such problems do not acquire in the future.

**Feed-forward Control:** Feed-forward Control is also referred to as a preventive control. The rationale behind feed- forward control is to foresee potential problems and take corrective action to ensure that the final output is as expected. Feed-forward controls are desirable because they allow management to prevent problems rather than having to cure them later. Feed-forward control is costly to implement as it requires additional investment and resources. These are designed to detect deviation some standard or goal to allow correction to be made before a particular sequence of actions is completed

The proposed system in Real Petroleum is a Feed-forward control. In this case, any short filling is identified in the packaging process itself and corrective action is taken to ensure that the final packed 'can' has proper quantity of product. The new process is beneficial to the company as the wastage arising out of the packaging process can be avoided. The savings must be compared with the cost required to modify the packaging process before finalising on whether the new system should be implemented or not.

## CASE STUDY No: - 2 Feedforward control and Feedback Control

EW Partners, a leading strategy and management consulting firm is preparing its budgets for the year to 31 March 2019. One of partner 'W' is concerned about liquidity, he argued, that a firm with adequate liquidity has less risk of being unable to meet their liabilities than an illiquid one. Where a firm has adequate liquidity, there is also the possibility of enriched profitability through reduced interest outlay or increased interest income, together with greater financial flexibility to negotiate enhanced terms with suppliers and financiers or participate in new business opportunities. Accordingly, he desires to reduce the firm's CC to zero by 30 September 2018 and to have a positive cash balance of Rs. 145,000 by the end of the year.

### Required

COMPARE and CONTRAST, feed forward control and feedback control in context of the above information.

### Solution

In feed-forward control instead of actual results being compared against desired results, *forecasts are made of what results are expected to be at some future time*. If these expectations differ from what is desired, control actions are taken that will minimize these gaps. In the scenario, EW Partners has following 2 expectations—

the first of these is to reduce the CC to zero by 30 Sep 2018 and

the second is to have a positive cash balance of Rs. 145,000 by 31 March 2019.

Therefore, to achieve above expectations, a cash budget will be prepared based on various functional budgets showing cash inflows and outflows for each month so that the firm can identify its anticipated monthly cash balance. This can then be compared with the firm's expectations to see if their cash balance objectives are being achieved. However, if the objectives are not met by these budgets, these budgets may need to be revised by changing the levels of activities. It is the process of *feedforward control*.

Feedback control involves monitoring results achieved against desired results and taking whatever corrective action is necessary if a deviation exists.

Thus, in the case of EW Partners, a comparison of the actual monthly cash balance can be made against the budgeted cash balance for that month. As with any budget and actual comparison there may be an adverse or favorable variance. If this is substantial, then further analysis may be needed to determine its reason. It may be that costs above budgets, cash receipts lower than expected or receivables took less time to pay than expected, or payables were paid later than expected. This comparison process is *feedback control*.

### Conclusion

Feedforward control attempts to take corrective action before an event, whereas feedback control takes corrective action after the event.



## CASE STUDY No-3: Feedforward control and Feedback Control

SW & Co. is a firm of Chartered Accountants having head office at Delhi and four branches in different parts of Northern region. They are providing wide range of services to their esteemed clients. Their core services include Taxation, Corporate Audits Bank Audits, Management Audits and Project financing. The firm is preparing its budgets for the financial year 2019-2020.

The Senior partners of the firm have stated that they would like to pay off the firm's loan taken from a public sector bank two years back for the renovation of their office premises this year and to have a positive cash reserve of Rs. 2,00,000 by the end of the year.

While comparing the actual cost with the budgeted data of last year, it was revealed that travelling costs were much higher than the budgeted costs. Fees receivable from some clients were also pending for more than three years distorting the expectations of cash budget.

Discuss the differences between feed forward control and feedback control using the above information about the cash budget of SW & Co.

**Solution:** - Feed forward control systems are the comparison of draft plans with the objectives of the company.

In the scenario provided the consultancy firm has a number of objectives, two of which are related to their cash flow. The first of these is to pay off the loan by the year end and the second is to have a positive cash reserve of ₹ 2,00,000 by the year end.

An initial draft of the cash budget will be produced based on the expected receipts and payments and other costs of the firm. Cash budgets to be prepared showing the cash inflows and outflows for each month so that the firm can identify its expected monthly cash balance. This can be compared with the company's objectives to see if their cash balance objectives are being achieved. It is this comparison that is the process of feed forward control.

It is also referred to as a preventive control. The rationale behind feed forward control is to foresee potential problems and take corrective action to ensure that the final output is as expected. Feed forward controls are desirable because they allow management to prevent problems rather than having to cure them later. Feed forward controls are costly to implement as it requires additional resources and investments.

Feedback control systems are the comparison of actual results against the budget that has been approved. Thus, in the context of the SW & Co., actual travelling costs comparison made against the budgeted costs and overdue fees receivables are also the process of feedback control.

As with any budget and actual comparison there may be an adverse or favorable variance. If this is significant then further analysis may be required to determine its cause. This comparison process is feedback control. It is also known as post action control. If any problem is identified after a process is complete, a corrective action is taken to rectify the problem. Feedback based system have the advantage of being simple and easy to implement.

Thus, initially the difference between feed forward control and feedback control systems is that feed forward occurs in the budget setting stage whereas feedback control occurs during the year. This means that feed forward identifies potential problems before they occur whereas feedback identifies problems after they have happened.



## CASE STUDY No: - 4

A Departmental manager is responsible for the cash budget for the department for the year. The organization uses feedforward control systems.

The cash budget at the start of the year stated that there would be a cash balance of \$4,00,000 at the beginning of June and that a piece of capital equipment costing \$ 320,000 was to be purchased in the month.

Two months earlier, In April, using the feedforward control systems in the organization, the manager responsible for the budget realized that the cash budgets were optimistic and that because some credit customers are paying later than was expected the expected cash balance will be only \$220,000 at the start of June.

### Feedforward Control

Feedback control has two elements here. Firstly, it has been used to identify a problem in advance (i.e., in April). The manager can see that the department will not have enough cash in June to purchase the machine as planned.

Secondly having anticipated the potential problem if the machine is purchased. It allows the managers to take steps to eliminate the problem before it occurs.

- The department could simply delay the purchase of the machine for 1 or 2 months.
- Or it could negotiate with the supplier of the equipment to see if they would be willing to accept installments.
- Or it could speak to the bank manager and obtain a temporary overdraft, etc.



## CASE SCENARIO No: - 5 (Behavioral Aspect)

“It’s frustrating working with Denial. He’s very dominant and expects everything to be done his way. We have done more and better work to get up to budget, and the minute we make it he tightens the budget on us. We can’t work any faster and still maintain quality. We always seem to be interrupting the big jobs for all those small rush orders. The accountants seem to know everything that’s happening in my department, sometimes even before I do. I thought all that budget and accounting stuff was supposed to help, but it just gets me into trouble. I’m trying to put out quality work; they’re trying to save money. This is a dead-end job. I don’t see much of a future here.”

– said Mr. Singh, manager of the machine shop of Global Mfg. Ltd. A UK based Company. Mr. Singh had just attended the monthly performance evaluation meeting for plant department

heads. These meetings had been held on the third Friday of each month since Mr. Denial, MBA from Manchester University, had joined the Indian operations a year earlier. Mr. Singh had just been given the worst evaluation he had ever received in his long career with Global Mfg. Ltd. He was the most respected of the experienced machinists in the company. Old Plant Manager had often stated that the company's success was due to the high quality of the work of machinists like Mr. Singh. He had been with Global Mfg. Ltd. For many years and was promoted to supervisor of the machine shop when the company expanded and moved to its present location. As supervisor,

Mr. Singh stressed the importance of craftsmanship and told his workers that he wanted no careless work coming from his department.

When Mr. Denial became the plant manager, he directed that monthly performance comparisons be made between actual and budgeted costs for each department. The departmental budgets were intended to encourage the supervisors to reduce inefficiencies and to seek cost reduction opportunities. The company controller was instructed to have his staff 'tighten' the budget slightly whenever a department attained its budget in a given month; this was done to reinforce the plant supervisor's desire to reduce costs. Mr. Denial often stressed the importance of continued progress toward attaining the budget; he also made it known that he kept a file of these performance reports for future reference.

#### Required

IDENTIFY the problems which appear to exist in budgetary control system and explain how budgetary control system could be revised to improve the effectiveness.

#### **Solution: -**

The budgetary control system appears to have several very important shortcomings which reduce its effectiveness and may in fact cause it to interfere with good performance. Some of the short comings are explained below.

- **Lack of Coordinated Goals:** Mr. Singh believe that high quality output is the goal; it now appears low cost is the goal. He does not know what the goals are and thus cannot make decisions which lead toward reaching the goals.
- **Influences of Uncontrollable Factors:** The actual performance relative to budget is greatly influenced by uncontrollable factors i.e., rush orders. Thus, the variance reports serve little purpose for evaluation of performance.
- **The Short-Run Perspectives:** The monthly evaluation and the budget tightening on a monthly basis result in a very short-run perspective. This will result in inappropriate decisions.

The improvements in the budgetary control system must correct the deficiencies described above. Accordingly: -

- Budgetary control system must more clearly define the company's objectives.
- Budgetary control system must develop an accounting reporting system which matches

controllable factors with supervisor responsibility and authority.

- Establish budget values for appropriate time periods which do not change monthly simply as a result of change in prior month's performance.

The entire company from top management level to down level must be educated in sound budgetary procedures so that all parties will understand the total process and recognize the benefit to be gained.



## Summary

### Participation in Budget setting Process

<b>Top-down approach</b>	<b>Bottom-Up approach</b>
<b>Advantage</b>	
1: - Imposed style budget	(Participating Budget)
2: - Can be produced quickly	Subordinate managers prepare their budget themselves & reviewed by Senior management.
3: - Less management time.	Easily accept the target due to ownership feelings.
4: - Senior know the strategic direction of the company	They have better understanding of result & cost i.e., Method of working.
5: - Important external factor that effect it, so they may prepare a good set of planning guidelines for sub ordinate.	Can't blame for unrealistic goals as they set themselves.
	They are highly motivated.
	It creates a sense of responsibility & Creativity.
	They feel that they are being appreciated for the value, that their experience contributes to organisation.
	They get an opportunity of discuss in organisation issue i.e., exchange of information/idea.
<b>Dis-advantages</b>	
1: - May be sometime not acceptance by subordinate	They may be excellent in academic but could lack of practical knowledge.
2: - Little participation of low-level staff in budget process.	Participative budget is less effective in following situation: -
3: - No interest of low-level staff since it ignores their involvement.	a: - Personality traits of participation (EGO, DICTATORSHIP)
	b: - May consume a great deal of Time arguing with each other.

	c: - Artificially inflate the proposed budget.
	d: - Highly Programmed, technologically structure (they have no role to contribute)
	e: - When they are so negative, Low degree of control over destiny.
	f: - When Job difficulty is low i.e., very simple then they may manipulate, introduce budgetary Slack. (Artificial create)
	g: - Where we have large no. homogeneous unit.

**CRUX:** - Since both top down and bottom up approached are legitimate approaches, so company can use combination of both. Seniors know the strategic direction of the company and the important external factors that affect it, so they might prepare a set of planning guidelines for the low level. These guidelines may include forecast of key economic variables and their potential impact on the Company, plans for introducing a new product and some board sales targets etc. With these guidelines low level might prepare their individual budget. These budgets need to be reviewed to validate the uniformly with the Company objectives. After review, if changes are to be made, the same should be discussed with low level involved.



### CASE STUDY No: - 6 (Participative Budget)

Established in the year 1997, Excellent woodcraft Private Limited (EWPL) is one of the distinguished manufactures and suppliers of an unlimited array of Wooden Furniture Items. Product compilation comprises of Modular Furniture, Workstations, and Cafeteria Furniture. Moreover, it is also engaged in presenting Furniture Services that include interior Fit out, Office interiors and corporate interior Designing. Since inception, it has strived to proffer an excellent blend of optimum quality and price, and successfully established the company as the preferred choice of customers in the past years. This is the reason that its products and services are applauded in the industry for its flawlessness.

At EWPL, a world class infrastructure is set up with different types of latest technology-based machines and equipment which provide great support in hassle-free production and storage of the preferred assortment. Besides the spacious workspace, it has recruited a team of skilled and experienced professionals, who are magnificently trained to understand and meet the diverse client equipment within the committed time period. It aims to attain complete client satisfaction and put in its best efforts to achieve the same by offering outstanding product range & feasible services.

#### EWPL's Budgeting Process for sales

I: - Each salesgirl makes a customer wise listing of sales for the last few years. Based on this information and her knowledge about customer's requirements, she determines an overall

sales goal.

- 2: - The sales manager, W Robert gathers all this information and modifies it a bit. A Particularly W looks at variance in sales growth and modifies low projections to be in line with the average. He, of course, discusses this correction with the concerned sales girl. The usual approach is to hold up the other forecasts and attribute lack of sales growth to lowest talent.
- 3: - W then meets with J Donald, Managing Director. By this time, J already back out of his sales expectations for next year based on his desired profit. J discusses the overall target with the W. The usual result is a 7% to 10% increase in projected sales which the W allocates among the salesgirl based on their past performance.
- 4: - Of course J desires that the W discuss and negotiate any alteration with the sales force. He believes that with appropriate logics, not high but attainable targets for his sales team can be met.

#### Required

- 1: - Discuss the participative nature of the sales budgeting process at EWPL.
- 2: - Advice on best approach from EWPL's perspective that may be adopted.

**Solution:** - In participative budgeting, subordinate managers create their own budget and these budgets are reviewed by senior management. Such budget communicates a sense of responsibility to subordinate managers and fosters creativity. This is also called bottom-up approach (sometime referred as participative approach).

As the subordinate manager creates the budget, it might be possible that the budget's goals become the manager's personal goal, resulting in greater goal congruence. In addition to the behavioral benefits, participative budgeting also has the advantage of involving individuals whose knowledge of local conditions may enhance the entire planning process.

The participative budget described here appears participative in name only. In virtually every instance, the participative input is subject to oversight and discussion by sales manager. Some amount of revision is also common. However, excessive and arbitrary review that substitutes a top-down target for a bottom-up estimate makes a deceit process. Such a gutting appears to be the case in EWPL. J's statement indicates a very autocratic style. The revision process also seems to be arbitrary and capricious. There is little incentive for the salesgirls to spend much time and effort in projecting the true expected sales because they know that the target would be revised again and J's estimate will prevail. This situation creates an interesting discussion about the costs and benefits of participative budgeting and gives rise to game playing and slack.

In top-down approach, budget figures will be imposed on sales personnel by senior management and sales personnel will have a very little participation in the budget process. Such budget will not interest them since it ignores their involvement altogether. While in bottom-up approach, each sales person will prepare their own budget. These budgets will be combined and reviewed by seniors with adjustment being made to coordinate the needs and goals of

overall company. Proponents of this approach is that salespersons have the best information of customer's requirements, therefore they are in the best position in setting the sales goal of the company. More importantly, salespersons who have role in setting these goals are more motivated to achieve these goals. However, this approach is time-intensive and very costly when compared with top-down approach. In order to achieve personal goals, participants may also engage in politics that create budgetary slack and other problems in the budget system.

Since both top down and bottom-up approaches are legitimate approaches, so EWPL can use combination of both. Seniors know the strategic direction of the company and the important external factors that affect it, so they might prepare a set of planning guidelines for the salesgirls. These guidelines may include forecast of key economic variables and their potential impact on the EWPL, plans for introducing and advertising a new product and some broad sales targets etc. With these guidelines, salesgirls might prepare their individual budget. These budgets need to be reviewed to validate the uniformity with the EWPL's objectives. After review, if changes are to be made, the same should be discussed with salesgirls involved.



## Summary: -

### Organization Structure: -

<b>Top Level</b>	J Donald (Managing Director) ↓
	W. Robert (Sales Manager) ↓
<b>Operational Level</b>	Sales Girl

**Solution:** - a: - Meaning of bottom up (Advantage & Disadvantage)

b: - Meaning of Top down (Advantage & Disadvantage)

c: - Current Approach of the company

Initially: - Bottom Up

But at the end: - Top Down

Bottom up for name sake.

## Summary: -

### Participation in Budget setting Process

<u>Top-down approach</u>	<u>Bottom-Up approach</u>
Imposed style budget	(Participating Budget)
Can be produced quickly	Subordinate managers prepare their budget themselves & reviewed by Senior management.
Less management times.	Easily accept the target due to ownership feelings.
May be sometime not acceptance by subordinate	They have better understanding of result & cost i.e., Method of working.
Little participation of low-level staff in budget process.	Can't blame for unrealistic goals as they set themselves.
No interest of low-level staff since it ignores their involvement.	They are highly motivated.
Senior know the strategic direction of the company	It creates a sense of responsibility & Creativity.
Important external factor that effects it, so they may prepare a good set of planning guidelines for sub ordinate	They feel that they are being appreciated for the value, that their experience contributes to organisation.

	They get an opportunity of discuss in organisation issue i.e., exchange of information/idea.
	<b><u>DIS - ADVANTAGES: -</u></b>
	They may be excellent in academic but could lack of practical knowledge.
	Participative budget is less effective in following situation: -
	a: - Personality traits of participation (EGO, DICTATORSHIP)
	b: - May consume a great deal of Time arguing with each other.
	c: - Artificially inflate the proposed budget.
	d: - Highly Programmed, technologically structure (they have no role to contribute)
	e: - When they are so negative, Low degree of control over destiny.
	f: - When Job difficulty is low i.e., very simple then they may manipulate, introduce budgetary Slack. (Artificial create)
	g: - Where we have large no. homogeneous unit.

**CRUX:** - Since both top down and bottom up approached are legitimate approaches, so company can use combination of both. Seniors know the strategic direction of the company and the important external factors that affect it, so they might prepare a set of planning guidelines for the low level. These guidelines may include forecast of key economic variables and their potential impact on the Company, plans for introducing a new product and some board sales targets etc. With these guidelines low level might prepare their individual budget. These budgets need to be reviewed to validate the uniformly with the Company objectives. After review, if changes are to be made, the same should be discussed with low level involved.

**Conclusion:** - Company should follow combination of both.



### CASE STUDY No: - 7 (Participative Budget)

**SPM**, a leading school of management in the heart of India's financial centre of Mumbai, preparing its budget for 2018. In previous years, the director of the school has prepared the budget without the participation of senior staff and presented it to the school board for approval. Last year the SPM board blasted the director over the lack of participation of his senior staff in

the budget process for 2017 and requested that for the 2018 budget the senior staff were to be involved.

#### Required

LIST the potential advantages and disadvantages to the SPM of involving the senior staff in the budget preparation process.

**Solution:** - There are potential advantages and disadvantages of the involvement of staff in the preparation of the budget. Potential advantages include:

Senior staff may agree to accept the targets because they would take ownership of it as their budget.

Senior staff may have a better understanding of what results can be achieved and at what costs. For example, they may have a better knowledge of individual courses and how they may be delivered more efficiently and cost effectively.

Senior staff cannot blame unrealistic goals as an excuse for not achieving budget expectations.

Senior staff would feel that they are being appreciated for the value that their experience brings to the running of the management school.

Senior staff may get the opportunity to discuss organisational issues, in which an exchange of information and ideas can help to solve problems and agree future actions.

Potential disadvantages include:

Senior staff may be excellent academically but could lack the practical knowledge required to formulate their budget.

Senior staff may limit the benefits of participation due to personality traits of participants.

Senior staff may consume a great deal of time arguing with each other (and with the school director).

Senior staff may decide among themselves to artificially inflate the proposed budget so that it is easier for them to attain the cost targets they have set.



#### CASE STUDY No: - 8 (Great Bus Tours Co.)

Great Bus Tours Co. Ltd. (GBTCL) is an open top double-decker bus sightseeing company, particularly identified with its special red and cream-colored buses. It commenced operating in small town of Meghalaya in June 2013 with four buses and as of 2017 operated over 44 buses in north east region of India. GBTCL operates five routes with stops at tourist destinations. The company runs hop-on, hop-off bus tours of various hills, with one 24-hour ticket valid for unlimited journeys on the route.

#### Budget Process/Incentive Plan

As a part of management performance control and incentive scheme it has been following participative budgeting approach. In GBTCL, budgeting is a joint process in which functional divisions develop their plans in conformity with corporate goals for the next financial year. Based

on these plans, divisions prepare functional budgets and send to the appropriate management for review and approval. The budgets after the incorporation of the feedback and suggestions received from the said management, are finalised for the implementation. Then, finalised budgets are used as yardstick for performance measurement. Comparing the actual performance with the yardstick, bonus and other performance related incentives are considered. The higher management believe that this performance control and incentive scheme is very helpful to measure the performance and fixing responsibilities for the responsibility centres.

### Budgeted Income Statement

('000)

Revenue	1,13,800
Less:	
Variable Costs-	
Direct Material (Fuel, Lubricants and Sundries)	13,600
Direct Labour	40,500
Variable Overheads	7,700
Fixed Costs-	
Operating Overheads (Buses, Garage, Salaries)	18,100
Marketing and Administration	10,700
Profit/(Loss) before taxes	23,200

### Current Year's Income Statement

('000)

Revenue	93,500
Less:	
Variable Costs:	
Direct Material (Fuel, Lubricants and Sundries)	19,600
Direct Labour	37,700
Variable Overheads	6,200
Fixed Costs:	
Operating Overheads (Buses, Garage, Salaries)	20,150
Marketing and Administration	10,100

Profit/(Loss) before taxes	(250)
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### Other Information

Surprisingly above given current year's actual results were not up to the mark. Actual results were clearly showing adverse performance in comparison with budgeted figures.

Managers of GBTCL were upset because they did not receive the bonus. Ms. Maggie, Tour Manager of Route No. 3, said –

“We lost 2 months revenue and fuel prices are almost doubled. We did our best but these circumstances were beyond our control and we should not penalize at all.”

In support of her statement, Ms. Meggie provided following additional information–

- Rain is common in Northern Region. But the past year set a record in numbers. In July the expected average was 1,577 mm and received was 1,810 mm, In August the expected average rain was 990 mm and actual received was 1,535 mm. Heavy rain in these two months disrupted normal life of the region.
- The fuel prices have risen almost continuously since last year due to surge in global crude prices.
- Additional operational expenses 22,00,000 also incurred to remove the milky appearance and give the stainless a nice new look effected by heavy rain.

She claimed that –

“Revised budget with consideration of the above factors would give different results and lead to different conclusions”

### Required

ANALYSE the tour manager's view.

### Solution

#### Analysis of Issue

It appears that GBTCL has been badly hit by the weather – high rain in July and August have led to a slump in business. Revenue have seen a fall of 18% over the budgeted figure. Direct Material (most of the fuel) is 21% of the Sales (compared to 12% of budgeted level) because of hike in fuel price. Variable Overheads are almost same. However, interestingly, there is a saving of 1,50,000 in Operating Overheads as compared to the budgeted figure after catering additional Operational Expenses of 22,00,000 (for removal of milky appearance etc.). Furthermore, there is reduction in Marketing & Administration Cost. The ratio of Salary to Sales rose to 40% in 2017 from 36% (as budgeted). This appears to be atypical. Instead, there should be a cut in this ratio due to slump in business.

Award of bonus in case of losses is not justified and managers should be held accountable for their operations. However, they should not be held accountable for the events beyond their

control. A manager cannot control movements in fuel price, yet he/she is supposed to have the most information and he/she is expected to correctly forecast movements in the prices of fuel. Managers shouldn't be penalized for the uncontrollable events.

Accordingly, in GBTCL, there should be revision in the budget to account uncontrollable events.

**Refer Table-3**

**Revised Budgeted Income Statement ('000)**

Revenue*	94,833
Less:	
Variable Costs-	
Direct Material (Fuel, Lubricants and Sundries) **	19,879
Direct Labour	33,750
Variable Overheads	6,417
Fixed Costs-	
Operating Overheads (Buses, Garage, Salaries)	20,300
Marketing and Administration	10,700
Profit/(Loss) before taxes	3,787

\*10 months revenue; \*\* at actual price levels

The Revised Profit Margin has come down to 4% as against the Target Profit Margin of 20%. This clearly indicates that the performance was benchmarked against the higher target. If original budget figure is used to measure the performance, it will punish employees for the reason which are beyond their control.

GBTCL is not too far away from Revised Profit Margin. Therefore, at least some bonus may be considered to be awarded to the employees which may create more employee loyalty and maybe beneficial for long term.

Further, continuous monitoring of Budget Performance (achievement/failure) in GBTCL is essential to overcome this situation. This helps to identify where revisions are required in the budget to account changing conditions, errors, modification to company's plan etc. Monitoring of Budget Performance should be the responsibility of the managers in GBTCL. The essence of the effective monitoring of Budget Performance is that the managers should provide accurate, relevant, actionable information on time to the appropriate management level so that budget can give a realistic target to measure the performance.

It is also important to note that at the time of revising the budget, the primary budget as well as past information should not be ignored as they are the basic for preparing all budgets.



## CASE STUDY No: - 9 (The Board of Directors)

The Board of Directors meeting of Kyoto Motors Ltd. a car manufacturing company is to be scheduled to be held in another ten days. One of the items as per agenda, to be discussed in the meeting is the present budgeting system of the company. Your organization is at present using budget for control which are prepared mostly on traditional basis. The CEO of your company wants to propose to the Board to use Beyond Budgeting instead of traditional budgeting in the company on experimental basis. Therefore, you the Management Accountant has been asked by your CEO to explore the possibilities of introducing Beyond Budgeting (BB) system in the company.

### Required

Specifically, you are required to Prepare notes to your CEO to be used for his presentation at the meeting on:

- (i) The major limitations of traditional budgets.
- (ii) The advantages available in Beyond Budgeting.
- (iii) The nature of Beyond Budgeting
- (iv) The benefits that can be enjoyed from Beyond Budgeting.
- (v) The suitability of Beyond Budgeting to the company.

### **Solution: -**

- Limitations of Traditional Budgets
- Time-consuming and costly to put together.
- Constrain responsiveness and flexibility
- Often a barrier to change.
- Rarely strategically focused and are often contradictory.
- Add little value, especially given the time required to prepare.
- Add little value, especially given the time required to prepare.
- Concentrate on cost reduction and not on value creation.
- Development and updated too infrequently, usually annually.
- Are based on unsupported assumption and guesswork.
- Reinforce department barriers rather than encourage knowledge sharing.
- Make people feel undervalued.

### (ii) Advantages of Beyond Budgeting (BB)

BB identified its two main advantages.

It is a more adaptive process than traditional budgeting

It is a decentralized process, unlike traditional budgeting where leaders plan and control organization centrally.

(iii) Nature of “Beyond Budgeting”

- Budgeting is evolving, rather than becoming obsolete - it depends on trust and transparency.
- Shift from the top-down, centralized process to a more participative, bottom-up exercise in many firms.
- It highlights the level of improvement that can be achieved even with relatively simple modifications and a great deal of trust.
- Budgeting has changed, the change has been neither dramatic nor radical, instead incremental improvements, with traditional budgets being supplemented by new tools and techniques.
- Forecasting in fact is more important.

**(i) Benefits of the Beyond Budgeting Model.**

- Beyond budgeting helps managers to work in coordination to beat the competition. Internal rivalry between managers is reduced as target shift to competitors.
- Helps in motivating individuals by defining clear responsibilities and challenges.
- It eliminates some behavioral issues by making rewards team-based.
- Proper delegation of authority to operational managers who are close to the concerned action and can react quickly.
- Operational managers do not restrict themselves to budget limits and focus on achieving key ratios.
- It establishes customer-oriented teams.
- It creates information systems which provide fast and open information through the organization.

**(ii) Suitability of Beyond Budgeting to the Company**

Since Kyoto Motors Ltd. Is a car manufacturing company and presently and traditional costing system. Moreover, Automobile industry goes through rapid change. In its business environment. So, the company can definitely use Beyond Budgeting improve the control system and beat the competition. Beyond Budgeting lies and holistic approach based on self- organisation. This will also help the managers to close coordination with each other with motivation which in turn will beat the competition.



## CASE SCENARIO No: - 10 (Magical Stay)

Magical Stay is a hotel chain that has properties in popular tourist destinations. Each hotel is at least a 50 rooms establishment that as standard, elite and luxury size suites. Currently, the chain

has 9 properties spread across World. Magical Stay has its corporate headquarters in Singapore, from where the senior management operate. Operations management executives are based out of each specific property that they cater to. Magical Stay is a public listed company, with majority of its shareholders being institutional investors like mutual funds, banks and insurance companies. Since these investors had a high stake in the company, they had representatives of the board of directors to govern strategic decisions. One of the strategic goals of the company for 2018, was to earn a profit of Rs.1,500 million and keep increasing this target by 10% each year. Due to recessionary conditions, business has been volatile. Consequently, senior management is under pressure to meet the targets.

In order to have a defined plan for operations, Magical Stay prepares an annual budget for each of the properties as well as one master budget that consolidates at a company level. There is a separate financial and business analysis team that is in charge of this exercise. Key assumptions and future expected trends are discussed at with the operations management of each property. After incorporating the corporate headquarters numbers, the consolidated budget is presented to the senior management for approval. In order to have a uniform policy across locations, key metrics like room rent per day, material procurement for kitchen and rooms, employee hiring, capital investments at each property, advertising and promotional activities are handled directly by the corporate headquarters.

The management at each location is responsible to ensure smooth operations of the hotel chain by implementing these policies. The manager of each hotel property is given a target in terms of revenue to be generated, room occupancy and profit to be achieved. Therefore, the management at each location is also under pressure to perform and meet the target set by the senior management. In the past, if the target had not been met for couple of years, the senior management had closed down the hotel and exited the property. At the same time, best performers are given more liberal budgets to operate on. Hence, competition between various locations has always been fierce. There are constant negotiations for been given a “reasonable/practical target” that has to be achieved.

Monthly meetings are scheduled with the corporate office to explain variance of results from the budget. The recent monthly results have shown that 7 of the 9 properties have consistently not been able to meet the targets in the past six months. The situation is confounded because the tourism industry has been affected greatly by recessionary trends in the global economy. Therefore, the footfalls at the regular tourist places, where the hotel has properties, have reduced considerably. In some places occupancy during peak season has only been 60%. Therefore, operations are bleak and uncertain. At these meetings, the operations management argue that due to this dynamic scenario, the budgeted targets set become obscure since they are not based on the current circumstances.

The corporate office has met with the operations management at each of these properties in order to understand the situation better. Discussions have taken place about how the business can be improved. Few of the suggestions to improve performance are:

- (1) When the hotel is not fully booked, especially during off-season, give manager at each

property the authority to rent out rooms at an attractive discount. These opportunities have to be encased quickly, therefore the decision about the rate would be better handled by the personnel at the hotel. A guideline on the discount policy can be worked out with the corporate office. This will ensure that room occupancy rates increase, while earning reasonable return.

- (2) Allow for procurement of kitchen supplies locally, rather than buying it only from specified authorized vendors. Not only will this be cheaper, it also allows for moderate flexibility with the kitchen menu that can cater to customer demands based on current availability of supplies. Prior approvals can be taken by the management from the quality control department to ensure that customer satisfaction does not suffer.
- (3) A monthly reward and recognition program for employees, based on their service record for the month. Recommendations can be from fellow employees or the location manager.
- (4) Allow the location management autonomy, with a reasonable budget to cater to purchasing equipment. In order to address certain urgent requirements or repairs, quick response from the operations management is needed. The current process of getting approval from the corporate office is cumbersome since it takes a longer time. Autonomy can help address these issues quickly without much damage done to customer satisfaction. Funding can be quickly procured from banks if required.

Based on these discussions, the senior management has decided to decentralize all of the above decisions. As a pilot project, they have decided against preparing a line-wise detailed budget (sales budgets, operations cost budgets, advertising etc.) for each location. Instead, the operations management will be given clear targets at each of the locations regarding the key profitability ratios, liquidity ratios and leverage ratios, as also guidelines on market share, quality and customer satisfaction. These benchmarks have been finalized based on industry research of peer group companies. However, the managers have the autonomy to achieve the expected target based on their individual business scenarios at each location. The focus is therefore not on achieving budget numbers that have been finalized. Instead, management gets growth targets to achieve.

One year after implementing this decision, it was found that company was able to meet the shareholders' expectations, have a robust growth and an energetic employee morale.

#### Required

- (i) DISCUSS the traditional budgeting process had a negative impact on Magical Stay's operations.
- (ii) EXPLAIN the philosophy behind "growth-based targets" instead of "budget-based targets".

**Solution:** - Magical stay is operating in a business scenario that is highly competitive and dynamic. Focus of the traditional budget was riven towards achievement of the company's strategic goal, which was profit target of ₹1,500 million for the year 2018. Accordingly, the senior management followed a top-down approach to budgeting. Most important policy

decisions like room rent per day, material procurement, employee hiring, capital investments at each properly, advertising and promotional activities are handled directly by the corporate headquarters. Management in charge of operations at each location only implement it. In a changing business scenario, this budgeting methodology has the following shortcomings:

Budgets based on these policies may not be flexible enough in a fast-changing business environment, although it is based on assumption and expectations of the management has made about the business growth, in a dynamic Scenario, it is very difficult to predict the future accurately. Therefore, targets or benchmarks set by the traditional budgets may become outdated quickly.

- a. These budgets were based on business functions like sales, advertising operations etc. While a strategy for these functions is important, they are based on internal benchmarks and assumptions made by the management. However, for the company to be flexible in a changing environment, the focus should also be on external factors.
- b. The management aims to make a yearly profit that is 10% more than the previous year's profit. If previous year profit alone is the benchmark for growth, certain decisions may be shelved because they may decrease current year's profit below target. However, had these decisions been implemented they may have generated value in the long term and ultimately may have been better for earning profits in future years. For example, certain capital expenditures that may need to undertake quickly in order to improve customer satisfaction, may not be incurred at all simply because there is no budget for it.
- c. Operations management did not have much autonomy since policies were controlled at the corporate headquarter. At the same time, they were responsible for achieving the targets set out as per the budget. Responsibility without authority creates a negative working environment. Consequently, it might be difficult to retain talented personnel.
- d. In order to meet budget targets, managers may try to negotiate for lower sales targets to achieve, more budget allocations to meet costs etc. This does not foster positive business growth. Managers are more intent in meeting targets rather than focusing on business growth. It leads to lower sales than can otherwise be achieved and leads to protection of costs rather than working towards lowering operational costs.

It can be concluded that the traditional Budgeting process was more inward-looking. Focus is on achieving budget target rather than implementing strategies that can create more value to the company.

(iii) Following feedback from operations managers, the management given them targets based on growth instead those based on the budget alone. This is the philosophy of "beyond budgeting". Below are features of this philosophy that was enabled Magical Stay to achieve better results: -

- (a) IT is a more decentralized and participative way of operating a business. Rather than being made responsible for business decisions, which were not in their control, the employees delegated responsibility, combined with the necessary authority to execute decisions.

- (b) Operations management and the personnel at each location are capable of quickly adapting to changing market scenarios. Likewise, since they interact with the customers directly, it enables them to make quicker decisions to ensure customer satisfaction or identify opportunities to generate more revenue.
- (c) Targets are based on performance of peer group companies. Benchmarks based on peer group performance will be unbiased and reflects the current business scenario better. Due to this, customers need and satisfaction automatically gets priority, it is the customers who ultimately drive business growth. Therefore, rather than having an inward-looking outlook, focus is shifted to the external market conditions. Due to autonomy managers at various locations need not compete with each other for budget allocation. This channelizes the operational focus to meet challenges from outside competitors rather than having detrimental competition within the organization. At the same time, the targets for the company are also based on guidelines from the corporate office. Therefore, there is congregation of goals with the shareholders expectations.
- (d) Employee morale is also boosted due to the monthly reward and recognition system. It fosters healthy competition among employees.

Since the focus is on growth, beyond budgeting can be a way of achieving better results in challenging business environment.



## CHAPTER 12

# Standard Costing

### Case Scenario

**Question 67:** Natural Spices manufactures and distributes high-quality spices to gourmet food shops and top-quality restaurants. Gourmet and high-end restaurants pride themselves on using the freshest, highest-quality ingredients.

Natural Spices has set up five state of the art plants for meeting the ever- growing demand. The firm procures raw material directly from the centers of produce to maintain uniform taste and quality. The raw material is first cleaned, dried and tested with the help of special machines. It is then carefully grounded into the finished product passing through various stages and packaged at the firm's ultraclean factory before being dispatched to customers.

The following variances pertain to last week of operations, arose as a consequence of management's decision to lower prices to increase volume.

Sales Volume Variance	18,000 (F)
Sales Price Variance	14,000 (A)
Purchase Price Variance	10,000 (F)
Labour Efficiency Variance	11,200 (F)
Fixed Cost Expenditure Variance	4,400 (F)

Required:

- (i) Identify the 'Critical Success Factors' for Natural Spices.
- (ii) Evaluate the management's decision with the "Overall Corporate Strategy" and "critical Success Factors".

