

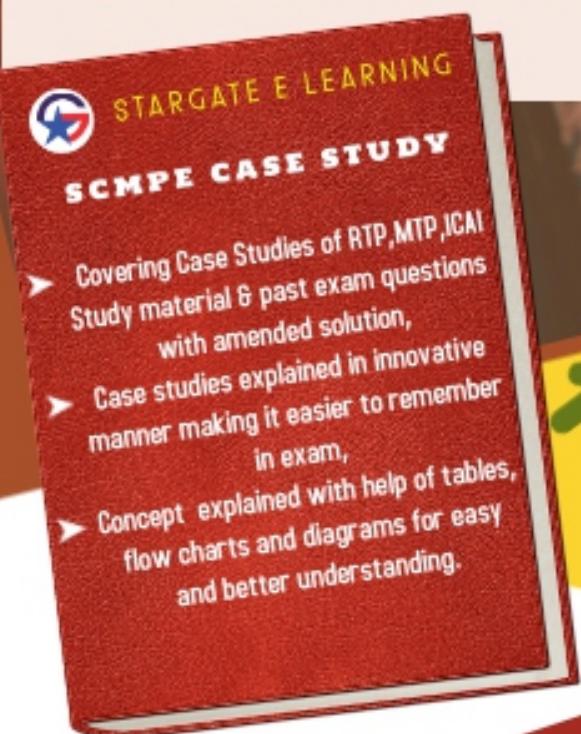


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100+ CASE STUDIES

BY: CA CMA SANJAY AGGARWAL SIR



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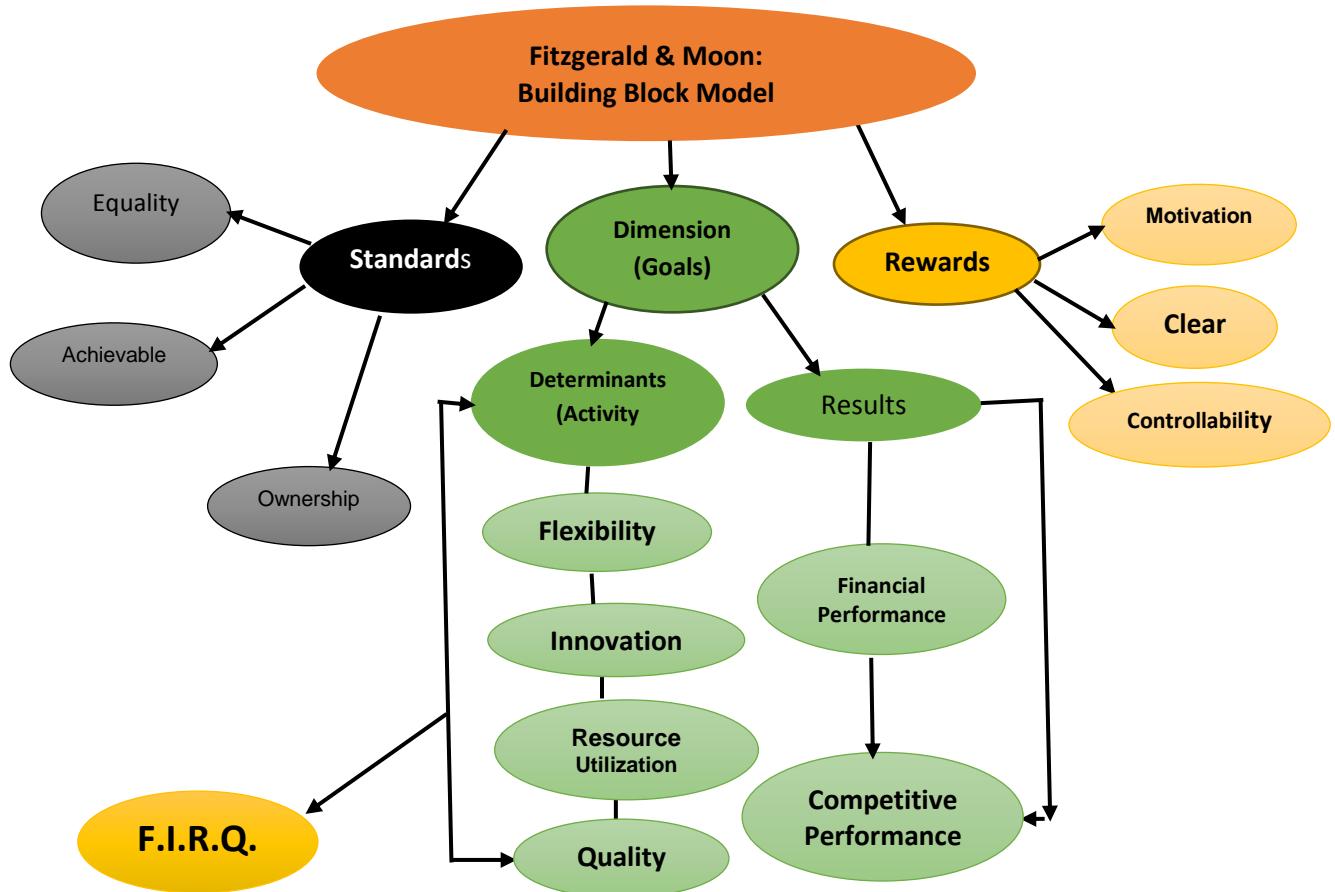
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CHAPTER 8

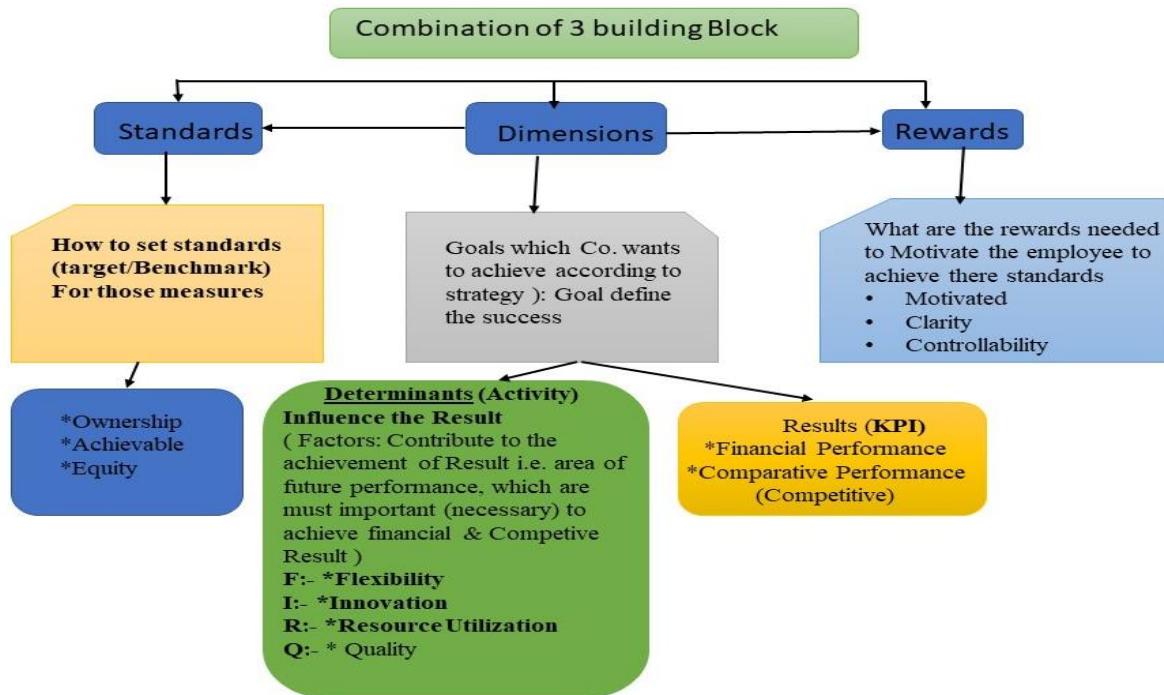
Performance Measurement and Evaluation

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 successes (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)
Flexibility (Should be high) हमारा स्टाफ हर काम कर सके, टाइम भी कम लगे	<ul style="list-style-type: none"> * Responsiveness * Different range of services to meet different segment of customer *Cater capable/skills to handle immediately change in demand/Sales. * Staff can do each work/multiple operation/ change easily. (Time Consumption: Low) * Sufficient finance availability 	<p>Courier Company</p> <ul style="list-style-type: none"> *Delay/ Early response to complaint *High % of order scheduled to customer request <p>Restaurant</p> <ul style="list-style-type: none"> *Seasonal dish can be prepared by Chef easily without any extra training, Cater seasonal demand. <p>Cloth: -</p> <ul style="list-style-type: none"> * Fast Changing taste in fashion design: applied/by our designer. <p>School/college/educational institute: - Availability &utilization appointment of lecturer.</p> <ul style="list-style-type: none"> * Offer: - online lecture support for

		long distance learning student. Weekend courses <u>Beauty parlor:</u> - Time taken by staff for cutting different style of hairs.
<u>Innovation</u> (Should be on Regular basis, instead of one time) (नयापन)	*Innovative efforts, new design, new variant/Services experiment on Regular basis instead of one time. *Packing should be in such a way: - Recycle. *Convert cash payment system: On line / Paytm. *Introduction of smart phone Application.	<u>Courier Company</u> * % of customer using smart phone application. <u>Hospital:</u> - *Advance technique in operations *Robot technique in operation. <u>School/college:</u> - *New course format *Add new course <u>Restaurant:</u> - *Add new dishes every month in menu. Clothes: - *Add new fashion design. <u>Beauty Parlor:</u> - * Revenue generated from new service pack.
<u>Resource utilization</u> (should be optimum) (कोई कर्मचारी खाली नहीं बैठे)	*Optimum utilization of resource, *labour/driver/Machine/ Vehicles i.e., productivity/ Efficiency *Revenue per staff/Labour *Van: - Capacity: 100 Transport: 80 (Not advisable) * Production schedule match with demand schedule *Teacher: Student-Ratio	<u>Courier Company</u> *Average time per delivery <u>Restaurant:</u> -High table occupancy Rate (Co-ordination between order taking staff) (Waiting time, lowest as possible) *Production = demand (No spare capacity) idle time of labour. * Use of Free Lance lecturer (How) * Level of staff non-chargeable staff time. * Revamping (सुधार) the order, delivery payment system would improve. <u>Beauty parlor:</u> - *Revenue per staff
<u>Quality:</u> - (बढ़िया, अच्छा) *(Should be standard high) *Should be enough for a Product price paid) *Should be measured from eye of customer (Feedback from customer).	* Customer care *High. * No. of repeat customer. *Internal Quality check, Quality control for all unit (branches) *Quality standards are met (be ensure). *No. of customers complaint *Help line use (Doubts /Problems) =? *Noncompliance may require	<u>Courier Company</u> *Courier delivery services (Timely) * high % on time delivery. *Misdirected couriers redelivered at no extra cost. *Lost item/damage item <u>Hotel:</u> - *Good Taste (Hot food), healthy. *Better presentation, Hygienic Food. <u>School/College</u>

	immediate attention of management. *Prompt response to customer claim *Compensation to customer.	*Pass Ratio in exams should be high. *Low number of complaints/ Doubt. Hospital: - *Recovery of Patient should be excellent.
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Results: -

Competitiveness: - (दूसरे से बेहतर)	*Differentiate Product / Service *Open more franchisee *Sales growth *Relative Market share and Position. (market share i.e., conversion rate of customer) *Measures of the Customer Base. * Conversion Ratio	Restaurant *Healthy food choice in menu. * Provide competitive Edge.
Financial Performance: - (लाभ कमाना)	*Gross Profit Ratio *Net Profit Ratio *Operating Margin Ratio. *Profitability *Liquidity *Capital Structure *Market Ratios	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 हैं)

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.
KPI	Example:-  <pre>graph TD; Restaurant[Restaurant] --> HeadOrder[Head of order Taking dept.]; Restaurant --> Chief[Chief]; Restaurant --> HeadBranches[Head of each branches]; HeadOrder --> Revenue[Revenue/Waiting time of customers]; Chief --> QualityFood[Quality of Food]; HeadBranches --> EliminateFraud["*To eliminate fraud/error *To keep all operation smoothly"]; Company[Company] --> Sales[Sales Department]; Company --> Production[Production Department]; Company --> Purchase[Purchase Department]; Sales --> Orders[Orders/Revenue]; Production --> QualityProduct[Quality Product]; Purchase --> 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 discrimenacy.
- 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
- **Chef:** -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 of 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

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.

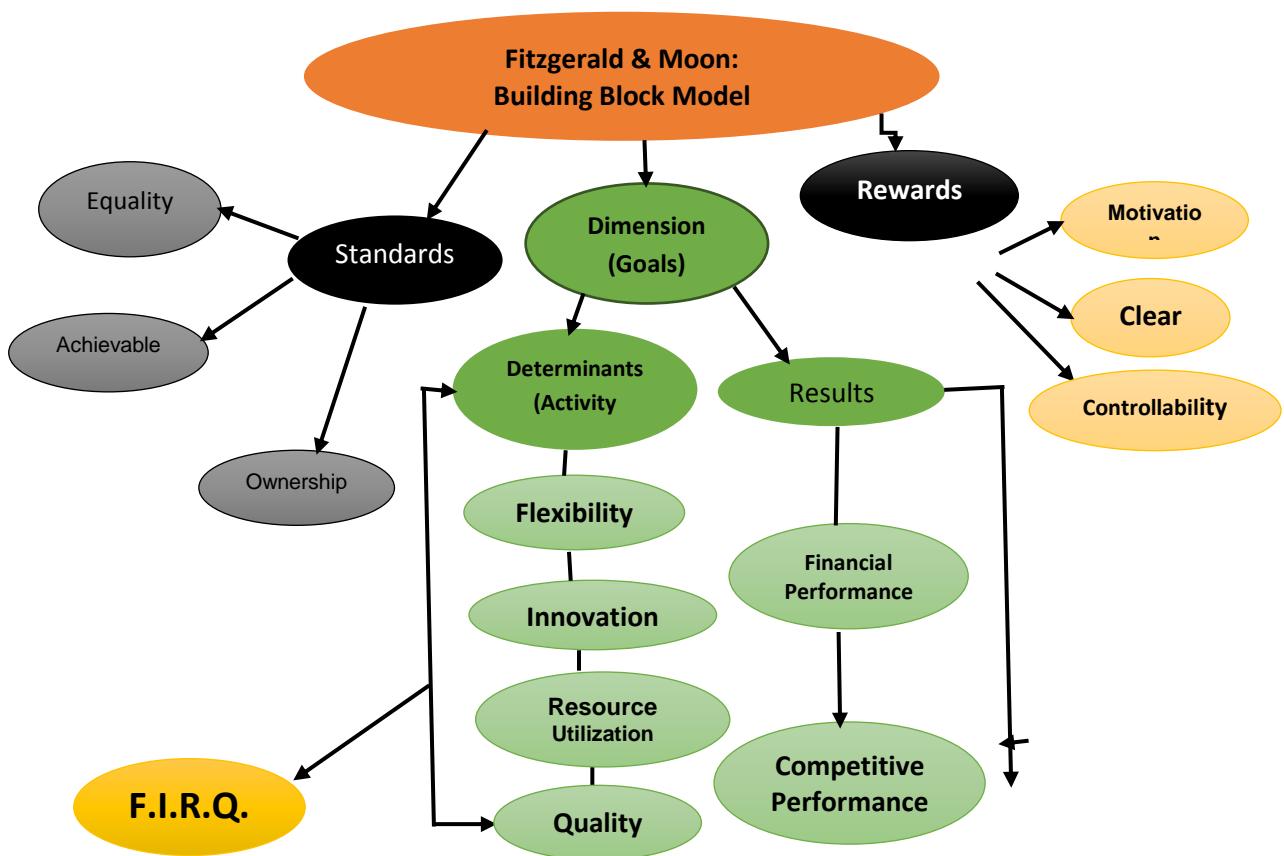
- (i) ASSESS PHL from perspective of financial performance, service quality, Utilization, Flexibility, innovation, and competitiveness.
- (ii) EXPLAIN how the Standards and Rewards blocks support the Dimensions block in case of Building Block Model.

(ICMA London)

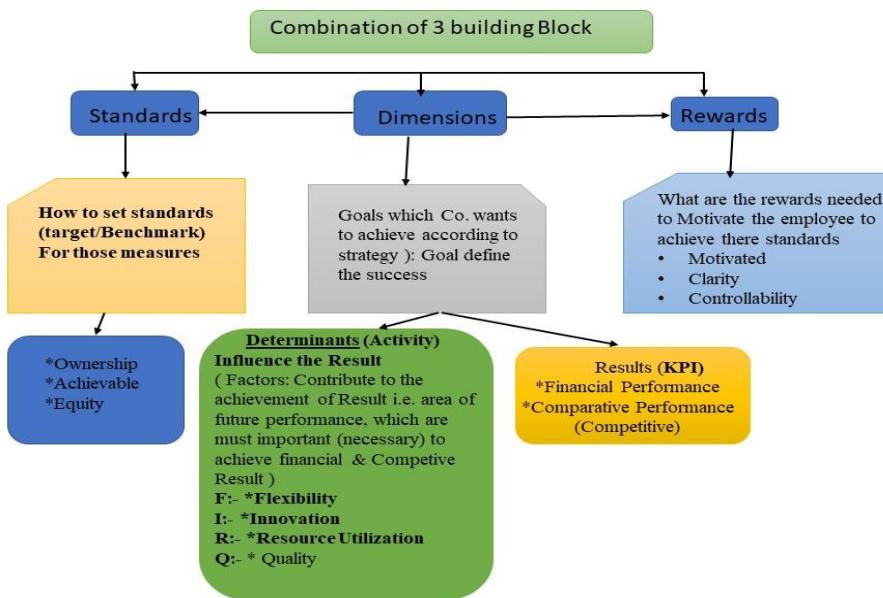
Solution:-

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 successes (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
Revenue and Profit				
Revenue	0	I	I	I
Profit (see note below)	I	0	I	0
Total Points earned ... (A)	I	I	2	I
Ranking	II	II	I	II
Courier Delivery Services and Customer Care				
Flexibility				
% Of order scheduled to customer request	0	I	0	I
Innovation				
% Of customer using smart phone app.	I	0	0	I
Resource Utilization				
Average time per delivery	I	I	I	0
Quality				
% On time delivery	I	I	0	I
Misdirected couriers re-delivered at no extra cost	I	I	I	0
Damaged items	I	0	I	I
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: -Ownership: -

(कौन किस -2 काम के लिए जिम्मेदार है

Objective: -	Clearly define the responsibility of each staff.
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.
- 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: -

I: -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

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.

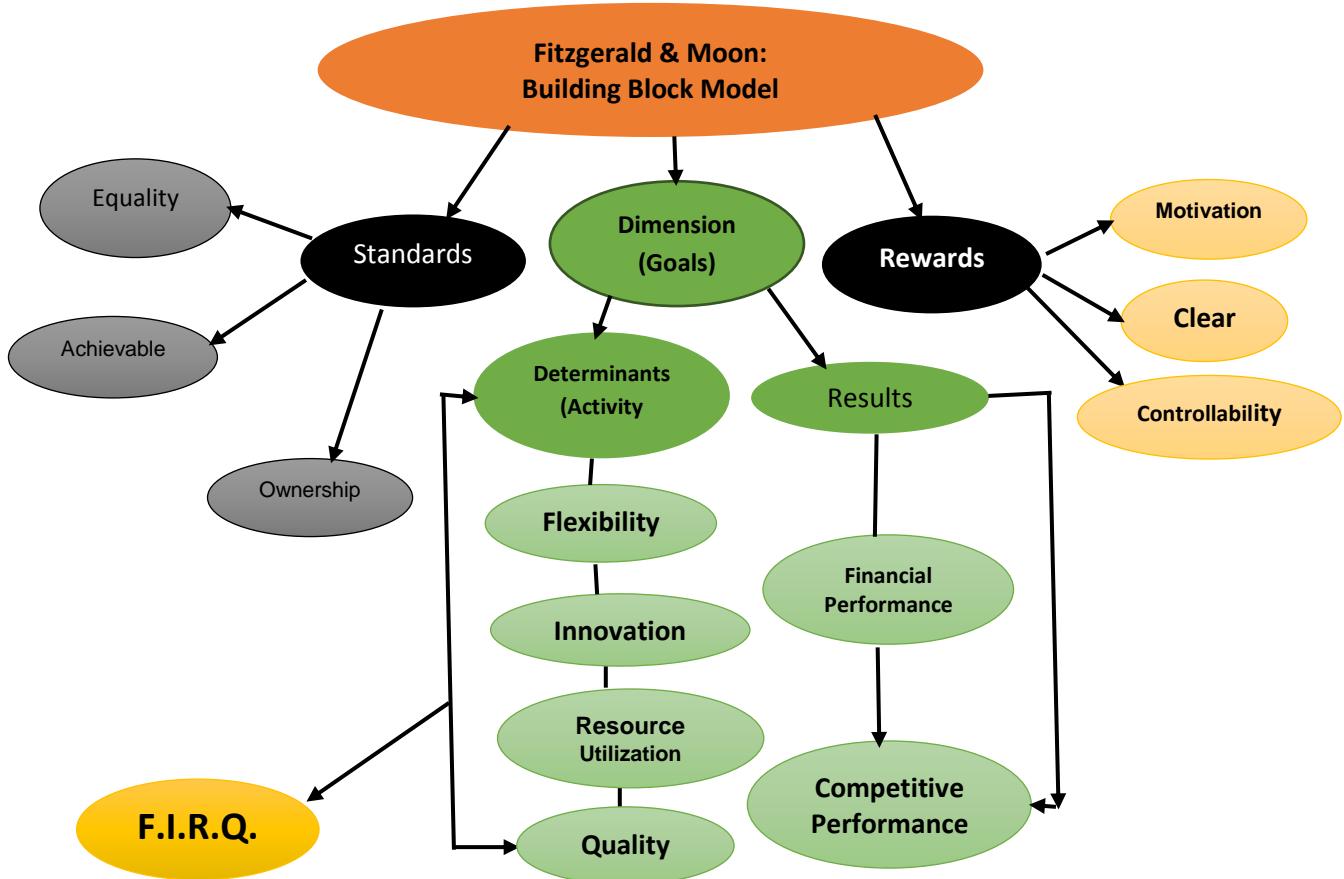
Required: -

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

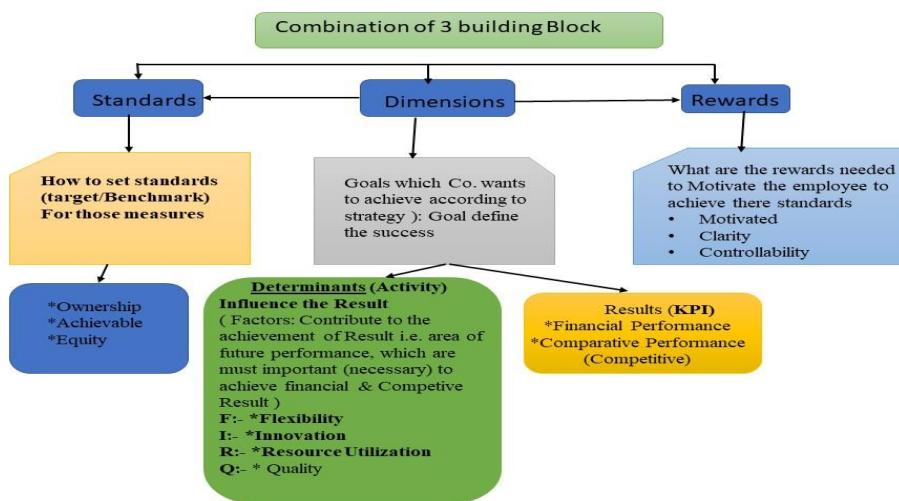
Solution: -

The Building Block Model

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.

	Measures
<u>Flexibility</u> (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.
<u>Innovation</u> (Should be on Regular basis, instead of one time) (नयापन)	No. of new courses, New course format. FL has recently introduced a helpline services which 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.
<u>Quality: -</u> (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

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

The Soup Ltd. offers a range of beauty parlour 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 center 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 (₹)	91,26,000	1,08,66,900
Gross profit (₹)	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 ₹600 for services over and above ₹1,200.
 - a head massage costing only ₹240, instead of the usual ₹480, for 10 days advanced bookings.
 - a haircut ₹120 will be charge, which usually costs ₹360, for all customers booking hair spa.

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

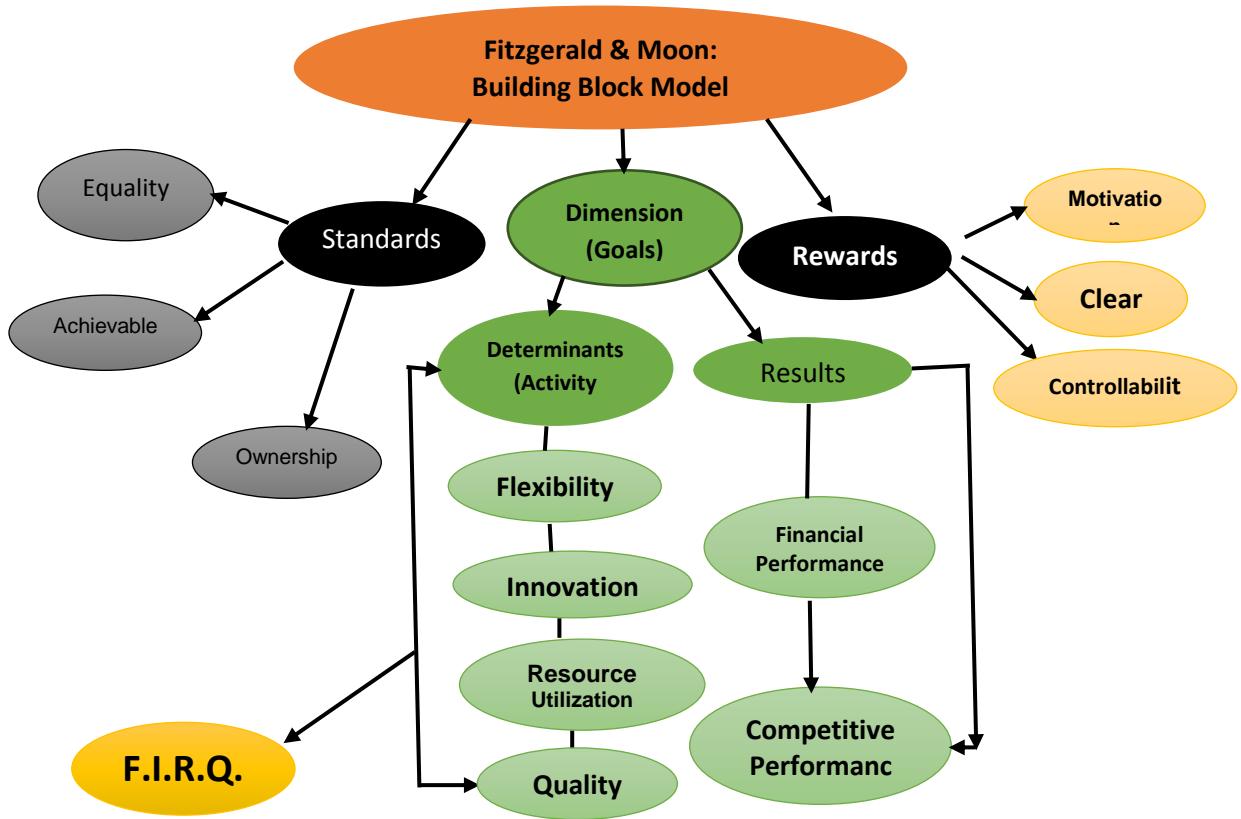
- (i) ANALYZE Roop's performance relative to the other Centre/s.
- (ii) EXPLAIN how the Standards and Rewards blocks support the Dimensions block in case of Building Block Model.

Solution:- (i)

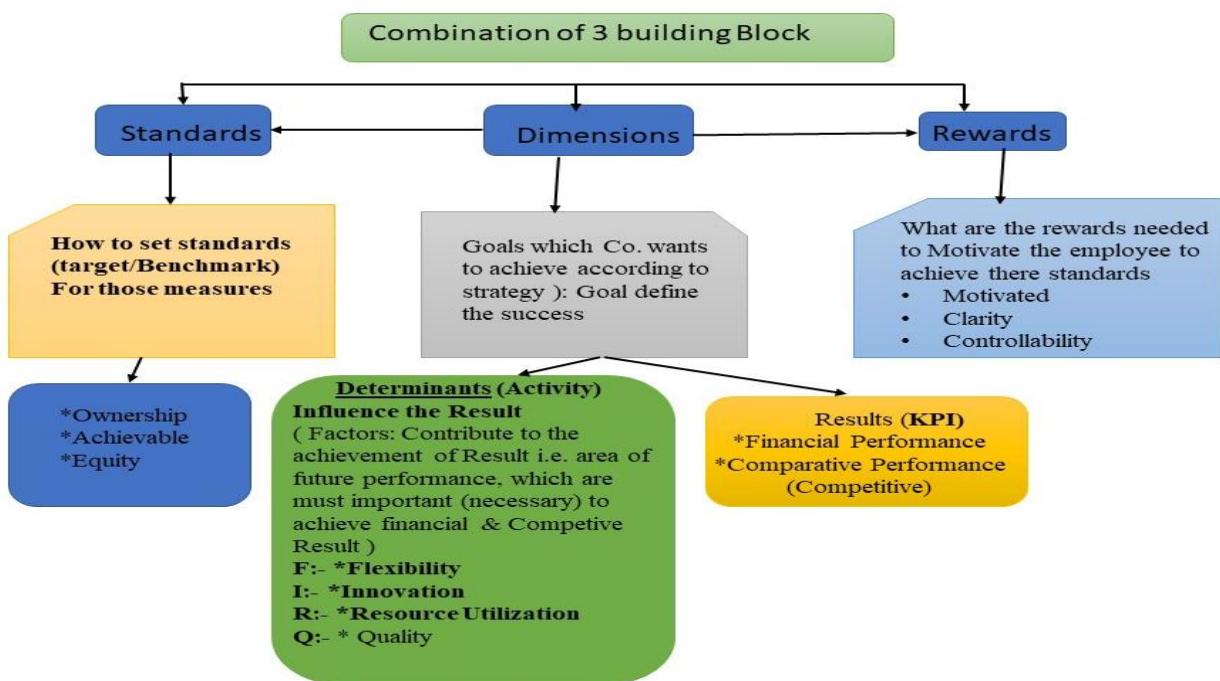
The Building Block Model

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



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 successes (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)

$$\frac{23.4\%}{\{(7,92,000 + 6,48,000)/ 91,26,000\} \times 100}$$
 + 9.5%

$$\frac{\{(5,28,000 + 5,04,000)/ 1,08,66,900\} \times 100}{100}$$

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 (₹)

$$\frac{60,840}{(91,26,000/ 150)} = 65,860$$

$$(1,08,66,900/ 165)$$

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 ₹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 Customers in Percentage)	15.23% $(1,510/9,915) \times 100$	13.08% $(1,605/ 12,270) \times 100$

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 centers 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.

I: -Ownership: -

(कौन किस -2 काम के लिए जिम्मेदार है

Objective: -	Clearly define the responsibility of each staff.
KPI	
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.
- No disremency

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: -

I: -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/designated 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

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 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 delivers 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 take 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 helps 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 put 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 demotivated. 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.

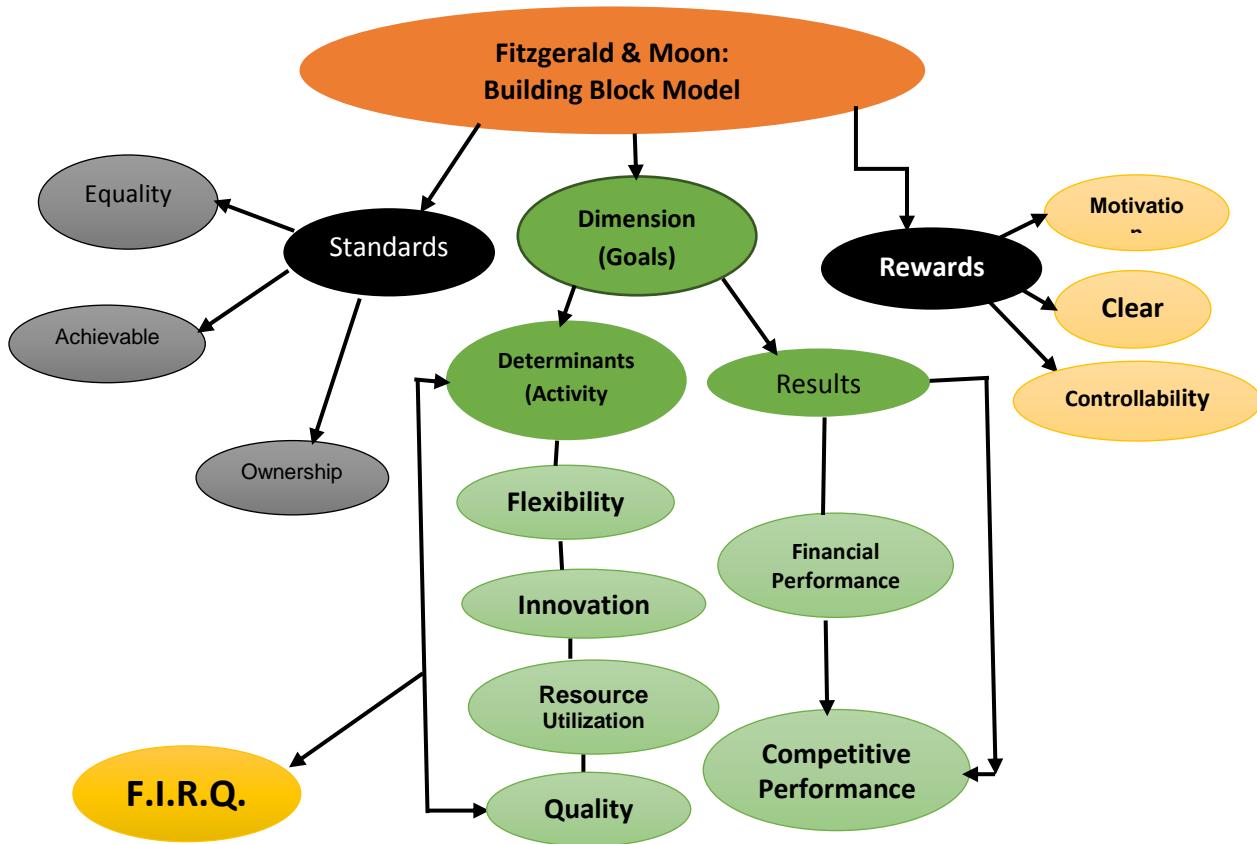
Grab and Go can design its performance measurement system along the above lines.

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

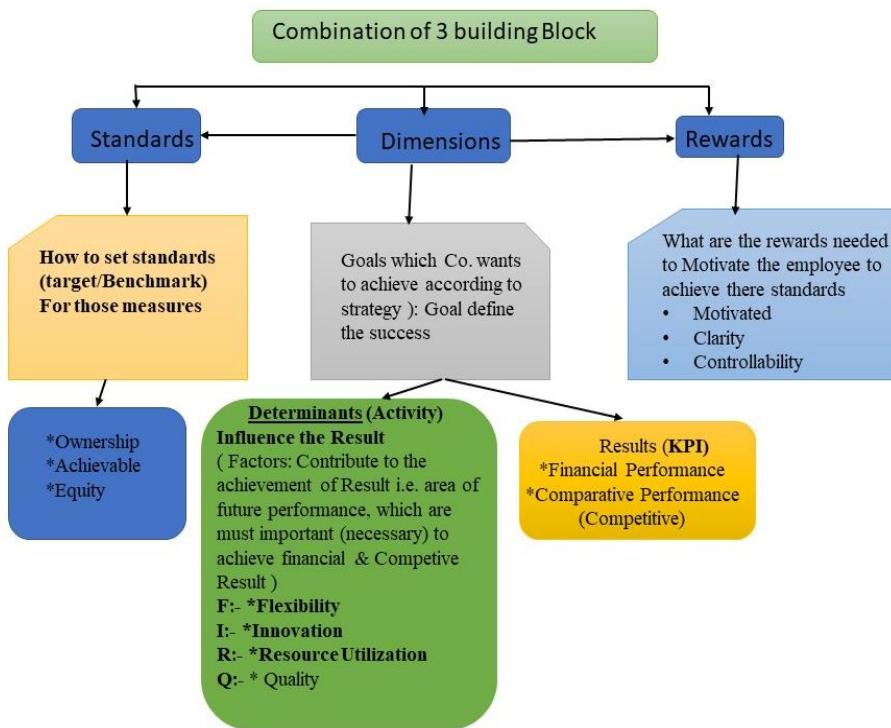
(Summary)

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 successes (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.
Innovation (Should be on Regular basis, instead of one time) (नयापन)	* Covert cash payment system: On line / Paytm. *Innovative efforts, new design, new variant/ experiment on Regular basis instead of one time.	Restaurant: - Add new dishes every month in menu.
Resource utilization (Should be optimum) (कोई कर्मचारी खाली नहीं बैठे)	*Optimum utilization, productivity, wastage; low. *Staff/Labour efficiency. Revenue per staff / Labour.	Restaurant: - High table occupancy Rate Co-ordination between order taking staff & chefs (kitchen) (Waiting time, lowest as possible) (No spare capacity) idle time of labour. Revamping the order, delivery system would improve.
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).	*Customer care *High *No. of repeat customer. *Internal Quality check. *Quality control for all unit (branches) *Quality standards are met (be ensure). * No. of customer complaint.	Restaurant: - *Good taste (Hot food), healthy. *Better presentation, Hygienic Food.
Results: -		
Competitiveness: - (दूसरे से बेहतर)	*Differentiate Product / Service *Open more franchisee *Sales growth *Relative Market share and Position. (market share i.e., conversion rate of customer) *Measures of the Customer Base. Conversion Ratio	*Healthy food choice in menu.

Financial Performance: - (लाभ कमाना)	*Gross Profit Ratio *Net Profit Ratio *Operating Margin Ratio. *Profitability *Liquidity *Capital Structure *Market Ratios	Cash Profit & Change in cash reserve for each branch as well as overall firm. Partners want to retain current capital structure & no external funding but interested for bank Loan & retain the company profit.
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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

Objective: -	Clearly define the responsibility of each staff.
KPI	<p>Example: -</p> <pre> graph TD Restaurant[Restaurant] --> HeadOrder[Head of order Taking dept.] Restaurant --> Chief[Chief] Restaurant --> HeadBranches[Head of each branches] HeadOrder --> Revenue[Revenue/Waiting time of customers] Chief --> QualityFood[Quality of Food] HeadBranches --> EliminateFraud[*To eliminate fraud/error] HeadBranches --> SmoothOperation[*To keep all operation smoothly] Company[Company] --> Sales[Sales Department] Company --> Production[Production Department] Company --> Purchase[Purchase Department] Sales --> Orders[Orders/Revenue] Production --> QualityProduct[Quality Product] Purchase --> 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 disremency

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: -

I: - 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.

(ICMA London)



CASE STUDY No:- 5

Case Study No: - 5 BUILDING BLOCK MODEL (CASE STUDY DIGEST)

Bhalla & Singh LLP (BS LLP) is an accounting firm in form of limited liability partnership with 20+ branches across India, in all major cities. BS LLP offers to its customer services in accountancy, assurance, tax consultancy, business advisory services. Since the country is passing through economic slowdown, hence large numbers of business are entering into either internal/ external reconstruction; resultantly advisory services are in huge demands. The industry of accounting practices in India is mature, despite some of statutes enforced recently.

As part of performance analysis, at BS LLP; partners for each service domain collectively meet with top officers, on monthly basis. Following performance related data (belong to latest financial year) was considered in one of recent conducted partner meeting.

Particulars for BS LLP	Accounting	Audits	Tax Consultancy	Business Advisory
Revenue (In ₹Crores)	690	846	145	34
Growth of revenue over previous year	2%	9%	3%	18%
Net profit ratio	5%	4.3%	6.7%	9.8%
Revenue (In ₹Crores) of Accounting Industry as whole	2,518	5,430	1,652	286

Remuneration Structure at BS LLP

Partners are getting fixed contractual payment apart from share in profit.

Non – Partners are getting fixed salary apart from variable pay depending upon rating from their immediate boss and peers.

Client Relation Officer who is working parallel to marketing team, first time participated in monthly performance evaluation meeting and presented following data which contain rating from clients of BS

LLP. It is decided that these rating will also be added in performance matrix/ table stated above–

Particulars for BS LLP	Accounting	Audits	Tax Consultancy	Business Advisory
Customer Ratings (higher the better)	3.6	3.2	3.1	4.5

Required

You are newly appointed management consultant with experience in non-finance performance evaluation techniques. During discussion at lunch table, managing partner (Mr. Singh) explain the above process of performance analysis to you. You quoted about your past experience of implementing non-financial performance evaluation techniques, including Performance Prism, Balance Scorecard and Building Block. Building block sounds interesting to Mr. Singh, he asks you to:

- (i) LIST essential components of any performance management system.
- (ii) DESCRIBE Building Block Model of performance management.
- (iii) EVALUATE the BS LLPs' existing performance management system from perspective of 3 essential aspects of Building Block Model.
- (iv) ADVISE the main improvements that introduction of a Building Block approach can bring to BS LLPs' performance management system.

Solution:

- (i) Essential Components of Performance Management System
Performance management system which is considered as a key aspect of management accounting and must contain following components–
 - Establishing functional and divisional organization's structure along with determination the level of decentralization.
 - Establish responsibility centers and identify the person responsible for performance of each such center.
 - Establishing the system to identify KPI against which performance will be measure and establishing the yardsticks.
 - Review system in order to compare the actual against standards and required corrective action.

(ii) Building Block Model

Building Block model of performance management is developed by Fitzgerald and Moon as a framework to improve performance measurement in service businesses.

The model suggests that performance systems should be based on three concepts: dimensions, standards, and rewards.

Dimensions (these are critical success factor) - There are six areas upon which company needs to focus in order to improve its performance. The model also suggests that the dimensions can be divided into two sets–

Results – Competitiveness & Financial Performance.

Determinants – Quality of Service, Flexibility, Resource Utilization and Innovation.

Note – Improvement in results can be ensured by improving performance in determinants.

Standards (these are key performance indicator) - Second aspects of Building Block Model are to establishing the standards or determining the yardstick level. Model also suggests the three properties which must be possessed by performance measure, these properties are–

- Ownership,
- Achievability and

- Fairness.

Rewards - In order to encourage the workforce, so that they can achieve the standards established; model also suggests three properties which every reward should possess. These properties are—

- Clarity,
- Controllability and
- Motivation.

(iii) **Evaluation of Existing Performance Management System**

- The existing performance management system at BS LLP doesn't focus upon determinants specified by Building Block Model. Prima facie it is apparent from the performance matrix used by partners in their monthly meeting that performance is evaluated based upon financial performance only. Let's evaluate existing performance management system further—

Dimensions

The existing performance management system at BS LLP is allowing to consider the results in reference to: (i) Financial performance - it measures net profit margin and change/ increase in revenue over previous year and (ii) Competitive performance – revenue of BS LLP can be compared with industry revenue (segment wise) to calculate market share.

The matrix used by existing performance management system doesn't contain any major information from which performance level of determinants can be measured. But recently at BS LLP customer rating is used, which can be taken as KPI for quality of service.

Standards

Presently it seems BS LLP is measuring segment wise performance against performance of industry (based upon revenue) apart from measuring net profit and growth.

Ownership - Since organization structure is not clearly defined in the case above, hence ownership for each of dimension stated above can't be identified in existing performance management system.

Achievability & Fairness– In order to ensure achievability of standard established and fairness of same, presently it seems BS LLP is measuring segment wise performance against performance of industry (based upon revenue), whereas measure net profit and growth against standard established internally.

Reward System

Although non-partners at BS LLP are getting variable component of their remuneration/ rewards based upon their rating by immediate boss and peer, but the criteria of rating are not clearly defined and weight is also not mentioned for boss rating and rating by peer. If such criteria are not ration may cause de-motivation among staff.

Whereas partners are getting fixed remuneration apart from share in profit earned. Here in given case it is not clear whether profit of respective division or entity as whole, BS LLP. It is obvious that, if partners are getting reward based upon measure, which they can't control they may be de-motivated. This may also not improve the performance of bad performing division, because they are also getting reasonable amount as share in profit due better performance by other departments.

(iv) **Advise to Improve the Performance Management System**

First and foremost, improvement will be consideration of all the dimensions of performance as per building block ensuring that all the critical success factors for performance should be measured. This will help BS LLP considering the importance of flexibility, resource utilization and innovation.

Flexibility is important from the prospective from delivery of service, the manner and timing and of delivery.

Since staff is the key resource at BS LLP, hence essential it is to ensure optimum and effective

resource utilization. In order to measure the productivity of the staff, hour charged as percentage of total available hour/ total hour paid can be computed. This ratio will also signify the peak and off period.

Although the scope of innovation is not much available in accounting firms, but still use of IT tools can improve the utility for client. Moreover, innovation can be seen as offering new range and category of services.

Further, while identifying the parameter for evaluating performance; the Building Block model will help to set the standards against which performance is needed to be measured. Such standard should be achievable and fair, which should encourage the motivation among staff. Such standard may be financial and non-financial. Building Block Model will not only set the fair standard, but also help in establishing the mechanism that how such standard should be established.

Building Block will also help in reviewing the rewards system, in order to motivate both Non-Partner Staff and Partners at SB LLP. Reward should be based upon those criteria for which worker is responsible or has control, so partner at SB LLP must get the share in divisional profitability and non-partner worker must get the variable based upon their productivity (which can be measured either by self-appraisal or 360 degree).



CASE STUDY No:-6

Case Scenario No:- 6: - Case study Digest

ABC is a medium size Chartered Accountancy firm having five branches in India. Their major revenue segments are statutory compliances, taxation practice, audit & assurance and consulting services. Their founder partner, in a recently organized yearend closing meeting with all working partners, has given the following vision statement for the next year:

'The next financial year, ABC should use results and determinants-based framework for each revenue segment and the current rewards scheme to be remodeled to a clear result oriented one'.

Required

- I. DESCRIBE management strategy, the founder partner of the firm referring to.
- II. LIST some performance measures that might be used.

Solution :

- (I) The management strategy that the founder partner of the firm referring to is the 'Building Block Model' as proposed by Fitzgerald and Moon. The model was proposed as a solution to performance measurement in service industry but can also be extended manufacturing field to evaluate business performance. The model requires the establishment of results and determinants-based frame work, wherein 'determinants' are the performance areas and the 'results' reflects the success or failure of the determinants. This model also requires setting the fair standards against which performance will be measured and linking the same to controllable factors in order to motivate the staff.
- (ii) Some performance measures that might be used in ABC are as follows:

Financial Performance in ABC can be measured through computing gross/net profit margin, margin per partner, change/increase in revenue over previous year.

Growth in revenue, success rate in converting enquiries into revenue, retention rate of clients, relative markets are and position are measures of competitiveness.

Statutory compliances segment will behoving characteristics of recurring work, and strict adherence to return filing timelines; hence it is essential to ensure optimum and effective resource utilization. In order to measure the productivity of the staff, hour charged as percentage of total available hour/ total hour paid can be computed. This ratio will also signify the peak and off period.

Consulting Services segment will behoving characteristics of analytical skills, inter-personal skills and ability to close on prospective clients; therefore, quality of services is critical factor for success. Customer rating and proportion of number of errors/defects to number of compliances submitted can be taken as KPI for quality of services.

Flexibility is important from the prospective from delivery of service, the manner and timing and of delivery. Some performance measures that might be used for this dimension are number of returns submitted on time to total returns, actual number of visits to number of visits planned for specific assignment, number of technical areas like accounting, auditing, taxation handled by each team member.

Although the scope of innovation is not much available in accounting firms, but still use of IT tools can improve the utility for client. Moreover, innovation can be seen, as offering new range and category of services. Number of new services offered with in the previous year or three years can be a performance measure of innovation.



CASE STUDY No:-7

Case Study No: -7(Building Block Model)

Mrs. Kates is a retired dedicated mom taking care of her family and doing every bit to give the best of the upbringing to raise her son. Back in Mrs. Kates graduation days, career in accounting business and economics used to grow but there is a drastic change since those times. It was then not so troublesome task to clear the graduation and get an alluring job. One could easily leap in and land up to a nice little 9 to 5 job as what we say. Life was easy as no one was busy. Records were all in the real physical books which were disappearing in modern times with the advent of internet and it is the Mac generation. Eyes were less trained and brain at placidity. No emails to check and no formalities to make. No exaggerations of staying late in office to get rewards and promotions. Moreover, people were easy to deal with, they had patience to listen till end and would react after giving a deep thought.

Days changed, months passed and went thereby a couple of decades when Mrs. Kates had a full-grown son, Mr. Dude needing to be admitted to a college in this rapidly changing and booming era. She wanted Dude to be in a college that had "history of good academics", focusing on all round development of student, also meeting the needs of being flexible for a busy student life. She was low on her budget and therefore wanted someone or if the college itself could help her in financing the college education of her son. She was born and brought up in a small town called Dohapur and lived there all along her life. She was lucky to go on a 5 days tour outside of her country, visiting metropolitan cities of United States like New York and California. She was taken aback by the speed and transcendency of the states she visited. She wanted her son to learn some aspects of that life so that he could adjust with the fast pace and stride with passing time. Therefore, Kates started looking for education opportunities in her nearby city called Vilaspur which was just couple of miles away. There were two eminent colleges in the city each providing accounting, economics and taxation courses. Dude had little interest in economics, so Kates did not force him to jump in.

Dayawan College of Commerce (DCC) and Hridyam Commerce Institute (HCI) stood in direct competition to each other and met most of the characteristics expected of by Kates. She was excited to know about them and that they had a well renovated huge college campus where student outside of the city could stay and accomplish their education goals. The city was expensive and so were the

colleges. Now she started pondering about the educational cost and began to seek sources that could lend her son educational assistance. To the much of hertry she came to know from her close friends, that DCC took in students with weak financial standing but with strong academics. Actually, the college was named after the founder Dayawan Desai who was a great social activist of his time and during the last few years of his life he vouched to build a great co-ed college in his city for lower middle-class students who get left behind only because of their economic condition. The efforts from his history and the legacy created successful businessmen and women, tax consultants and economic scholars. HCI College on the other hand was also down to earth and did not bias among lower and higher class. They charged relatively low fees compared to DCC was popular among youth and gave great professionals who after their graduation from the college pursued further studies.

From last few years, many students were complaining about the rapidly increasing tuition rates, to which they went on a student strike demanding rate cut. Colleges had been very specific in relation to quality and touted that teaching fees and academic development cost had been increasing enormously which had to be substantiated by increase in costs of books and tuition. Failing all attempts, many students decided to switch to a mix of part time lectures and part time job through which college cost can be met and the burden on their families can be balanced. They required college to plan the class schedules innovatively so that students' studies do not get hampered and at the same time they can continue their jobs. Both of the colleges were trying to come up with online courses and distance learning materials to assist their students in the event their student failed to attend any lectures. In addition, HCI is also planning on hiring additional freelancers to work with students during evening time to groom their skills and assist them do well in their studies.

The reward system of the colleges is not clear and there is less information on how teachers are being motivated to serve the students to the best of their interest. However, college image and brand totally depend on the efforts of the teachers/professors. The total revenue generated in the city from college business is around ₹ 500 lakh. The revenue generated by DCC in the most recent year is ₹ 180 lakh and by HCI is ₹ 110 lakh.

Dude developed a solidarity among his class friends and decided to go to DCC as this was the college where his other friends were wanting to go. However, Kates was concerned that Dude could spoil his career if he concentrated on picking things other than his studies. She wanted someone to guide her based on facts and figures of both the colleges so that an informed decision could be reached. She had modest savings from her job and wanted to spur her son to value those and understand the sheer importance of her precious student life which once gone will never be back. To harness all the information she had, and relying on your omnipotent knowledge, Kates went to you and provided you with facts (Annexure) about the two colleges.

In a nerve-racking voice, she remarked would you need any other information for your research to be extensive and serving my purpose? She continued, it was her serendipity to have gone through many troubles and find such detailed information and that she will try to gather more if she could. You in a calming and consoling voice said her that information was more than needed and it was really appreciative of her to pull in so much detail. It was all her love and care for her son that transpired on to the papers. She went by thanking you for considering her case and agreeing to help her son, Dude to make an informed choice.

Now you began contemplating of what could be done and exactly which models to be employed to get the job done and render a research driven analytical advice. After a day of pondering, you recollected of having learned the Fitzgerald and Moon's "Building Block Model" and started to gather all the facts she provided. Now you gave a thought, that basically there are two questions to be answered for her enquires to be resolved.

Required

- I. Could 'building block model' be applied to her case and if yes EXPLAIN the model in brief?

II. EVALUATE the performance of the two prominent colleges.

Figures for the most recent year 2019

	Dayawan Commerce (DCC)	College of	Hridyam Commerce Institute (HCI)	Commerce Institute
	Budgeted	Actual	Budgeted	Actual
Number of enquiries for admission				
Accounting	5,000	4,000	4,200	4,000
Taxation	4,000	3,800	4,100	3,900
Total	9,000	7,800	8,300	7,900
Students turning up for application				
Accounting	3,500	3,000	3,500	3,800
Taxation	3,200	3,000	3,850	3,800
Total	6,700	6,000	7,350	7,600
Percentage increase in revenue		10%		7.90%
Net profit		50,00,000		27,00,000
Number of lecturers				
Accounting		14		11
Taxation		12		8
Total		26		19
Number of teaching days in a year		250		250
Number of days lecturers received		240		230
Students passing		5,700		7,500
Students getting jobs		5,100		7,000

Solution:

(i) Fitzgerald and Moon's building block model commonly known as building block model is a performance management theory model developed by Fitzgerald and Moon. This model has been built on the premise that service industries could employ this model to evaluate their already in place performance standards and make hence forth improvements or could start from scratch building performance measurement criteria using this model. Since both colleges are engaged in rendering educational services to students, they very well fall within the ambit of service industries.

This model is named as building block since it has been built on three blocks which are namely:

Dimensions

Think "Dimensions" as both financial and non-financial goals of any organization since both these goals serve as the factors critical for its long run success. Dimension commonly means attributes to be measured and here we measure two financial attributes and four non-financial attributes of any organization which can be enumerated below:

	Dimensions
Financial (Results)	
Nonfinancial (Determinants)	Competitive performance financial performance Quality Flexibility Resource Utilization Innovation

Standards

Think standards as targets that are to be achieved based on which performance attributes as listed will

be measured. For the standards to be aggregable and acceptable by the concerned department or the responsible individuals, such standards must possess three features which are ownership, achievability, and equity.

Rewards

Think rewards as source of motivation that can drive the staffs to work wholeheartedly towards the achievement of set targets, so that the organization can successfully achieve both its financial and non-financial goals in the long run. Now the reward structure/ system again should possess three qualities which are clarity, motivational and controllability.

(ii) Mrs. Kates wants us to evaluate two prominent colleges of Vila spur city and come up with some conclusion. Going by the facts provided by Mrs. Kates it appears that both the colleges are doing well overall. However, the exact position of the colleges can be known from a detailed analysis of both qualitative and quantitative information available to us. This means we have to count both the financial and non-financial goals of each organization to precisely state how have been doing.

Financial performance can be measured by percentage increase in revenue and net profit margin. DCC remains the best performer on absolute revenue and profit although it performs so inadequately on other measures. This suggests that it may not be making the necessary investment in service and quality to satisfy the students' needs.

Competitiveness can be measured by relating number of students enquiring and finally turning up as an applicant, i.e., how successful the organization is at converting enquiries into applications. The take up rate for HCI is higher as compared to DCC. This could be due to relatively low fees charged by HCI.

This can also be assessed in terms of sales growth, market share and growth in customers. We cannot measure year on year growth for revenue and profit as prior year data is not available, but we can compare present market share which is greater for DCC.

Quality of college tutoring can be measured by relating number of students passing out of total students and then by comparing students getting job from total students passing. In this aspect HCI is a lot better college than DCC.

Flexibility means responsiveness to changed demand and here we notice HCI is planning to hire freelance lectures to help students during their evening time once they are off from their work. This aspect is really appreciative and suggests a farsightedness of the college management.

Resource utilization means the productivity of the service staffs and in this case, they are lectures/ professors. This aspect can be measured using the relation between teaching days available and number of days actually served. DCC has higher resource utilization ratio compared with HCI.

On the other hand, we apprehend some form of staff shortage in HCI when considering the total number of students served in HCI comparative to DCC.

Innovation suggests coming up with new and innovative mode of service delivery in context with the changing demand/environment. In present case we know that most of the students are working simultaneously to meet their college education cost. In regard to this situation, there is a need to bring in more online courses and distance courses, virtual classes so that time cannot be the barrier in learning. Both colleges are striving for the same and they stand in close competition as this regard.

Considering both the financial and non-financial goals of each college we can claim that HCI delivers a superior quality service, flexibility, making innovative attempts at comparatively lower price to meet the emerging needs of the students, which acts as a competitive edge over its direct competitor DCC.

Workings:

Dimensions	Measurement criteria	DCC			HCI		
		Budget	Actual	Rise	Budget	Actual	Rise

Financial(Results)							
Competitive performance							
Accounting	No. of application/No. of enquiries	70.00%	75.00%	7.14%	83.33%	95.00%	14.00%
Taxation	No. of application/ No. of enquiries	80.00%	78.95%	-1.31%	93.90%	97.44%	3.77%
	Market Share (in Revenue)		36.00%			22.00%	
Financial performance	% Increase in revenue		10.00%			7.90%	
	NP margin		27.78%			24.55%	
Nonfinancial(Determinants)							
Quality	Students passing/total students		95.00%			98.68%	
	Students getting jobs/students passing		89.47%			93.33%	
Flexibility	See explanation						
Resource Utilization	Teaching days/ days served		96.00%			92.00%	
Innovation	See explanation						

Note:

We do not get into discussing the standards and the rewards block of the model since Mrs. Kates was not able to provide much college information on these aspects.



Balanced Scorecard

In today's business environment information becomes a vital element and to gain competitive advantage over the peers, it cannot be denied. In this era of information age competition, a company cannot survive just by injecting huge capital investment in new technology for physical assets only or by excellent management of financial assets and liabilities. In this information age both manufacturing and service organization needs new capabilities for competitive success. Merely investing in and managing physical, tangible assets is not enough but an organization must be able to mobilise and exploit its intangible or invisible assets which in turn becomes a decisive factor.

Intangible assets enable an organization to:

- Maintain and further development in customer relationships to retain loyalty of existing customers and to serve new market/ customer segments effectively and efficiently.
- Introduce products and services as per the desire of targeted customer and market segments.
- Produce customized high-quality products and services economically with short gestation periods.

- Mobilise employee skills and motivation for better and consistent deliberation in process capabilities, quality, and response times.
- Deploy information technology, data bases and effective management information systems.

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.

Kaplan and Norton classified performance measures into four business 'perspectives':

Financial Perspective: "How Do We Look to Shareholders?"

In this step manager of a division or a unit, links its business objectives to the corporate strategy of the company as a whole. Financial performance measures indicate whether the company's strategy, implementation and execution are contributing to its revenue and earnings. To identify key performance measures in this perspective, managers, during strategic planning ask "How do we look to shareholders?"

Corporate strategy and strategic initiatives are examined from the financial perspective to see feasibility of these initiatives of being met. The financial objectives chosen at the onset of the balanced scorecard implementation should serve two purposes:

- To provide definite performance that was expected at the time of strategies selection.
- To provide a focus for objectives and appropriate measures in each of the other three perspectives.

Customer Perspective: "How Do Customer View Us?"

In this stage, companies identify customers and market segments in which they compete and also the means by which they provide value to these customers and markets. Managers identify the lead indicators which make a particular business unit or product different from that of others. Lead indicator may vary from customer to customer or market segment. If for example, a customer values on-time delivery then on-time delivery becomes a lead indicator. Examples of lead indicators may include any number of customer considerations, including:

- On-time delivery
- On-site service
- After sales support
- Defects per order
- Cost of the product
- Free shipments etc.

By delivering quality as per the customer demand and need, business units can improve outcome measures such as customer satisfaction, retention, acquisition and loyalty.

Internal Business Perspective: "At What Must We Excel?"

In this stage companies identify processes and activities which are necessary to achieve the objectives as identified at financial perspectives and customer perspective stage. These objectives may be achieved by reassessing the value chain and making necessary changes to the existing operating activities. If maintaining net earnings is the financial objective of a company and after sales service can increase customer retention, then internal business perspective needs to improve after sales services to satisfy customer requirements to maintain net earnings. This objective may be achieved by providing for example toll free customer helplines, setting up service centers in all major cities.

Learning and Growth Perspective: “How Do We Continue to Improve and Create Value?”

In the learning and growth perspective, Companies determine the activities and infrastructure that the company must build to create long term growth, which are necessary to achieve the objectives set in the previous three perspectives. Organisational learning and growth come from three principal sources:

- People i.e., employee capabilities
- Systems i.e., information system capabilities and
- Organisational procedures i.e., motivation, empowerment and alignment.

Since, the balanced scorecard is intended to improve long-term performance, managers may invest in resources needed in the short-run but this should not affect business unit's performance.

The ultimate result of using the Balanced Scorecard approach should be an improved long term financial performance. Since the scorecard gives equal importance to the relevant non –financial measures, it should discourage the short termism that leads to cuts in spending on new product development, human resource development etc. which are ultimately detrimental for the future prospects of the company.

Concept Insight

Responsibility to devise and implement a Balanced Scorecard

The responsibility to devise and implement a Balanced Scorecard should be that of the managers working with the business. Since every company is different, it shall need to work out for itself the various financial and non – financial measures, which need to be focused upon for its own development. Since the Balanced Scorecard is recommended as a management tool used both for internal and external reporting purposes, it is again the manager's responsibility to decide as to what information needs to be disclosed and how any problems of confidentiality can best be overcome.

Why Balanced Scorecard fails to provide for the desired results?

- The following are some reasons why Balanced Scorecards sometimes fail to provide for the desired results–
- Managers mistakenly think that since they already use non – financial measures, they already have a Balanced Scorecard.
- Senior executives misguidedly delegate the responsibility of the Scorecard implementation to middle level managers.
- Company's try to copy measures and strategies used by the best companies rather than developing their own measures suited for the environment under which they function.
- There are times when Balanced Scorecards are thought to be meant for reporting purposes only. This notion does not allow a Business to use the Scorecard to manage Business in a new and more effective way.

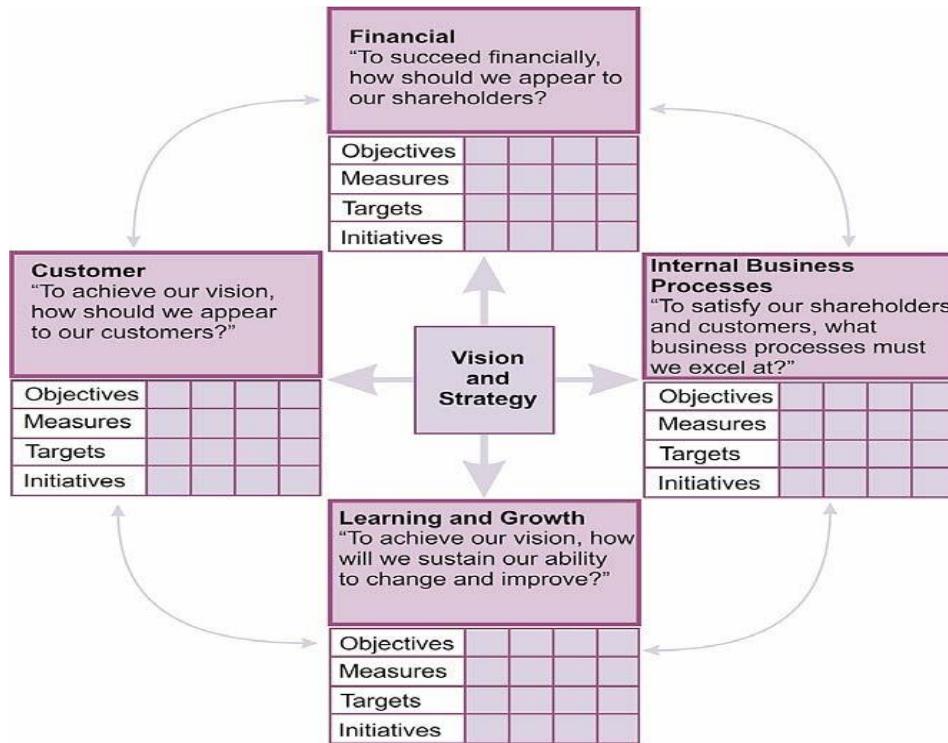
Note- It may be noted that the above-mentioned difficulties refer to the internal use of the Scorecard, unless it is used internally successfully, it should not be used as a basis for external reporting.

Concept Insight

Implementing Balanced Scorecard

Balanced scorecard deals with prospects like internal process, learning and innovations, which are highly people-oriented, hence change in human behavior may be sought, so managing the human behavior to launch the change is important (Key → link the rewards to scorecard measures).

The following figure summarises the ideas of a Balanced Scorecard



Strategy Mapping

The Strategy Map shows the objectives needed to execute the strategy. The balanced score card is a part of system that translates strategy into action. Strategy maps can be created for not-for-profit and public service entities, as well as for-profit enterprises.

BALANCE SCORE CARD (Summary)

Non-Financial Perspective				
AREA	CSF: - Objective (Critical Success factor)	KPI (Key Performance Indicators)	Suggestion (Compare target with actual)	
Internal Business Perspective. <i>(Immune system)</i> (Activity) (Infrastructure) Seamless Process Production,	Business efficiency,	Productivity,	If Productivity is low then process should be examined for Improvement.	
	Internal strength. Plant safety,	Utilization of resources, No. of accident.	Company could use JIT to reduce the procurement lead time.	
	Advanced Process.	Manufacture cycle time, * Average Time for Replacement * Cost Reduction due to high productivity.	If any measures are favorable then: - Comment: - issue discussed must be addresses in order to ensure that this trend	

capability Existing Employee, Customer को facility देने के लिये क्या क्या किया, अपने आप को Strong बना कर ही customer/staff को satisfy कर पाएंगे तभी तो Profit बढ़ेगा	Growth, Cost reduction due to high productivity	No. of hours spent in waiting by labour in assembly (one Process to another)	continue.
		Internet facility for backup to student, *Improve post sale services (new service center) Average time for Replacement Repair service.	
	Sale penetration Cross -Selling product (एक customer हमारे से एक से ज्यादा product खरीदे)	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.	
Customer Perspective (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)	
Implement Zero defect Policy. (TQM)	No. of A/c closed, New A/c Opened, Closure Request received (Banking)		
		Defective reduces by preventive maintenance.	
		Educate/Training to sales staff: - (behavioral	

			aspect)
		Discount Voucher Redeemed.	identify customer need/ requirement & fulfill them.
		Feedback.	
		LEARNING	
Learning, Growth, Innovation Perspective (Employees) For long term success.	Skills development for Labour /Supervisor. Improve employee job satisfaction/moral.	No. of training hours spent by employee, Computer training to staff. Cost leadership (reduction of cost by eliminating NVA) Employee Retention ratio, Employee satisfaction rating. (1-10)	Training session should be increased /Introduced for managers/staff. If staff turnover is high: - Reasons investigated & improve them, (Pay scale, working environment, lack of motivation, Reward).
		GROWTH	
	Increase the no. of new product or innovative, service sold.	No. of New vehicle Launched (New features)	
		INNOVATION	
	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.	Development cost should be a reasonable percentage of sale. (Neither low/ nor high).
Financial Perspective			
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: -I: 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:- 8

CASE STUDY No: -9 As per Regular Book

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 Centers	280	200	Take the total to 250
Employee Coverage under Training Programme	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 centers will be covered under this perspective.

The company has established 80 relationship centers 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 organization 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 organizational learning and growth come. **(ICMA LONDON)**



CASE STUDY No:- 9

Case Study No: - 10 (Balance Score Card) as per regular book

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 per unit
– New product = $\frac{\$70,000}{5,000 \text{ units}} = \14 per unit

Financial

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

$$-\text{ new product} = \frac{\$125,000 - \$70,000}{\$125,000} = 44\%$$

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 No: -10

Case Study No. -11 (Balance Score Card) as per regular Book

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%
Employee's 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. Steels Balanced Scorecard Report For the year ended March 31, 2019					
Perspective	Objective	KPI	Goal	Actual	Goal Achieved (Yes or No)
Financial	x	x	x	x	x

Customer	x	x	x	x	x
Internal Business Process	x	x	x	x	x
Learning and Growth	x	x	x	x	x

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) 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 of Core Product Line	Core product line profit as a percentage of core product line sales	5%	4.4%	No
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	Employee's 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 hems 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: -11

CASE STUDY No: - 12 as per regular book

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:

Claymax Limited Balanced Scorecard Report For the year ended March 31, 2019					
Perspective	Objective	KPI	Goal	Actual	Goal Achieved (yes or No)
Financial					
Customer					
Internal Business Process					
Learning and growth					

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: -12

Case Study No: - 13 (Balance Score Card) as per Regular book

Your bank Ltd, was established on the 30th 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 popularity of new style banks. These 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.

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: -13

CASE STUDY No: - 14 (Balance Score Card)as per regular Book

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 organization. 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

Basic: - Focus: -

Financial Results, Project made by Co., Cost saved against budget, Growth in Revenue, Profitability: -
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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 focusses 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	➤ Most Profitable company become No./Co. in terms of Market share, Revenue Growth	➤ Profitability Ratio. Rev. Growth, No. of vehicles sold, ROCE, GP Ratio. ➤ ROI Average rate per used.
Non-Financial Perspective		
Customer Perspective (Result)	➤ Be No. Choice of Customer, Implement, Zero recall (def.) ➤ Policy, quality, Customer Loyalty	➤ Turnaround time. ➤ Feedback, On time delivery ➤ No. of Customer complaint, ➤ Defective goods, after sale service ➤ Warranty Repairs. ➤ Increase customer retention ratio. ➤ Increase in No. of customer ➤ Average replacement time.
Internal Business Perspective. (immune system) (Activity) (Infrastructure) Seamless Production	➤ Business efficiency, Internal strong. Advanced Process. ➤ Growth, Improve post sale/internet service /Facility for back up. Sale penetration ➤ Plant safety.	➤ Productivity, Utilization of resources, ➤ Manufacture cycle time, ➤ No. of hours spent in waiting by labour in assembly ➤ (One Process to another), Flexibility, Growth, No. of accident, Improve post sale services (new service center)
Learning, Growth,	➤ Update Technology used in	➤ Amount spent in Research &

Innovation Perspective (Employees)	<p>Manufacturing facility</p> <ul style="list-style-type: none"> ➤ Skills development for Labour /Supervisor 	<p>Development.</p> <ul style="list-style-type: none"> ➤ No. of training hours spent by employee, Employee Retention ratio, Employee Satisfaction. ➤ No of New vehicle Launched (New features) ➤ Cost leadership ➤ Computer training to staff. ➤ Like Flip cart, Amazon. ➤ Flow of new idea, IT system. ➤ Computer Training to staff.
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CASE STUDY No:- 14

Case Study No:-15 Balance Score card as per regular book

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 footprint 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

Mission	"Improving people's lives with our health care products in a socially cognizant way"
Vision	"To beat trusted health care partner"
Objective	"To offer people designer eye wear at are volitional 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

Performance Measure	2019Actual	2019 Target
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 (per 1,000customers)	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.

Customer's complaints have 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: -15

CASE STUDY No: -16 Value Chain Analysis, Balanced Scorecard, as per regular book

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.

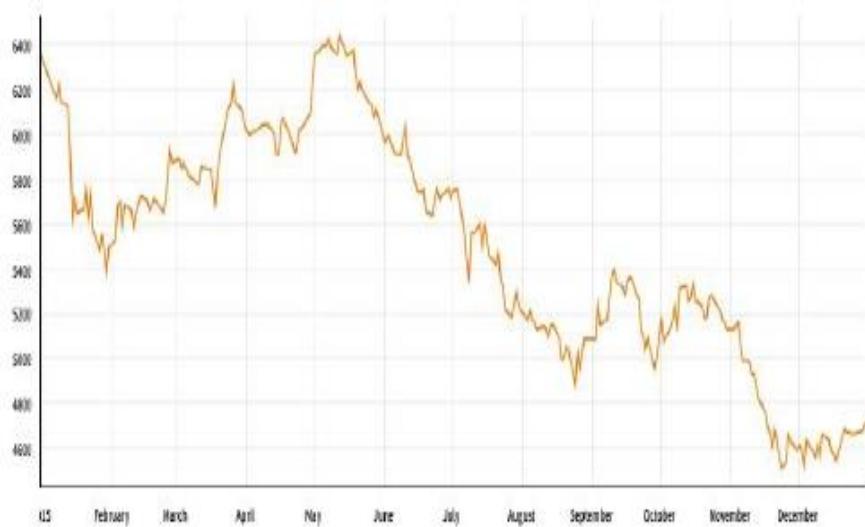
The bonus of procurement team largely depends on the annual savings as compared to the budgeted cost of purchase. I am not happy with the approach of speculation and making profits out of price

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: -

I.(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:-16

CASE STUDY No: - 17 (Balance Score Card) as per regular Book

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"> • To increase the number of new and returning customers

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

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: -17

CASE STUDY Reference- Question No:- 42 From Regular Book(Balance Score Card)

NFC Limited is a company engaged in the manufacture and supply of forgings and castings for automotive and industrial applications. Automotive contributes to 60% of its revenues while the balance (40%) can be traced to industrial applications which amongst others include, Power, Oil and Gas and General Engineering. The company has an R&D set-up which includes new product development. The company recently concluded successfully a Long- Term Settlement with the workmen with an increase in productivity numbers in terms of output per man per day more than offsetting the increase in wages offered to workmen. The company has just completed (October 2018) its strategy and business planning exercise for Calendar year 2019 and beyond. The following is the data on 2018 (estimate) and the business plan for 2019.

Balance Sheet	Estimate 2018		Budget 2019
	Million	Million	
Equity	3,000	3,000	

Balance Sheet	Estimate 2018	Budget 2019
	Million	Million
Reserves (Opening)	1,000	2,250
Transfer (Current year surplus)	1,250	730
Debt @10% (pre-tax)	2,000	1,500
Trade Creditors	600	700
Total	7,850	8,180
Plant and Machinery	4,000	3,500
Inventories	1,500	1,630
Debtors	1,600	1,770
Cash	750	1,280
Total	7,850	8,180
Profit and Loss Account		
Sales	9,000	10,800
Less: Expenses	6,000	7,000
Less: Depreciation	500	500
Less: Interest	200	200
Profit	2,300	3,100
Less: Tax @ 30%	690	930
Profit After Tax	1,610	2,170
Less: Dividend and Dividend Distribution Tax	360	1,440
Transfer to Reserves	1,250	730

Assumptions/objectives drawn up in the making of the strategy and business plan document are as follows:

1. To improve shareholder value by attempting to grow EVA substantially over 2018.
2. To de-risk exposure to few sectors further by looking at other diverse applications through new technologies, tie-ups etc. This could be in the areas of Defense and Aerospace or even new areas like Electric Vehicles which would be the future in the mobility space.
3. To keep investing in R&D to ensure that the company keeps pace with changes in technologies and in meeting customer requirements by developing new products in accordance with their needs
4. Financials:
 - a) An increase of 20% in Sales has been assumed over 2018. This includes an expected market growth of 12%, 3% from a new product “NP” to a large manufacturer (a new customer) for 9 months in 2019. It is expected that the new customer will approve the product by March 2019 (3 months from January 2019 when the approval process will start) so that 9 months sale can be realized. It normally takes 5 months for the approval. The company expects the balance 5% growth from normal new products, new customers, improved service levels in terms of delivery etc. Capacity is sufficient, also aided by the productivity improvement from the Long-Term Settlement with the workers.
 - b) **Inventories:** A reduction in number of days inventory held by ₹ 5 days has been budgeted. Without this reduction, the inventories would have been 1,800 Million as against ₹1,630 Million budgeted.
 - c) **Debtors:** A reduction in number of days sales outstanding by ₹5 days has been budgeted. Without this reduction, the debtors would have been ₹1,900 Million as against ₹1,770 Million budgeted.
 - d) Expenses have been budgeted at ₹7,000 Million taking into consideration cost savings. It should have been ₹ 7,500 Million taking into consideration, increased activity levels (Sales), cost inflation including the wage increase from the Long-Term Settlement but without cost savings.

- e) No reduction or increase in creditors budgeted except for the increase in activity levels (Sales).
- f) Repayment of debt ₹ 500 Million on 31st Dec 2019.

Required:-

Your superior, the CFO of the company has asked you to:

- (i) **PREPARE** a Balanced Score Card for Calendar year 2019 including objectives to be included for achieving long term goals of the company. He informs you that the company wants to use EVA as an overall performance measure and a driver to achieve improved shareholder value.
- (ii) The CFO also wants you to indicate metrics where possible and but ignore weightages for the perspectives and clearly **EXPLAIN** the inclusion of the objectives in each perspective of the balance score card.
- (iii) You have therefore been also entrusted with the task of **PREPARING** the Economic Value Added (EVA) with assumptions for the previous year 2018 (estimate) and also for the budget year 2019 and ensure that this forms the predominant basis for the balanced scorecard. Cost of Equity is 14%.

Answer:-

Balanced Score Card

Perspectives	Objective	Measures	Targets	Initiatives
Financial	₹	₹	₹	
EVA (Millions)	Grow EVA	Absolute	1,435 Million	Repay 500 Million of debt Reduce working capital Improve profit through top line growth and cost reduction
Working Capital	Reduce working capital	Reduce inventory and debtors by 5 days each	300 Million reduction (170 + 130)	MIS on inventory and debtors on real- time basis Weekly short meetings on inventory and debtors to monitor and initiate actions to achieve targets
Customer				
New Products	Increase over 2018	As a % to Sales	From x % to y %	Meet existing customers with new product offerings Meet new customers and find out their requirements Participate in exhibitions
On time Delivery	Increase over 2018	% of deliveries on time to total deliveries	From x % to y %	Strengthen production planning and control process Leverage IT systems for accurate and timely information flow on orders, delivery dates
Internal Process				
Manpower	Increase output	As agreed	From XX	Training of employees

Productivity	per man per day	under the long-term settlement	to YY	Improved communication Improved supervision
Cost Reduction	Reduce cost of Production	Raw material costs Outsourcing costs Overheads	500 Million Reduction	Alternate sources for raw material Improve yields through value engineering Make or buy on certain high-cost outsourced components
				Reduction in travel costs (use video conferencing), Monitor other costs to save
New Product Approval by Customer	For expediting approval of "NP"	Reduction in time taken for approval	By 2 months	Form a task force Weekly progress monitoring by CEO Use of PERT/CPM tools
Learning and Growth				
Train senior technical staff in new technologies (products for defense, aerospace)	To keep pace with changing technologies and to de risk exposure to few sectors	Timeline	By MMYY (e.g., Dec 20)	Specific training Participation in seminars on new technologies
Explore possibilities for tie-ups on products for Electric Vehicles.	Future growth Through products for Electric Vehicles	Timeline	By MMYY (e.g., Jun 20)	Appoint a consultant To look at possible partner Prepare a road map to achieve the objective

Rationale for each of the above perspectives:

EVA has been included under "Financial Perspective" as this is what the company intends to drive the same and it is a good measure of shareholder value as it takes into consideration cost of equity which a normal profitability metric ignores. Working Capital is included, as an improvement in the working capital measure would affect cost of capital and hence EVA.

New products and improvements in delivery times have been included under "Customer Perspective" as these have to be driven to achieve the sales volumes beyond normal industry growth. This will ultimately improve sales, profits and hence EVA.

Manpower productivity and cost reduction have been included under "Internal Perspective" as these have to be monitored and further efforts taken to reduce other costs to achieve the cost reduction planned to finally achieve the profits required to deliver the EVA.

As the balanced score card is just not a short-term measure, initiatives on new products, technologies and new markets have been included in the "Learning and Growth" perspectives to plan for long term sustained growth and to ensure that the company stays relevant in a changing business environment.

EVA Calculations

Particulars	2018 (Est.) Million (₹)	Budget 2019 Million (₹)
-------------	----------------------------	----------------------------

PAT	1,610	2,170
Add: Interest adjusted for tax {Interestx(1-0.3)}	140	140
NOPAT	1,750	2,310
Capital Employed (see assumptions below)		
Equity (14%)	3,000	3,000
Reserves	1,000	2,250
Debt (10%)	2,000	2,000
Cost of Capital		
Equity (14%)	420	420
Reserves (14%)	140	315
Debt {10%x(1-0.3)}	140	140
Cost of Capital	700	875
EVA (NOPAT – Cost of Capital)	1,050	1,435

Assumptions

For 2018 estimated, Capital Employed is opening equity, reserves and debt. Similarly, for budget 2019, for calculating Capital Employed, opening equity, reserves have been considered. Economic and accounting depreciation were assumed to be the same.



CASE STUDY No: -18

CASE STUDY -Reference Question No:- 43 From Regular Book (Balance Score Card)

ABC Limited is an auto component manufacturer having a facility in Chennai. It has been in the business for the past 7 years supplying a range of gaskets for automotive applications. It predominantly supplies to car manufacturers in and around Chennai but also in a small way to a few manufacturers based in Pune and Bangalore.

The promoters have worked previously in automotive industry and have several years of experience in the auto industry.

Quality is of paramount importance in gaskets especially for cylinder head gaskets as any leak (considered a major defect) could severely damage the engine. While the company is certified for TS 16949 standard of quality systems, the PPM (parts per million of defects) of finished products of the company are yet to reach “Zero PPM” levels which are the levels reported by its nearest competitor.

As the supplies are made to auto OEMS (original equipment manufacturers), just in time supplies are a must to avoid line stoppages at the customer end. It has signed purchase agreements with a few auto manufacturers with a clause amongst various others to pay for line stoppages at customers end.

The procurement function plays a critical role as the quality of input raw material can obviously significantly impact the quality of gaskets produced. Also, input material has to be made available in time to avoid stocks outs of raw materials, loss of production and hence line stoppage at customers end.

While the company has taken a conscious decision to keep stock of finished goods at a rate higher than industry to avoid stock outs, it has decided to keep input raw material stocks at low levels to partially manage the impact of inventory holding costs as it has to maintain low working capital levels to save on interest cost.

The sales function besides having the challenge of finding new customers, offering new products and collection of dues is faced with a daunting task of getting price increases arising out of input cost increases from tough auto customers.

Gaskets in general apart from automotive find use in refineries, power generation, chemical

processing, industrial machinery, pulp & paper, food & pharmaceuticals and a few other industries viz. textiles and wastewater treatment.

The CFO met the CEO and they discussed declining growth, operating and net margins as well as loss of customers due to price and quality considerations. The CEO indicated that the Board wanted the company to grow double the turnover by 2024 with 2019 as the base. He wanted the CFO to make out a draft Balanced Score Card for 2020 addressing the challenges faced by the company and also its objective of doubling the turnover by 2024, so that this can be discussed with the Senior Management Team and finalized.

Required

You are a Senior Finance Manager of the company and the CFO asks you to draft brief report and he also provides you with newspaper reports on India's move towards BS VI emission norms, the India's plans to move to Electric Vehicles and also about the current slowdown faced by the economy including a severe one in the automotive industry

Annexure

	2019	2018	2017	2016	2015
Revenue growth over Previous year	8.1%	8.8%	9.7%	1.6%	---
Revenue (₹ Cr.)	400	370	340	310	305
Expenditure (₹ Cr.)	-359	-326	-297	-277	-265
Operating Profit (₹ Cr.)	41	44	43	33	40
Interest (₹ Cr.)	-14	-13	-12	-11	-10
Depreciation (₹Cr.)	-14	-13	-12	-8	-8
PBT (₹Cr.)	13	18	19	14	22
Operating Profit %	10.3%	11.9%	12.6%	10.6%	13.1%
PBT %	3.3%	4.9%	5.6%	4.5%	7.2%

Additionally, the following information is to be noted:

PPM has deteriorated to 115 in 2019 from the best of 25 achieved in 2017.

Working Capital turns (Sales/ Working Capital) have deteriorated to 34 times from 67 times in 2017.

The company also lost three of its customers who cited quality and price considerations.

The company's attrition at middle management was high at 13% compared to industry's 10%. The predominant reasons attributed to this are lack of challenging work and career growth prospects.

Answer:-

Report

Addressed to:

Office of CEO,

ABC Limited,

Dated – 24th April 2020

Report on Balanced Score Card for 2020 addressing the challenges faced by the company

The challenges faced by the company can be categorized as follows:

Financial: Declining profitability and hence reduced returns to shareholders. Possible causes; Declining sales growth, challenges in getting price increases, increasing cost of quality due to increasing defects (PPM), higher interest costs due to higher working capital.

Top-line (sales) related: Declining sales, slowdown in economy, dependence on auto industry, lack of- new products, new customers, and loss of customers.

Operations including procurement: Increasing PPM levels, input cost increases.

Balanced Score Card

Perspectives	Measures/ Targets
Financial Perspective	Grow Sales by 10% (over 2019) by December 2020. PBT Margin for 2020 not to be less than 10%. NWC turns to be 60 by December 2020.
Customer Perspective	Bring down PPM levels to 50 by March 2020. Bring down Cost of Product by 5% and share 50% with customer. Carry out a Customer Satisfaction Survey by March 2020 and implement actions by December 2020.
Internal Perspective	Launch and adopt Total Productive Maintenance. Complete training by April 2020, Launch and adoption from May 2020 Form a cross functional team for working on, monitoring and improving NWC; through reduction of inventory (reduce number of days FG from xx to yy), speedy collections (reduce number of days receivables from aa to bb), negotiating higher credit from raw material suppliers (increase credit from x to y days). Reduction in time to launch new products from xx days to yy days.
Learning and Growth	Conduct a market study for entry into manufacture of gaskets for sectors other than automotive as a de-risking and growth strategy. Complete study by June 2020 and action viability study and CAPEX by December 2020. Revisit and rehash Human Resource Development program to bring in new talents, train existing resources on new technologies, new products by June 2020. Adopt latest Information technologies for speedy and accurate data analysis and Management Information System for quick decision making, speedier internal operations and quick customer service.

Rationale for the above

Tasks included in the Learning and Growth perspectives will help the company's growth as it will de-risk the threat from Electric Vehicles which will eliminate the need for internal combustion engines used in fossil fuel driven automobiles. It will also enable the company to enter into other industries where gaskets find use. The Human Resource Development Program will address the dual challenge of attrition and making the current employees ready for new markets and technologies. With Information Technology space changing, adoption of new technologies will help the company staying ahead or in tandem with competition.

Including Total Productive Maintenance will help the company address quality issues and productivity of machines. This along with NWC initiatives will not only improve customer satisfaction but also improve bottom line.

Inclusion of PPM, cost reduction and customer surveys will improve Customer satisfaction, customer retention, bring in new customers and stop loss of customers. Inclusion of growth in sales targets will help achieve the company's growth objectives. Others like net profit improvement and improvement in NWC will automatically flow from the initiatives in the other three perspectives.

Further details can be tabled on requisition basis.

Closure of Report
Chief Financial Officer
ABC Limited



CASE STUDY No: -19

CASE STUDY- Reference Question No:- 44 From Regular Book (Balance Score Card)

An apparel manufacturing company has a factory in Ahmedabad, making denim clothing for customers of all ages. It sells its clothing from its factory outlet store located within the city. Until 6 months back, the company had a business model wherein the products manufactured at its factory would be sent to its factory outlet store. Customers would visit the store and choose apparel suiting their tastes. Production was based on prediction of customer demand. This “made to stock” model has been placed for many years.

Few months back, the store manager noticed many customers exiting without making any purchases. Tracking this and after obtaining feedback from customers over sometime, it was found that many products were unacceptable to the customers’ tastes - either the shade or design of denim was not what they wanted or that the apparel was not of the correct fit for them. The management then decided to provide customers a choice of either choosing from their standard apparel range that has already been made (“made to stock” model) or to offer them a “made to order” option.

The company now displays its range of denim material at the factory outlet. Customers can go through the samples and choose the material of their choice. Company certified tailors would then take measurements based on the customers’ preferences. A detailed order customized to the customers’ needs would then be drawn up. The factory has set up a separate tailoring division that would stitch the apparel specifically for these “made to order” sales. For this new machines and production line resources have been put in place.

Customized products are manufactured and be made available to the customer within 3 working days’ time from the date of placing the order. The customer comes to the store and picks up the apparel ordered. For delays beyond this timeline, the customer gets to pay 5% less on the order value. This is done to attract and maintain customers, who would otherwise choose to purchase apparel offered by rival competitors. Therefore, speed of delivery of the customized product is critical for the company. This is the main selling point for the company to operate the “made to order” business model.

If further modifications are needed due to errors on part of the company (quality / finishing issues), the apparel would need to be modified / re-stitched once again. The company will bear the cost of modification or replacement of garment.

This new “made-to-order” has been in place for the past 6 months. At the stage of project proposal, the management found it a lucrative option for the company because:

- (i) Customers are willing to pay a higher price to have customized clothing as compared to the standard fitting.
- (ii) It would attract more customers to the store
- (iii) If the model works well, the dependence on the “made to stock” model can reduce. Savings in inventory stock, obsolescence and warehousing costs will benefit the company’s bottom-line.

Customers have been very enthusiastic in availing this customization facility offered by the company. Sales have increased manifold in the last few months. Therefore, the management is interested to understand the metrics related to their “made to order” business mode to assess its success and risks. Some of the non-financial metrics are:

Metric	Month					
	1	2	3	4	5	6
Orders needing modification on account of errors in order taking or manufacturing process (% of sales orders made under “made to order” model)	15%	12%	10%	8%	5%	4%

Orders delivered beyond the 3 working days timeline (% of sales orders made under "made to order" model)	5%	4%	3%	6%	7%	5%
Production downtime (hours)	44	88	22	141	132	123
Labour idle time due to unavailability of material (hours)	25	22	17	13	24	22
Ratio of "made to order" to total sales from the factory outlet (Ratio of sales value)	16%	22%	25%	32%	34%	38%
Repeat orders by customers availing this facility (% of customers giving repeat order / total customers availing "made to order" facility)	4%	21%	33%	54%	60%	63%

Required

ANALYZE the non-financial measures of quality of the division over the six-month period. Focus on the production performance, delivery cycle performance and customer satisfaction.

Answer:-

Analysis of the operating data of the “made to order” at the business store revealed the following:

Production Performance:

- (i) **Modifications to orders:** This company has to bear the cost of modification / replacement of the garment incurred on account of error in its order taking or manufacturing process. Therefore, orders needing such modification should be kept at the minimum. Such instances were higher than 10% in the first three months. With experience, either in the order taking process or manufacturing process, these errors have reduced substantially in the later months. The managers of the order taking and manufacturing departments need to understand and constantly keep track of these errors in order to keep them at a bare minimum. Management may want to set a benchmark, financially in terms of the cost of modification and non-financially in terms of the acceptable threshold for such instances. Monthly tracking of this metric will help detection of errors earlier.
- (ii) **Production downtime:** Production downtime normally occurs either due to break down of machinery or plant maintenance. It is unproductive time, reducing the machine's capacity. It must be kept minimum. Downtime hours have been steadily increasing in the past 3 months, the overall monthly average being 91.67 hours. The production manager has to analyze and take corrective action at the earliest. Urgency of the issue can be compounded by the fact that sales orders under the “make to order” model have been increasing steadily over the last few months. In the latest month, 38% of the overall sales was from this model. Therefore, the production capacity should be utilized optimally to ensure ability to meet delivery deadlines.
- (iii) **Labor Idle time:** Labor Idle time due to unavailability of material is another unproductive waste of resource. The procurement department can address unavailability of material. On an average 20.5 hours of labor time is idle due to unavailability of the appropriate material. Appropriate steps with suppliers can lead to agreements to ensure seamless supply of material when required. This will enable the company to meet delivery deadlines given to customers.

Delivery Cycle Performance:

- (i) **On-time delivery:** The orders need to be delivered to the store within 3 working days of placing order. The customer picks up the order from the store. Speed of delivery is critical to the company. Any delay beyond this timeline, the customer benefits by a 5% reduced price on the order as compensation for delay. Prompt delivery is also the company's selling point to attract customers, who would otherwise patronize its rivals. On an average 5% of the orders are not delivered within time. Therefore, average delivery success rate is only 95%. The management has to take steps that this is kept to the minimum in order not to stem loss of revenue as also to build brand loyalty with the customer base.

Customer Satisfaction:

- (i) **Repeat orders by customers:** Prompt, quality delivery of the customized order would ensure that customers return in future with further orders. Statistics shows that repeat orders have steadily increased, which is a very positive signal to the management. Initially, only 4% of the customers under this model placed repeat orders. This increased substantially. Now almost 63% of the customers who purchase under this model come back with more orders!
- (ii) **Sales mix:** Popularity among customers for customized services is further validated by the steady increase in the ratio of such sales to the overall sales of the company from the factory outlet. Now, this model generates an average of 28% of the total sales from the outlet, with a likely projection of having a higher share in the overall sales mix. Therefore, the “make to order” model can be termed a success.

Workings

Metric	Month						Monthly Average
	1	2	3	4	5	6	
Production performance							
Orders needing modification on account of errors in order taking or manufacturing process (% of sales orders made under "made to order" model)	15%	12%	10%	8%	5%	4%	9%
Production downtime (hours)	44	88	22	141	132	123	91.67
labour idle time due to unavailability of material (hours)	25	22	17	13	24	22	20.50
Delivery cycle time							
Orders delivered beyond the 3 working days timeline (% of sales orders made under "made to order" model)	5%	4%	3%	6%	7%	5%	5%
Customer satisfaction							
Repeat orders by customers availing this facility (% of customers giving repeat order / total customers availing "made to order"facility)	4%	21%	33%	54%	60%	63%	39.17%
Ratio of "made to order" to total sales from the factory outlet (Ratio of sales value)	16%	22%	25%	32%	34%	38%	28%



CASE STUDY No:- 20

CASE STUDY -Reference Question No:-45 From Regular Book (Balance Score Card)

Kristin LLP sells wide range of household products. The firm has recently received few negative feedbacks about the product and customer services. CEO is not happy with this. As per the opinion of CEO –

“Nowadays when social media play such an important role in making decisions, its crucial to keep an eye on the quality of customer service you provide. If you don’t care about customers’ satisfaction, don’t expect them to care about your services or products. When customer share their story, they’re not just sharing their problems. They are actually teaching you how to make your product, service, and business better.”

There has been considerable discussion at the corporate level as to improve ‘Customer Satisfaction’. Convinced with this logic, firm has invested heavily in customer satisfaction and adopted the following

plan of action—

- providing helpline 24/7 in order to develop personal relationship with customer;
- redesign its online platform in order to make it more customer friendly;
- rewarding loyal customers by giving them experience, they would not forget for life; and ease the return and refund policy, offering no questions- asked guarantee is a smart move over competitors.

The CEO was initially delighted to see that their efforts pay off in the form of higher customer satisfaction score index, however he is anxious to see the corresponding Financial results.

Required



Does the seeming lack of improvement in financial performance with customer satisfaction, Kristen LLP should stop investing a superior customer experience? DISCUSS.

Answer:

In this case we can see that there are two considerable sides of the question one is customer satisfaction and another one is profitability. By adopting the proposed plans firm manage to get higher customer satisfaction score card and it is expected that with high customer satisfaction, the firm's financial result will improve i.e. increase ROA. However, increasing the customer satisfaction is costly. Plans which are used to increase customer satisfaction will increase the cost of the firm. This additional cost will weaken the firm's ROA by lowing profit and increasing the asset base. The optimum level of customer satisfaction is where the incremental benefits are equal to incremental costs of increasing satisfaction.

While observing the pattern of data, the customer satisfaction has increased from 85 points to 91 points in first three quarters of 2019. At this level, the additional benefits seem to more significant than the additional cost. However, in subsequent quarters, additional cost has increased more rapidly than the additional benefits. Therefore, there is decrease in ROA as we move forward on the index. However, toward the end of 2020, we see a marginal increase in ROA. This is due to the lead-lag relation between satisfaction and ROA. Increased satisfaction might take some more time, some more quarters to result in higher ROA and the relation might not be linear. However, toward the end of 2020, the customer satisfaction score stabilizes at current levels (93-96 points).

Overall, Kristin should not stop investing in superior customer experience, the lack of apparent pattern in customer satisfaction and profitability could stem from several causes as discussed above. Instead, firm should take decision considering current satisfaction levels, the cost to increased satisfaction, and perception of the increased benefit. Moreover, the firm should also consider the current sales, otherwise it might lose its share to competitor if they do nothing!



Value for Money (VFM) Framework

A framework which can be used for measurement of performance in not-for-profit sector is the Value for Money framework. Not-for-profit organisations are expected to provide value for money which is demonstrated by:



- **Effectiveness:** Whether the organisation has achieved its desired mission and objectives?
- **Efficiency:** Whether the resources and funds available to the organisation has been utilized efficiently i.e., maximum output has been obtained with minimum input?

Economy: Whether the desired output has been obtained using the lowest cost? It must be noted that use of lowest cost approach should not compromise quality.

Value for Money

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



Nature of Organization	Objective (C.S.F.) Goals	KPI (How can we measure)
Normally School	<ul style="list-style-type: none">➤ Customer Satisfaction➤ To Provide better quality education to desired/Poor student	<ul style="list-style-type: none">➤ On time delivery, Quality➤ No. of student dropping out of school (Should be low)
Hospital	<ul style="list-style-type: none">➤ To Provide better quality treatment to patients➤ Prompt medical services➤ Satisfaction of Patient	<ul style="list-style-type: none">➤ No. of student success fully complete their course &join next higher study/Job (Should be high).➤ Re admission of patient in next short period (low)➤ Low patient waiting time
For cleaning	<ul style="list-style-type: none">➤ Improve cleanliness of	<ul style="list-style-type: none">➤ How-From Feedback/complaint, message

To Contractor appointed	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.	from visitor's surprise visit by inspector.
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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)
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)
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)
(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)
Hospitals	➤ How much amount spent on Maintenance, Salary of Doctors/ staff.	➤ Salary amount should be significant/Justified compare with budget or other Hospital (Bench mark)
Contractors for Cleaning	➤ Cleaning Expenses ➤ Competitive tending Process: - Followed Review ➤ Quality of service with lowest cost.	➤ 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 ➤ Compare with Budget/ Targate



CASE STUDY No: -21

CASE STUDY No:- 18: Value for Money – Charitable School as per regular Book

Let's consider a case of a school which provides free education to children who come from BPL (below the poverty 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 completed 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.

SUMMARY

EFFECTIVENESS

(Are the Organization achieve their objective)

Nature Organization	of Objective (C.S.F.) Goals	KPI (How can we measure)
Normally School	<ul style="list-style-type: none"> ➤ Customer Satisfaction ➤ To Provide better quality education to desired/Poor student 	<ul style="list-style-type: none"> ➤ On time delivery, Quality ➤ No. of student dropping out of school (Should be low)
		<ul style="list-style-type: none"> ➤ 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 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"> ➤ How many students can be teacher trained by a teacher in one hour 	<ul style="list-style-type: none"> ➤ 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 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)
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CASE STUDY No: -22

CASE STUDY No: -19: -Value for Money as per regular Book

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 our 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 our role in running the hospital.

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

	Cure Hospital	National average of other PPP run hospitals
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 of 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 ₹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 ₹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 averages. 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 is 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 outpatients 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 Organization	of 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.	8360	6369

			of in-patients treated (b)		
	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	<ul style="list-style-type: none"> ➤ No. of Patient treated by doctor in a period 	<ul style="list-style-type: none"> ➤ 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) 8360 76,212 84574	+ = 6369 63318 69687.	No. of Doctors (b) 80 84574/80 = 1057 (High Resource utilisation)	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.) Goals	K.P.I. (How can we measure)	Data			
(Assess the Financial aspect of Activity)				Cure hospital	National average at Other centers	
Hospitals	How much	Salary amount should be	No. of	80	76	

	amount spent on Maintenance, Salary of Doctors/ staff.	significant/Justified compare with budget or other Hospital (Benchmark)	Doctors Average salary	1,20,000 per month As per budget	1,60,000 (Higher than the budget)
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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 Rs 120,000(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:- 23

Case Study No:- 20 -Value for Money as per regular book

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 analyzing 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:

- 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.
- 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.

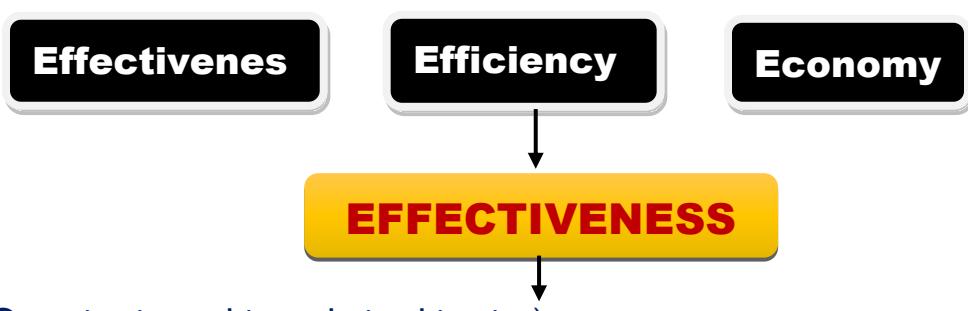
Yours Faithfully

Management Accountant

(Mock Test Paper)

Summary

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



(Are the Organization achieve their objective)

Nature Organization	of Objective (C.S.F.) Goals	KPI (How can we measure)
------------------------	-----------------------------------	-----------------------------

Normally For cleaning To beach- Contractor appointed	Customer Satisfaction 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.	On time delivery, Quality How-From Feedback/complaint, message from visitor's surprise visit by inspector.
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EFFICIENCY (Productivity)
(Max Output can be achieved with Minimum Resources)

Nature of Organization	Objectives (C.S.F.) Goals	K.P.I. (How can we measure)
Normally: - Consumption of Time/material per unit of Production		
Cleaning Authority	<ul style="list-style-type: none"> ➤ Cost per operation per tractor/Vehicle/Per Km. 	<ul style="list-style-type: none"> ➤ 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"> ➤ Cleaning Expenses ➤ Competitive tendering Process: - Followed Review ➤ Quality of service with lowest cost. 		<ul style="list-style-type: none"> ➤ 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 ➤ Compare with Budget/ Target



Summary

EXP: (I) Payment to contractors/ (ii) Mat, lab exp of disposal can	Actual expenses Should be compared with budget as well as
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	other completion expenses
(iii) Empty waste from Bin Justified Exp law: Quality high	
Comment: - If actual exp> Budget Reasons should be identified. Analyzed Take corrective action	
Challenges: -	
Defining standard of cleanliness, Breakup of litter, from work of policy	
Visitors: -Requested: Civic lab not to spread litter, Litter: -High high level of cleanliness is it, Low: -low level of cleanliness low effective	
Comments: -	
Effectiveness: -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 patientsWaiting time (Not so good)	
Comment	
All through curve hospital <u>achieved</u> economy level at satisfactory by paying Low amt as salary but requiting low satisfaction with in staff 16% as compare 80%(Others)	



CASE STUDY No:- 24

CASE STUDY-Reference - Question No:-35 From Regular Book (Value for Money)

The World fame Taj Mahal is situated on the banks of Yamuna River in the city of Agra, Uttar Pradesh known for tis beautiful design and is counted as one of the Seven Wonders of the World; the city attracts a lot of tourist from all around the world. The Tourism is one of the main sources of livelihood for its residents. Consequently, cleanliness and maintenance of garden area within the Taj Mahal campus is of prime importance in order to sustain and develop this industry.

The local government has recently employed a contractor to clean and maintain the garden area within the Taj Mahal campus. The contractor uses cleaning machines pulled by horses to avoid pollution. The contractor has been selected through an online competitive tendering/bidding process. Majority of the litter comprises of plastic waste (bags, bottles etc.) while some portion also includes glass, aluminum cans, paper and cardboards. A detailed log is held by the contractor about the waste has been cleaned, time taken for the clean-up, number of horses used etc. This log is also checked and signed by local government officials. This record is used to process payments at the end of the month.

In addition to contracting the local government has also placed bins at various locations within the campus for the public to dispose their waste. The Nagar nigam's workers clean these bins every morning. Again, detailed logs of the man power and other resources employed are kept by the respective department. In addition, the government has started a mobile messaging system, whereby the public can message the concerned department if they find litter anywhere in the campus. Depending on whether it is from overflowing bins or scattered waste, the Nagar Nigam's workers will take action to clean it within 12 hours. A detailed log of these operations is also maintained. Patrons can also suggest measures for improving cleanliness on the above-mentioned areas.

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 maintaining the cleanliness of the campus. Therefore, the government wants to assess whether the city is getting "good value for money" from expenditure. The "Value for money" concept can be looked at from three perspective: (i) economy, (ii) efficiency and (iii) effectiveness. The internal audit 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 Taj Mahal campus cleaning operations or on effectiveness of the same. Economy and efficiency audit assets 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:-

Recommend guidelines to assess economy, efficiency and effectiveness of Taj Mahal and campus cleaning operations.

Identify challenges involved in assessment of effectiveness.

Recommend general guidelines, how the audit team may conclude the audit based on the combined outcomes of economy, efficiency and effectiveness.

(DEC2020 PAPER)

Solution:-

(i) Economy, efficiency and effectiveness are three dimensions of value for money. Economy and efficiency audit of an operation focuses on the consumption of resources and the output achieved. Whereas effectiveness audit of an operations focuses on the comparison of outputs achieved with the desired level of output.

Economy

The Dimension of economy assesses the financial aspects of the activity i.e., are the objectives of the activity being achieved at reasonable cost?

To look at economy of cleaning and maintaining (of the garden area in-side the campus of Taj-Mahal) operations, the cleaning expenses need to be bifurcated into different cost centres such as payments made to the contractor, the expenses of emptying waste from bins, and mobile messaging system. At this stage only the competitive tendering process may be reviewed to ensure that the contractor getting the order is offering the required quality of service at the lowest price, similar way bins are procured at lowest possible price etc.

Further subcategories of these expenses into cost head such as labour, material, disposal van expenses etc. also need to be collated from the cost records. (This will help in comparison over a period as well).

Then afterwards, these shall be compared to the budgets that were approved by the local government of Agra. If the quality of cleaning has been achieved, by staying within budget, the operation is economical. However, if the actuals exceed the budgeted, then government shall make comparison of cost with cost of similar cleaning operation. On comparison, if found that cost incurred by Agra local government is more; then the cleaning operations are said to be non-economical and these may not be efficient too.

Efficiency

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?

Efficiency of cleaning and maintaining operations can be determined by checking the log records maintained for cleaning operation by the contractor and municipality workers. These would have details of activities carried out and the resources utilized for each of them.

For each of these services (be it cleaning and maintaining garden or emptying out bins or mobile messaging system), the cost drivers can be identified, and certain metrics can be developed for analysis. For example, cost of cleaning per square meter of garden can be computed or cost of emptying each bin can be computed or cost to respond each call.

While analysing these activities, certain operational considerations have to be given. For example, certain stretches or corners of the garden (where landscaping structure is complex) may take more time or resources to clean. Cost of emptying and re-clean the bin used for dry and wet waste may be different. Therefore, if resources for operations are disproportionate for certain parts of the gardens, then multiple categories of garden shall be formed and cost for each category need to be worked out. But data to get this information will depend on the extent of details 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. Frequency and area of the campus regarding which complaints are frequent or maximum? Reasons for these lapses need to be taken from the contractor (for cleaning the garden) and the concerned Nagar Nigam workers (for emptying bins) in order to find out whether resources are being employed properly.

Effectiveness

As mentioned earlier that effectiveness of cleaning and maintaining operations would focus on how the actual cleanliness of garden area inside the campus compares with the desired level as laid out when budget was allocated. To assess whether performance has been met, the target.

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 dry leaf (falling from tree) lying on garden floor. However, it is possible to pick up every plastic bag or bottle or empty soft drink can. Hence, the government authorities must be clear on what constitutes litter? and tolerance level for each type of litter e.g., tolerance level of aluminum can and dry leaves will be different, because few of dry leaf may 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. 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 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”. The measure for can be how many mobile messages are responded within the time-cap of 12 hours. Other inputs could also be the suggestions given by the patrons about the ways to improve cleanliness.

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

(i) Challenges Involved in assessment of effectiveness would be:

- Defining what constitutes litter? These are subjective guidelines, the perception of which may differ from person to person. One can consider dry leaves that have been fallen from trees as litter other may not.
- Establishing the tolerance level of waste (litter) or acceptable level of cleanliness? High amount of subjectivity is also involved in determination of level.
- Frequency of cleaning and when to measure the effectiveness, it is obvious the cleanliness will not be at same level throughout the day.
- Certain forms of litter out of operational control such as animals' or birds' dropping, are they also considered as part of litter or ignored when effectiveness is measured. Basically, what matrix of desired objective contain is critical to determine the level of effectiveness.

- Indicator of effectiveness- 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.

The outcome of the audits can indicate achievement of any or none of the three parameters of economy, efficiency and effectiveness of cleaning and maintaining (of the garden area in-side the campus of Taj-Mahal) operations. To form an integrated conclusion based on the different outcomes of individual audits, the audit team may consider the following guidelines:

- Has the objective of the cleaning operation been achieved as per the guidelines in the relevant policy or white paper (based upon which budget is allocated)?
i.e., have the operations been effective?
- 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?

- If the answer to (a) is no, the operation has not been effective, then next question is the difference from the target is 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 local government has to look at alternate solutions of tackling the problem. These could include imposing heavy penalty for littering, requesting for additional 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.



Performance Pyramid

The Performance Pyramid also known as Strategic Measurement and Reporting Technique by Cross and Lynch 1991. They viewed businesses as performance pyramids. The attractiveness of this framework is that it links the business strategy with day-to-day operations.

- ❖ Linkage of Business strategy with day-to-day operation.
- ❖ The Performance measurement tool
- ❖ Success of Proposal is linked with external (Market), Internal efficiency
- ❖ The marketing success of Proposal is associated with achievement of customer satisfaction (out time, quality, delivery)
- ❖ The Financial success of the Proposal is linked to the achievement of High Productivity (Low wastage, Low Cycle Time)
- ❖ All these support with Quantity data.



In the above pictorial presentation:

- ‘Objectives’ are shown from top to bottom.
- ‘Measures’ are from bottom to the top.
- At the top is the organization’s corporate vision through which long term success and competitive advantages are described.
- The ‘business level’ focuses on achievements of organization’s CSF in terms of market and financial measures.
- The marketing and financial success of a proposal is the initial focus for the achievement of corporate vision.
- The above business is linked to achieving customers satisfaction, increase in flexibility and high productivity.
- The above driving forces can be monitored using the operating forces of the organization.
- The left-hand side of the pyramid contains external forces which are ‘non-financial’.
- On the other hand, the right-hand side of the pyramid contains internal efficiency which are predominantly ‘financial’ in nature.



CASE STUDY No:- 25

Case study No:- 21- PERFORMANCE PYRAMID as per regular Book

You are a paid assistant working in SBC LLP – an accounts consultancy firm. You have received the following email from one of SBC’s senior partner:

To: DG

From: SB

Date: 22/06/20XX

Subject: PEL meeting this afternoon

As you are probably aware, we are meeting with the managers of PEL later this afternoon to discuss several key issues, and I need you to do some research for me. I need a report that covers the following:

Analysis of the new proposal for the period 2015 to 2017 based on

- external effectiveness and
- internal efficiency

To help you with this, I’ve attached a copy of our forecast of PEL’s financial and non-financial data for

the period 2015 to 2017. Please read it carefully and email me back as soon as possible so I have time to prepare before the meeting.

Thanks

SB

-----**Attachment**-----

Background to PEL

Precision Engineering Ltd (PEL) specializes in engineering design and manufacture in the automotive and motorsport industry. PEL's design team has many years' experience

in the design and development of engine components for the market and high-performance engines. PEL has identified a number of key competitors and intends to emphasize on close co-operation with its customers in providing products to meet their specific engineering design and quality requirements.

Efforts will be made to improve the effectiveness of all aspects of the cycle, from product design to after-sales service to customers. This will require data from a number of departments in the achievement of the specific goals of the new proposal. Efforts will be made to improve productivity in conjunction with increased flexibility of methods.

Forecast of PEL's Financial and Non-Financial Data

Particulars	2015	2016	2017
Total Market Size (₹lacs)	110	115	120
PEL Sales (₹lacs)	18	21	23
PEL Total Costs (₹lacs)	14.10	12.72	12.55
Production Achieving Design Quality Standards	95.5%	98.0%	98.5%
Returns from Customers (% of Deliveries)	2.0%	1.0%	0.5%
Cost of After-Sales Service (₹lacs)	1.3	1.1	1.0
Sales Meeting Planned Delivery Dates	85%	90%	95%
Average Cycle Time (Customer Enquiry to Delivery) (weeks)	5.0	4.5	4.0
Components Scrapped in Production (%)	6.5%	4.0%	1.5%
Idle Machine Capacity (%)	9%	5%	1%

Required:

Draft the email as requested by the partner.

Solution: -Please find below my analysis of the points you wished me to examine for PEL. Please let me know if you wish to discuss any of these points in more detail.

Kind regards,

- **External Effectiveness**-The marketing success of the proposal is associated with the achievement of customer satisfaction's success will need an efficient business operating system for all aspects of the cycle form product design to after-sales service to customers. Customer's satisfaction is linked with improved quality and delivery.
- Quantitative measures of these factors are as follows:-
- Quality is expected to improve. The percentage of production achieving design quality standard is expected to increase from 95.5% to 98.5% between 2017 and 2019. In the same period, returns from customers for replacement of rectification should drop from 2% to 0.5% and the cost of after sales service should drop from ₹ 1.3 lacs to ₹ 1.0 lacs.
- Delivery efficiency improvement that is expected may be measured in terms of the rise in the percentage of goods achieving the planned delivery date. This percentage rises from 85% in 2017 to 95% 2019.

- **Internal Efficiency** – The financial success of the proposal is linked to the achievement of high productivity. This should be helped through reduced cycle time and decreased levels of waste.
- Quantitative measures of these factors are as follows: -
- The average total cycle time from customer enquiry to delivery should drop from 5 weeks in 2017 to 4 weeks in 2019.
- Waste in the form of idle machine capacity is expected to drop from 9% to 1% between 2019 and 2019. Also, component production scrap is expected to drop from 6.5% in 2019 to 1.5% in 2019.



CASE STUDY No: -26

Case SCENARIO No:- 22: - Case study Digest Performance Pyramid as per regular Book

'Digital Computers' is a manufacturer and wholesale dealer of electronic goods. In the initial years, the company was performing excellent and was improving year after year. However, from past three years, the performance of the company is towards decreasing trend. In a report, the sales manager stated that sales had been disappointing, and company's sale has gone down drastically. However, the sales manager pointed out that some orders had been lost because the production department had been unable or unwilling to adapt product specifications to the requirements of the customer. Also, one of company's larger customers had returned goods which it claimed did not meet its requirements, and the customer has subsequently not placed any further orders with Digital Computers. In addition, a delay in the completion of another large order meant that some revenue originally budgeted for this year would not now be earned until next year. The employees and managers are not motivated to perform at their best nor are the cycle time and waste at production department monitored.

Summary of Annual performance figure

Particulars	₹in Lacs		
	Actual (CY)	Budgeted (CY)	Actual (PY)
Sales	605	640	603
Less: Cost of Sales	343	365	341
Gross Profit	262	275	262
Less: Other Costs	173	183	175
Net Profit before tax	89	92	87

The CEO believed that company's performance measures needed to link operations to strategic goals more closely, and they needed to focus on non-financial as well as financial measures. The CEO has suggested that Digital Computers should use a structure for setting targets based on the concept of the performance pyramid and should not focus only on financial performance.

Required

- I. LIST how the system of performance measurement within Digital Computers could be improved?
- II. ASSESS how the implementation of a performance pyramid might help Digital Computers achieve its stated objectives for sales and profit growth.

Solution:

- (i) The performance reporting system of Digital Computers appears to have focus exclusively only on financial performance and does not provide information about effectiveness and

efficiency issues which may be affecting the company's performance. Digital Computers can improve its performance by establishing a range of operational measures which should include both financial and non-financial performance targets.

Some of the key pointers which can improve the performance measure at Digital Computers:

- Be allied to corporate strategy, which needs to be linked to day-to-day operations of Digital computers.
- Focus on customer satisfaction which is of foremost importance as orders have been rejected as it did not meet the requirement of customers, hence increase in flexibility needs to be adopted.
- Consider internal as well as external measures in the company i.e., internal such as waste and cycle time can be monitored at production department as well external measures like customer's requirement can be assessed.
- Make explicit the trade-offs between different dimensions of performance i.e. in order to increase performance on non-financial performance dimension it has to decrease performance on the financial dimension.
- Consider all important factors to assess the performance whether difficult to measure.
- It appears that 'Digital Computers' is having poor communication and information sharing between departments. Therefore, having an integrated communication system across the organization is recommended.

(ii) **Establishing corporate level objectives** – Establishing a performance pyramid structure should begin with the overall corporate objective or corporate vision. In Digital Computer, there may be the objective of increasing profit by a fixed percentage each year and increasing market share. The overall objective should then be used to establish targets at the next level down in the performance hierarchy.

Strategic business unit objectives – At the business strategy level, performance targets should then be created for both internal efficiency which includes financial targets and external effectiveness which includes marketing targets. The financial and marketing targets should be consistent with each other.

External effectiveness – The marketing success is associated with the achievement of customer satisfaction. The success will need an efficient business operating system for all aspects of the cycle from product design to after sales service to customers. Customer satisfaction is linked with improved quality as well as focus on delivery of goods provided as per customer specifications.

Internal efficiency – The financial success is linked to the achievement of high productivity. This can be gained through reduced cycle time and decreased levels of waste. Quantitative measures of these factors are:

- The average total cycle time from customer enquiry to delivery.
- Waste in the form of idle machine capacity.

Setting targets– Targets should be identified for productivity, customer satisfaction and flexibility. Targets for flexibility may be qualitative in nature, relating to Digital Computer's ability to adapt product specifications to customer requirements. Targets for measuring customer satisfaction may include targets for reducing the volume of customer returns. For instance, specific quality targets may help Digital Computers to reduce the volume of customer returns. Targets for cycle time and delivery may help the company to complete customer orders more quickly, thereby increasing the amount of order it can complete in a year and hence achieving its sales target and thereby its profit.



(Summary)

ENVIRONMENT (Planet) ↓	SOCIAL (People) ↓	ECONOMICAL (Project) ↓
Material, Water energy, Fuel, Land consumption Disposal of Waste	Training/education provided to employee Human Right Practices - (No Child labour appointed)	Whether Company Paying their tax on Regular basis.
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.	

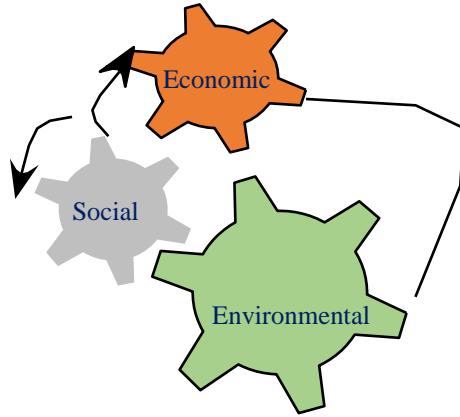
Triple Bottom Line (TBL)

TBL expands traditional accountancy reporting systems, looking at *social* and *environmental performance*, rather than simply financial performance. This can be used to help encourage each division and manager within the organisation to act in a socially responsible manner. TBL incorporates the three dimensions-

- **Environmental**-measures the impact on resources, such as air, water, ground and waste emissions (Baumgartner & Ebner, 2010,p.79).
- **Social**-relates to corporate governance, motivation, incentives, health and safety, human capital development, human rights and ethical behavior.
- **Economic**- refers to measures maintaining or improving the company's success

The requirement to link financial and non-financial measures of performance and to identify key performance measures provided the impetus for

- Kaplan and Norton's 'Balanced Scorecard'
- Cross and Lynch's 'The Performance Pyramid'
- Fitzgerald and Moon's 'Building Block Model'
- Andy Neely and Chris Adams's 'The Performance Prism'



CSF & KPI AS DRIVERS OF STRATEGIC OBJECTIVES

As mentioned earlier in this chapter, that third phase of performance management includes the establishment of the performance measures (both financial and non-financial) and target for each measure, hence mere selecting the measures will not solve the purpose; the scope of measure is also of utmost importance.

The performance measures shall target/encompasses the areas (process or part of the process); which are vital for the attainment of strategic objectives is essential. These areas are known as **Critical Success Factors (CSFs)**. Even it is advisable for organizations to start establishing measures related to these areas and keep them in central focus thereafter too.

The fourth and last phase of performance management includes the review the performance (with help of KPI Dashboard) and take corrective actions (if required), hence mere identification of CSFs and establishing the targets will not enough. An effective review system must be in order which comprises **Key Performance Indicators (KPIs)** on a single and handy dashboard to indicate the performance in real-time basis.

Note- It is quite a clear from the above discussion that CSFs and KPI are not one and the same thing but related to each other. The CSFs are the areas that are critical for the attainment of corporate objectives, whereas KPIs are signals of performance in such areas.

For **example**, for an IT Department, a Critical Success Factor could be restoring normal service and in order to achieve that, a logical KPI would be the Average Turnaround Time, with a target of 4 hours. The Average Turnaround Time and its target of 4 hours is the KPI that represents 'how' the IT department achieved its Critical Success Factor.

CSFs are a true source of Competitive Advantage

If any organisation able to use its core competencies to exploit the CSFs, it will surely have an edge over rivals, which will position the organisation in a better strategic position; leads to competitive advantages. John F Rockart in his paper 'Chief executives define their own data needs' in March 1979 issue of Harvard Business Review highlighted how the attainment of the corporate objective is supported by CSFs irrespective of nature of organisation (be it for profit or not for profit) . In the same piece of his work, Rockart also highlighted the four prime sources of CSFs:

- Structure of particular Industry
- Competitive Strategy, industry position, and geographical location
- Environmental Factors
- Temporary Influences

Apart from four aspects highlighted by Rockart, another important point is the functional area of manager who is identifying the CSFs, because a priority of purchase manager can't be the same as of a personal manager. To overcome this, CSFs need to be identified; organisation-wide.

Relation between CSFs, KPIs, and Corporate Objectives

Ideally, each CSF should have a KPI associated with it. A single CSF can also have more than one KPI if required. The KPI targets are more formally called thresholds, and the thresholds must be ascertained with a great deal of industry analysis, as well as internal analysis. KPIs shall be SMART (specific, measurable, attainable, relevant, and time-bound).

Effective performance management system warrants that,

- KPIs must be selected and designed in such a manner that if meets the threshold then deliver the CSFs and
- The CSFs, in turn, must be designed and constructed in a way that ensures that the company's strategic vision is delivered if the CSFs are met.



Concept Insight

SMART Objective

Even objectives of organization also need to be SMART. George T. Doran first used this term in the November 1981 issue of Management Review, but the attribute of MBO (management by objective) by Peter F Drucker inspired the origin of SMART.

Specific → should be clearly defined

Measurable → have means to quantify
Achievable → can be achieved i.e., should be realistic,
Relevant → Relevant to the organization strategic goals;
Time Constrained → have designed start and end dates.

The terms—goals or objectives are often used interchangeably, although one key difference is that it should always be possible to quantify an objective. Goal conversely, can be not be quantified and are therefore open ended.

(Summary)

ENVIRONMENT (Planet)	SOCIAL (People)	ECONOMICAL (Project)
Material, Water energy, Fuel, Land consumption Disposal of Waste	Training/education provided to employee Human Right Practices	Whether Company Paying their tax on Regular basis.

	- (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.	

Triple Bottom Line (TBL)

British business author John Brett Elkington in year 1994 coined the term TBL. But the origin of concept actually lies in Brundtland report by World Commission on Environment and Development, (now known as Brundtland Commission) published in year 1987, in which **Sustainable Development** is explained as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

It is also important here to note that United Nations Conference on Environment and Development taken place in year 1992, gave stress on sustainable development.

As mentioned earlier in this chapter that **every business needs to be sustainable rather than only profitable**. But question which comes to mind is → when a business said to be sustainable? Obviously, answer is when management make sustainable business decisions. Hence real question is → *When a business decisions aid to be sustainable? How to measure performance of business decision in term of sustainability?*

Answer lies in TBL i.e., **Triple Bottom Line**.

To measure performance of business decision in economic terms we consider only one bottom line i.e., profit, but to consider sustainability of business decision there are three bottom lines i.e. **People, Planet and Profit** (also known as dimensions of TBL).



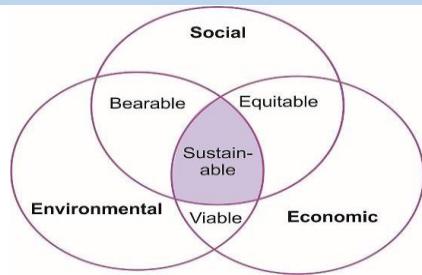
TBL truly extends the scope of traditional accountancy, to transform it into modern day **sustainability reporting** (which is beyond financial reporting because it considers social and environmental performance too). Some organisations even have separate business sustainability reporting system and they apply the standard of sustainability reporting pronounced by **Global Reporting Initiative**, which is the independent, international organization that helps businesses and other organizations take responsibility for their impacts, by providing them with the global common framework (standards) to report those impacts.

Dimension (sets) of TBL

Planet, the environmental bottom line measures the impact on resources, such as air, water, ground and emissions to determine the environment impact and ecological footprints.

People, the social equity bottom line relates to corporate governance, motivation, incentives, health and safety, human capital development, human rights and ethical behavior.

Profit, the economic bottom line refers to measures maintaining or improving the company's success in term of adding value to share holders.



A sustainable decision is one which acceptable from the aspect of each bottom line as shown in the table below-

Planet	People	Profit	Performance of Sub-set
Acceptable	Acceptable	Not acceptable	Bearable
Not acceptable	Acceptable	Acceptable	Equitable
Acceptable	Not acceptable	Acceptable	Viable
Acceptable	Acceptable	Acceptable	Sustainable

TBL believes in a *stakeholder approach* rather shareholder approach. TBL implies that businesses must consider the full cost, hence become a substitute to **full cost accounting** with even wider perspective.

TBL can be used to encourage each division and manager within the organisation to act in a responsible manner from holistic perspective.

Test Your Understanding

Can you identify the businesses falling in each sub-set – Bearable, Equitable and Viable?

Hint

A business dealing in a plastic bag (mind it, use of less than 35-micron plastic bag are prohibited now) may be equitable business but not sustainable because of harm to the environment. One can take the example of cracker manufacturing business as well.

Similarly, Tabaco business is viable only business but not sustainable.

Example

S Ltd. has recently undertaken following initiatives towards sustainability, they can be reported under relevant dimension—

Activity	Bottom Line
Reduced the amount of plastic usage in peanut butter jars.	Planet
Constructed solar powered warehouse.	Planet
Provided financial support to the hospital run by the local authority in the vicinity of the factory.	People
Started childcare unit for the benefit of women employees as well as for the neighboring community.	People
Generated profit for the company's shareholders.	Profit

The triple bottom line recognize that a company's performance should not only be viewed in terms of its ability to generate economic profits for its owners, but also by its impact on people and the planet for its long term economic and social viability.

Test Your Understanding

Can you tell the Pros of tools detailed above starting from balanced scorecard to TBL?

Hint

The tools explained above are capable to overcome the shortcomings of financial performance measures but don't ignore the financial aspect of the business. Indeed, they maintain a balance between financial and non-financial aspects to ensure the success of the corporate strategy. The benefits include—

- Balance between financial and non-financial performance measures.
- Regardless ease or difficulty to measure, include all significant factors.
- Capable to coordinate external as well as internal measures.
- Linked the measures with corporate strategy.
- Linked the motivation with performance.

The above hint is based upon research work from David Otley (2005) who observed a common thread between results and determinants framework by Fitzgerald (1991), the balanced scorecard by Kaplan and Norton (1992) and Neely's performance prism.



CASE STUDY No: - 27

CASE STUDY No:- 23: Triple Bottom Line (TBL) as per regular Book

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 wastes 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 wastes are not biodegradable.	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 reports are being made available online within the hospital computer system. This would reduce printing costs and storage space needed to	Environment bottom line, since paper, cartridge and storage requirement would be lower. This preserves environmental resources.

	maintain older records.	
(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: -28

CASE STUDY No: - 24: Traditional Accounting Framework vs. TBL Framework “PSL”. As per regular Book

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 skeptical 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 under pricing 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 frame work, 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 No: -29

CASE STUDY No:- 25 (CASE STUDY DIGEST) Tripple Bottom Line as per regular Book

Fashion industry prospered more than any other industry and it kept blooming with new trends being brought weekly and almost all being sold in no time. The NextGen clothing (NGC) into the fashion industry, situated in the outskirts of Deshipur, had several textile plants, nurturing the needs of the community. NGC had a good base of laborers and farmers, few of them aged under 14, from nearby locations enrolled into the program. They had no source of employment past the clothing plants. It gave boost to their living avenues with receptivity to all modern facilities of living. They worked overtime to get NGC to where it wanted to be.

The raw materials did not cost much to NGC, given the local availability and the cheap quality. The low financial cost and the low sale price it offered to its customers allowed it to churn out cotton and viscose fabricated clothes in humungous quantities. The citizens loved the artcrafts brought out by the designers and the cotton material pleased them.

NGC had no history of reporting sustainable efforts to build up a strong environment to work in. It reported phenomenally huge profits in past three years, paid out impressive dividends to its shareholders, bonuses and lucrative overtime pays to its laborers. All were happy and no one complained about the sustainability aspect, the duty it owes to its surroundings and the greater environment.

The community focused on the form rather than the substance of it. It kept overlooking the brutal effects of producing cotton and viscose in local farms which was the primary source of raw material for NGC. One day NGC learnt that a scholar born and brought up in Deshipur, studied in Northern America, returned to his hometown. He presented brain storming sessions to the civilized people which made them rethink on their clothing habits. His sessions were summarized below:

Cotton

First of all, the production of cotton involves enormous water usage, which is already a scarce resource globally. Just to manufacture cotton enough to make a t-shirt, involves using liters of water. Above those fertilizers and pesticides employed takes a toll on farmers' health. They become ill often than not. Not just the cotton producing process is environmentally non-tenable, it involved tons of water for spinning the cotton and dyeing the fabric to make the cloth. The chemical composed water then flows to the nearby rivers and hampers the life of water beings and people around.

Viscose

This is a semi synthetic matter derived directly from wood pulp and converted into cloth by application of chemicals and water. Most of the deforestation can be ascribed to the paper production and rayon production. The greedy merchants overlook even the protected areas to get the required pulp. The sprouting air pollution and water pollution has left community residents forsaken to cry over their fate. The use of harmful chemicals leads to diseases like cancer and heart strokes.

We, the Customers

The ridiculously low prices of the clothes with the advent of the internet have created a desperate demand of clothes and have led to surge in its buying frequency. Hardly few of us contemplate on how a t-shirt or jeans we are wearing was made, what processes they had to undergo before it took that shape and the extent of loss and injury it caused persistently.

In a nutshell, his sessions were about the ideas hinting at the destructive impacts on environment that NGC is bringing to their plate. They gave a patient listening to all his talks, well fabricated in their native language, free from any fictions.

The training sessions of the scholar, Raghu picked up many ears, it was all over the country and NGC started to perceive this as the verge of its downfall. NGC had to give a rethinking on the way clothes were made.

Required

RECOMMEND ways to bring a turnaround in the reporting framework and go extra miles to do something "sustainable" for the environment.

Solution:

Sustainability is a wider phenomenon in itself and cannot be narrowed to just the environment and its people. Ensuring sustainability in a profound context means not just to make the present secure but also considering the needs of the future for the resources. This can be done when there is well blend of demand and supply of such resources.

As per the triple bottom line approach, in the context of fashion, sustainability is interpreted as using environmentally ethical means of producing wearables like clothes, footwears, and other apparels. This approach considers the challenges that a production process brings to the people and the planet even if of less intensity to the firm itself, in the short run. The triple bottom line counts in the advantage of the greater stake holders rather than the traditional shareholders as noted down from a traditional reporting policy.

Therefore, a sustainable fashion is an undertaking to consider the implications of triple bottom line pillars (i.e., environment or planet, the people, and the profitability of the firm) when producing consumables. This holistic approach looks beyond just the term fashion and does what is to be done to put in place an ecological balance.

Once we understand the term sustainability, we now catalog some of the sustainable efforts that are recommended in the situation of NGC and they are:

Producing quality materials

Nowadays firms are resorting to producing cheap materials that cost them less to produce and sell. Bearing the come and go fashion in mind, their produces have less longevity and are more representative of use and throw stuffs. Given the environmental boost, NGC should use materials that guarantee longer lasting textiles, thought fully designed and priced. This will plunge the need to buy the clothes so often and will enhance the clothing experience of the masses. The highly priced material will lower the demand and keep at bay its accessibility to all. From a short-term perspective, this may sound a financial hit which in the long term will prove a reputational boost to the firm, given the drastic change in quality it adapts to.

Spreading awareness among the customers

Though many expectations are just around the firms engaged in textile production and sale thereof, the customers are no less responsible in turning down the clothes and discarding them in less environmentally amicable manner. They do not discard the clothes in the right time and at right place, rendering the clothes unsuitable for reuse. The thrift stores and donation center are propelled to throw such unfit clothes. As per reports, only established donation centers or processing centers are able to sell over whelming quantities of second hand clothing and foot wears. So, there is a strong relation between the conscious buying choice of the customers and the sustainability in the fashion industry. With less numbers of purchases of good quality pieces, they can support sustainability.

Using organic materials and addressing safety issues

Triple bottom line suggests that reducing financial expense at the cost of health of its people can cost unimaginative money to the firm in the long run. A firm cannot be seen in isolation to its people who work for its interest and the local residents that live around. As indicated from the facts above, we are aware that producing cotton and viscose involved usage of enormous pesticides and fertilizers that ultimately impaired the health of the farmers and other people involved. They end up having life threatening diseases like cancer and heart strokes. Organic material does not necessarily eliminate the application of pesticides and other toxic materials; however, it will reduce its usage to an acceptably low level. Though restoring to organic materials would not lead to reversal of harmful effects that occur once the cotton is harvested, it will present considerable relief to the health of its people. The adversity occurring by way of colossal

use of water to produce organic cotton as compared to the ordinary cotton has to be kept in mind though. This aspect will risk the sustainability of the water for the future generation, an already scarce resource for the present as well.

Moreover, selling the produce for cheap prices, will mean an adjustment to the wages of the laborers and farmers they receive for their hard work. Historically we have seen that firms with an attempt to practice price competition, try to cut down their production cost by compromising the quality of machines they use, providing below standard working environment to their workers, undue firing of skilled people. All of these presents an ongoing challenge to the well being of those people such that they are forced to ekeout their living.

Channelizing efforts towards recycling

NGC can introduce innovative recycling channels to ensure that customers are enticed to turnover the used clothes rather than throwing them away. Having a recycling collector at its store with a catchy slogan like 20% discount on fresh stocks for the used clothes, can help. This effort directs people to resort to reusing their old stuffs so that the land fill pressure reduces thereby reducing the emission of carbon gases in the environment. Few firms collect their own products, and after working on them, are sold below normal prices.

Alternatively, NGC can seek the services of third party that can help them buying second hand clothes and sorting those based on their quality and resale the ones suitable for use and get others to the recycling process. Such unsold clothes left over can be used as raw materials by carpet manufacturer so rather textile manufacturers.

Compliance to local labor laws

The true cost of any firm is not just the perceivable financial cost that is reported in its annual publications, it also comprises of the non-financial cost not counted in the context of financial reports. As mentioned above, the low quality of machines can cause myriad accidents at NGC's plant thereby putting it into legal liabilities which is although a financial cost for the firm but will prove to be reputational risk in the long run, a non-financial cost.

Ethical manufacturing also means complying by the local laws of the country pertaining to usage of labor. We see that NGC are pulling in children of age below 14 years to get their job done. Rather than defending the rights of its workers, it puts an imminent risk to the local kids. It is against the local labor laws to hire child labor and provoke them to work when it is their right to receive educational and nutritional support at this age.

Producing Poly clothes

We see the most expensive sports wear made out of recycled polyester materials, which comes as no surprise. Thanks to the ethically aware multinational firms. It is suggested that NGC should direct its effort in reducing the negativity of plastic remnants brought into the cycle. The plastic materials like ketchup bottles, pickle and oil containers are processed to a liquid consistency which is then turned into reusable fabrics. The demand for cotton clothes is surging globally and polyester made clothes appears to bring as witch over. Polyclothes have less ecological impacts compared to cotton and are easily recyclable; and consume less water.

Reducing the usage of water consumption

As evidenced from the facts, each cloth made to wear consumes liters of water. This usage of water can be controlled by manufacturing as per the just in time approach rather than churning out humungous quantities. This will allow controlled production of raw material on need basis and in turn the limited manufacture of the clothes. NGC can adapt the policy of taking customized order made to manufacture what is ordered for. This will also ensure limited flow of hazardous chemically composed water to the near by rivers, thus managing the risk of commoners' lives.

Overall

Considering the above approaches, it is perceived that NGC can bring as significant positivity to its environment. Being a socially responsible part of the community, it owes a duty to its surrounding and not just to its capital providers. Hence it is also recommended that it should hire an expert who can assist it in presentation and preparation of sustainability report (or reporting as per the triple bottom line framework). This report satisfies the informational needs of the larger stakeholders i.e., the government, regulatory authorities, employees, local residents and community, and the customers and suppliers.

Once NGC implements some of the suggested sustainable approach to manufacturing clothes, those policies and efforts can be reported in the triple bottom line framework reporting. This will provide a reputational advantage and also a competitive edge over its competitors in the industry which will bring in financial gains.



Performance Prism

Performance Prism

The Performance Prism is an approach to performance management which aims to effectively meet the needs and requirements of all stakeholders. This is in contrast with the performance pyramid which tends to concentrate on customers and shareholders and is also in contrast with value-based management, which prioritizes the needs of shareholders.

Stakeholders Satisfaction: The organization needs to focus on who are the stakeholders? What are the needs and wants of the stakeholders.

Strategies: What are the strategies required by the organization to fulfill the wants and needs of the stakeholders?

Processes: What are the necessary processes required for satisfying the above strategies?

Capabilities: What capabilities does the organization needs for operating and enhancing the process?

Stakeholders Contributions: It further takes into account what contribution does the management needs from its stakeholders?



Comprehensiveness of Performance Prism

Performance Prism creators Andy Neely and Chris Adams mentioned that the better-known Balanced Scorecard framework only focuses on two sets of stakeholders: shareholders and customers. The Performance Prism is an approach to performance management which aims to effectively meet the needs and requirements of all stakeholders.

This is in contrast with the performance pyramid which tends to concentrate on customers and shareholders and is also in contrast with value-based management, which prioritizes the needs of shareholders.

- It takes stakeholder requirements as the start point for the development of performance measures rather than the strategy of the organisation.
- It recognises the need to work with stakeholders to ensure that their needs are met.

There are five ‘facets’ to the Performance Prism which lead to key questions for strategy formulation and measurement design:

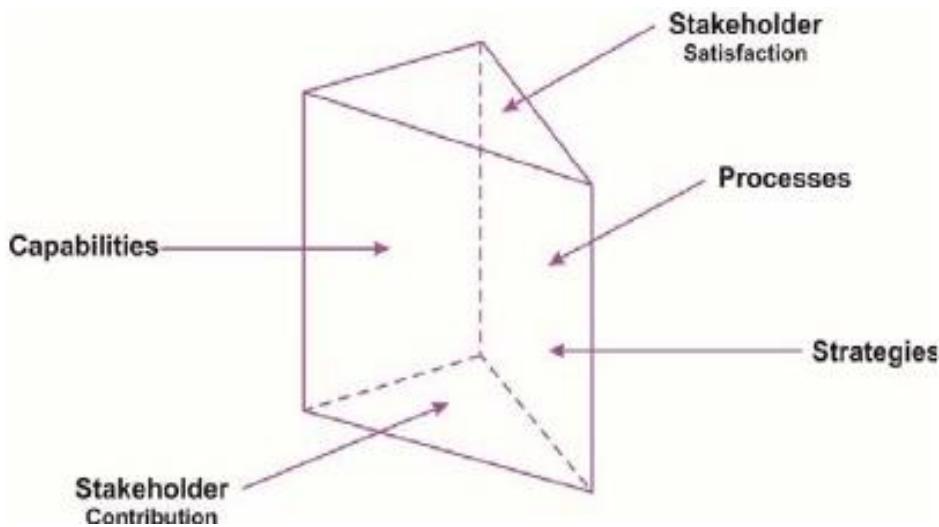
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Capabilities: What capabilities does the organization needs for operating and enhancing the process?

Stakeholders Contributions: It further takes into account what contribution does the management needs from its stakeholders?



The Performance Prism allows organisations to develop strategies, business processes and measures geared to the specific needs of all important stakeholder groups. By taking a broad stakeholder perspective that includes regulators and business communities, the PP enables an organisation to more directly address the risks and opportunities in its business environment. Using the PP to develop measures for each relevant stakeholder facilitates the communication and implementation of strategy.

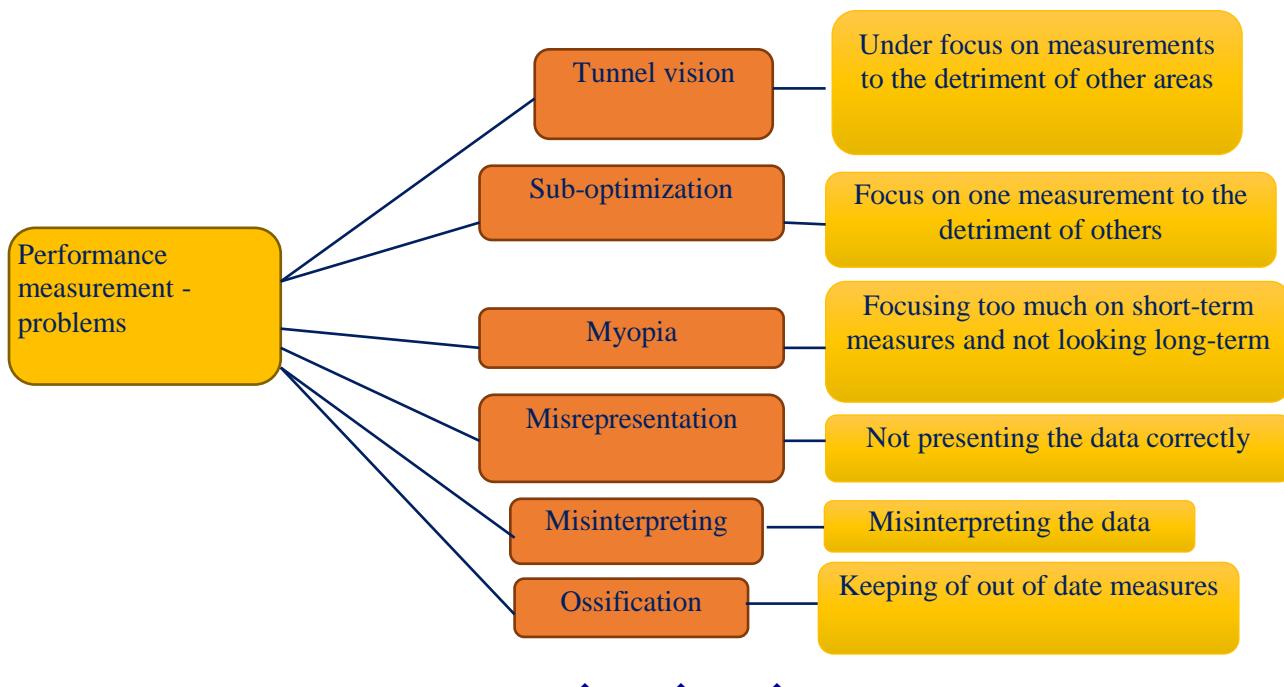
Performance Measures – Benefits

The following benefits can be derived from the use of performance measures:

- Develops agreed measures of activity.
- Clarifies the objectives of the organization.
- Greater understanding of process.
- Helps facilitate comparison between divisions.
- Promotes accountability to stakeholder.
- Helps in setting of targets for managers.
- Helps facilitate comparison between different organizations
-

Performance Measures – Problems

Problems that may develop from the use of performance measures by an organization are as follows:



CASE STUDY No:- 30

CASE STUDY No: - 26 : PERFORMANCE PRISM as per regular Book

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 maximize 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.



CASE STUDY No: -31

CASE STUDY No.:27(CASE STUDY DIGEST)as per regular Book

A preliminary investigation for the Vidyut Dam Project was completed in 1962 in a South- Asian country (here-in-after referred as country) and its design was completed in 1973 with a 600 MW capacity power plant. Construction began in 1979, but was delayed due to economic, environmental and social impacts. In year 1987, technical and financial assistance was provided by the neighboring country to said country after signing of MoU, but this was interrupted just a year later with political instability. Hence, said country was forced to take control of the project and at the first, it was placed under the direction of the irrigation department of concerned home state of said country. However, in July 1989 the Vidyut Hydro Development Corporation

Limited (VHDCL) was formed to manage 1,900 MW Vidyut Hydro Power Complex; wherein 75% stake held by union government and remaining 25% stake by concerned home state government. The 1,900 MW Vidyut Hydro Power Complex comprises of Vidyut Dam & 1,000 MW Vidyut Hydro Power Plant (250MW×4), Beejuree HEP (400 MW), and Vidyut PSP (500 MW).

The Vidyut Dam is a 260.61 m (855 ft) multi-purpose high rock and earth-fill embankment dam on the Karaka River near Chapala town. Its length is 574.85 m (1,886 ft), crest width 20.11 m (66 ft), and base width 1,128.06 m (3,701 ft). The dam creates a reservoir of 4.0 cubic kilometers (~ 32,00,000-acre ft).

The 1,000 MW Vidyut Hydro Power Plant (Vidyut HPP) was commissioned in 2007-08 as a multipurpose project, with variable speed features which can optimize the round-trip efficiency under varying water levels in its reservoirs. Power is distributed to 10 northern states (including concerned home state) of said country. The complex will afford irrigation to an area of 2,71,139 hectares (=6,70,000 acres), irrigation stabilization to an area of 6,07,028 hectares (=15,00,000 acres), and a supply of 270 million imperial gallons (1.23×10^6 m³) of drinking water per day. 162 million gallons of drinking water for around 4 million people of the neighboring state, apart from 108 million gallons of drinking water for around 3 million people of the concerned home state. Due to regulated releases from the Vidyut storage reservoir, the existing downstream hydro projects are also benefited by way of augmentation in generation at no additional cost to them. Concerned home state also gets 15% of generated power as free. The total expenditure for this project was USD 1 billion. Since 2007-08, which was the first year of operation, VHDCL has been a profit-making company.

The Vidyut Dam has been the object of protests by environmental organizations and local people of the region. The protest was against the displacement of town inhabitants and environmental consequences of the weak ecosystem. "We don't want the dam. The dam is the mountain's end" was the prominent slogan.

The relocation of nearly 1.5 lakh people or may be even more, from the area has led to protracted legal battles over resettlement rights and, ultimately, resulted in the project's delayed completion despite the fact that land acquisition was started in 1980. There is no master plan for rehabilitation nor even a clear estimate of the number of people affected. According to the 2003 status report of the public work department of Chapala town, the Dam replaced 15,550 families. This estimate excludes a large number of people who lost their lands but have not been officially recognised as project affected. Among those officially recognised, allotted with land of poor quality or with multiple ownership claims.

Near to year 2006, while filling of the reservoir has led to the reduced flow of Karaka River's water from the normal 1,000 cu ft/s (28 m³/s) to a mere 220 cu ft/s (6.3 m³/s). This reduction has been central to local protest against the dam, since the Karaka River is considered sacred river, whose waters are crucial to religious beliefs.

Old Chapala town shifted and named as New Chapala Town (NCT) which is semi-ultra-modern hill station at height of 1,555-1,855 m above MSL, with better road network and district head quarter (shifted to NCT, earlier about 65 kms away from Chapala). NCT equipped with better health (got 80 bed modern hospital against 25 bed hospital in old Chapala, and also got 5 primary health centres with additional 75 bed facility in total) and education facilities (hostel facility of 900 students, degree college with university campus which can accommodate 440 residential students and faculties, and against 1 inter college in old Chapala, 5 inter-college established (one in NCT and 4 in nearby villages). This all done at project cost.

In addition to the human rights concerns, the project has spurred concerns about the environmental consequences of locating such a large dam in the fragile ecosystem of the foothills

of great mountain range. There are further concerns regarding the dam's geological stability. The Vidyut dam is in a major geologic fault zone. This region was the site of a 6.7 magnitude earthquake in September 1992, with an epicenter 55 km (34 mi) from the dam. Dam proponents claim that the complex is designed to withstand an earthquake of 8.4 magnitude, but some seismologists say that earthquakes with a magnitude of 8.5 or more could occur in this region. Were such a catastrophe to occur, the potentially resulting dam-break would submerge numerous towns downstream, whose populations total near half a million.

In spite of concerns and protestation, operation of the Vidyut Dam continues and is completed. But VHDCL was aware of these and tried to respond in a constructive way. The spirit of CSR initiative is depicted by its CSR initiative title 'VHDC Sahridaya' (Corporate with a Human heart), wherein focus areas are:

- Shiksha - Education Development
- Svasth - Nutritional Health and Sanitation and Drinking Water Projects
- Nipun - Livelihood Generation and Skill Development Initiatives
- Unnaati - Rural & Infrastructure Development
- Yogy - Empowerment Initiatives
- Srrishti - Environment Protection Initiatives

Out of these 'VHDC Srrishti' has some special mentions, 'Environment Focused Initiatives' is working with three objectives Soil & Water Conservation, Green Energy Generation & Technology Promotions and Environment Protection & Promotion.

To conserve soil and water VHDCL is working on water harvesting and water harvesting tanks (capacity 3,000 liters each) were installed in the project affected villages for rainwater harvesting. Through this activity, beneficiaries were able to store almost 9 lakh liters of rainwater during monsoon. In addition, VHDCL under this program installed more than 730 LED based Solar Street Lights and more than 180 LED based Solar High Mast Lights in near- by towns and villages in year 2019-20. Moreover, to promote plantation of different fruit, fodder, and medicinal plants, VHDCL planted 2,70,202 plants/sampling till now.

VHDCL has won many awards in last decade in different categories including CSR domain, but most recent and relevant (for case study) among them are→

- HR Platinum Award for Training Excellence in 2019-20
- National CSR Leadership Award 2020
- CSR Innovation and Leadership Award 2020
- It not only recognition in term of awards, VHDCL has obtained following Certifications:
- ISO 9001:2015 Certification (Quality Management System).
- ISO 14001:2015 Certification (Environment Management System).
- OHSAS 18001:2007 Certification (Occupational Health and Safety Management System).

Required

As part of policy initiative, if VHDCL is willing to implement the Triple Bottom Line (TBL) reporting initiative; then ADVISE the management regarding dimensions of TBL, and what are perspectives composed by different dimensions of TBL. Also, enumerate the challenges, expected benefits, and initiatives under each dimension in context of Vidyut Dam & Vidyut Hydroelectric Power Plant (1,000 MW).

Solution:

British business author John Brett Elkington in year 1994 coined the term TBL. Every business needs to be sustainable, rather than only profitable. A business is said to be sustainable, when management makes sustainable business decisions. To consider sustainability of business decision there are three bottom lines i.e. People, Planet and Profit (also known as dimensions of TBL), instead of single bottom line (i.e., Profit).

Here-in VHDCL, shows strong commitment for CSR through the certification (regarding quality, environment and safety) they obtained and also through the awards they won (in the domain of CSR and Training).

Dimensions (sets) of TBL

(i) People, the social equity bottom line relates to corporate governance, motivation, incentives, health and safety, human capital development, human rights and ethical behavior.

The project has major concerns about the displacement of town inhabitants, followed by reduction inflow of Karaka River from the normal 1,000 cuft/s (28m³/s) to a mere 220cuft/s (6.3 m³/s). Former concern is more significant than the later concern, because later was of short duration; it is obvious when the reservoir is filled to its maximum capacity, the flow of the river will again become normal. Regarding the displacement, it is mentioned in the case itself that according to the 2003 status report of the public work department, the Dam replaced 15,550 families. Further, this estimate excludes a large number of people who lost their lands but have not been officially recognized as project affected. Even those officially recognized, allotted with land of poor quality or with multiple ownership claims. This concern substantiates in absence of a full-proof master plan.

It is not the case that local resident were/are in complete distress, they were/are compensated with alternative and better facilities and remedies as well that too at project cost, which includes the:

- Development of hill station to attraction for tourism – The New Chapala Town (NCT) is developed with semi-ultra-modern facility at height of 1,555-1,855 m above MSL as pre-planned hill station which will attract the tourist. By creation of lake due to the impoundment of the reservoir of Vidyut Dam, scope of water sports is there. Hotels, Guides and Tour and travels will cause employment opportunities for locals.
- Better road network leads to ease of living and improved communication channels which also help in establishing suitable industries according to environmental aspects.
- Shifting of district head quarter to NCT results in reduction of distance of travel by town residents to reach to district head quarter for any task by about 65 kms, hence life of locals will be further eased.
- Improved health facilities - NCT equipped with better health facilities. It got 80 bed modern hospital against a 25-bed hospital situated in old Chapala town. Apart from this also got 5 primary health centers with additional 75 bed in total.
- Improved Education facilities in term of hostel facility of 900 students and increase in number of inter-colleges.

Not only the local resident (directly affected), other too got benefit from project, such as 250 cusecs (~ 162milliongallonsper day) of water supply to neighboring state, which will meet drinking water need of around 4millionpeople, apart from 167 cusecs(~ 108 million gallons per day) of water supply to concerned home state, which will meet the drinking water need of around 3 million people. Power is also distributed to 10 northern states (including concerned

home state) of said country.

VHDCL showed social commitment through Shiksha, Svasth, Nipun, Unnaati, and Yogyas part of their CSR initiative.

(ii) Planet, the environmental bottom line measures the impact on resources, such as air, water, ground and emissions to determine the environmental impact and ecological footprints.

The project has spurred concerns about the environmental consequences of locating such a large dam in the fragile ecosystem of the foothills of great mountain range, which will result in weak ecosystem and concerns over a catastrophe to occur (due to earthquake- the potential dam-break). Regarding the later concern, it is also mentioned in the case that the Vidyut dam is in a major geologic fault zone. This region was the site of a 6.7 magnitude earthquake in September 1992, with an epicenter 55 km from the dam. In response to which the Dam proponents claim that the complex is designed to withstand an earthquake of 8.4 magnitude, but some seismologists say that earthquakes with a magnitude of 8.5 or more could occur in this region. Were such a catastrophe to occur, the potentially resulting dam-break would submerge numerous towns downstream, whose populations total near half a million.

The major environmental benefit is generation of 1,000 MW (3,532 MU of Annual Energy) of environment friendly peaking power.

In order to leave improved environment footprint and to trade-off the environmental loss caused during construction, VHDCL through initiative 'VHDC Srishti' working on:

- **Rainwater Harvesting** – It has installed the necessary infrastructure in the affected areas to harvest almost 9 lakh litres of rainwater during monsoon.
- Green Energy Generation & Technology Promotions through installing LED based Solar Street Lights and LED based Solar High Mast Lights.
- Environment Protection & Promotion through plantation of 2,70,202 samplings so far, of different fruit, fodder, and medicinal plants.

(iii) Profit, the economic bottom line refers to measures maintaining or improving the company's success in terms of adding value to shareholders.

It is an inherent feature (rather project specific concern) of hydro power projects that the duration of construction is quite lengthy and huge capital outlay is involved. In case of Vidyut Dam too, Construction began in 1979, but was delayed due to economic impact apart from social and environmental pressure. In 1987, technical and financial assistance was provided by the neighboring country, but this was interrupted years later with political instability. Project then placed under the direction of the irrigation department of concerned home state of said country. However, in July 1989 the Vidyut Hydro Development Corporation Limited (VHDCL) was formed to manage such 1,900 MW Vidyut Hydro Power Complex; wherein 75% stake held by union government and remaining 25% stake by concerned home state government. The total expenditure for this project was USD 1 billion. Since 2007-08, which was the first year of operation, VHDCL is a profit-making company.

The initiative includes the feature of variable speed, the 1,000 MW Vidyut HPP has variable speed features which can optimize the round-trip efficiency under varying water levels in its reservoirs to keep the cost of operation low.

The quantifiable economic benefits include:

The generation of 1,000 MW (3,532 MU of Annual Energy) of environment friendly peaking power. This will no doubt lead to industrial and agricultural growth in the northern region.

- 15% of generated power will be given free to the concerned home state, apart from power as per their share, where the distress is caused due setting up of the project. Hence, the state has economic benefit from the project too.
 - Irrigation of 2.71 lakhs hectares of area, beside irrigation stabilization of 6.07 lakhs hectares. Hence, supporting other economic activities as well indirectly.
- To conclude, the project largely seems sustainable as running in profit since it was operational, leaving minimal and positive environmental footprint, and also payback society (especially directly affected local population) with alternate better facilities and compensation (may be with few minor exceptions or irregularity on case-to-case basis).



CASE STUDY No:- 32

CASE SCENARIO No:- 28 (CASE STUDY DIGEST)as per regular Book

Corner is an online Pizza delivery business. Corner is one of the QSR that created its own system, website, and app. Corner's pizza baking points having a home delivery system. Due to popularity of E Commerce awareness among the customers, online food order system come up with new opportunity for food business. Corner has grown rapidly due to boom in online platform. It is now operating around 1,000 points.

Corner's vision is to increase shareholder wealth by making and timely delivery of quality pizza. Corner provides customize pizzas as per customer's taste. People choose to order pizza online for different reasons not wanting or having time to cook, do not have to wait in a queue for order or taking delivery. During happy hours from 4pm-7pm, baking points have a great deal on both pizzas and beverages. The customers can call, text or order pizzas online. Corner's collection and delivery service uses delivery motorcycles and scooters to transport pizza parcels.

The process consists of a customer choosing the restaurant of their choice, scanning the menu items, choosing an item and finally choosing the place of delivery. Payment is then managed by cash on delivery, or with a credit card, debit card etc. when the delivery boy delivers the pizza at the customer's place of delivery.

Issue

Corner's delivery service is slow. It uses an automated reminder service like Dial My Calls to send updates to customers about the status of their order - when it goes into the oven, when it comes out, when it is out for delivery, and so on. Customers are willing to wait a little longer if they know that pizza is on its way. Slow delivery reduces the taste, aroma and flavor of pizzas delivered.

Recently, financial performance and market share of Corner has deteriorated. The CEO of Corner believes that reductions in customer satisfaction and flexibility, caused by a decline in operational performance, may have led to the recent deterioration. It has been suggested that to use the Lynch and Cross's Performance Pyramid to reverse this deterioration and four new measures for operational performance have been suggested.

Measure	Description
Live tracking system/ GPS driver tracker (to choose the best and the shortest routes for food delivery vehicles and to guide the drivers in real time basis)	Number of successful deliveries per day
On-time delivery	% Of pizzas delivered within 30 minutes of the booking time
Fuel consumption	Average fuel consumption per km travelled

Improving the taste (It is proposed to use pizza delivery bags to keep the pizzas hot and fresh)	% Of positive feedback
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Required

EVALUATE the extent to which the suggested new measures can be used to manage operational performance at Corner.

Solution:

The performance pyramid covers not just only financial performance but also a broad range of underlying processes of business organization which drive financial performance. It facilitates to set financial and non-financial performance measures. Non-financial measures are important indicators which can help to attain long-term financial performance. The elements of the pyramid are interconnected, and each level in the pyramid backs the one above it. For example, on-time delivery of pizzas will increase customer satisfaction, which will eventually lead to greater market share, one element of the vision.

The left side of the performance pyramid covers external effectiveness, such as customer satisfaction, while the right side of the pyramid covers internal efficiency, such as flexibility and productivity. Operational performance is signified by the four elements, which are quality, delivery, cycle time and waste, at the bottom level of the performance pyramid. Operational performance measure can help the organization to achieve the vision of the organization. Reduction in pizza delivery time and delivery of fresh hot delicious pizza i.e., quality can help Corner to achieve its vision.

Cycle time can be reduced by using live tracking system. Live tracking system is a key to improve productivity and profitability. It can help in taking well-versed decisions and schedule pizza delivery more efficiently.

GPS driver tracker will allow real time monitoring of vehicles and offer detailed insights of fuel usage, driver's behavior, engine's idle time, etc. using this data efficiently; money saving are as for pizza delivery can be identified. Through this tracking system idle delivery vehicles can also be identified. This may lead to an increase in the number of deliveries per day and more deliveries, translated into more business.

It can also assist Corner to reduce the fuel consumption and unnecessary over time costs. Reducing fuel consumption would lead to an improvement in financial performance. Measuring average fuel consumption per km travelled does not, however, relate directly to activity, for example, to the number of pizzas delivered. Average fuel consumption will vary between type of vehicle used for delivery i.e., scooters or motorcycles and conditions of roads in the areas of delivery. Average fuel consumption per km is not a good measure of waste or any other aspect of operational performance of business organization. To be useful in managing operational performance, this measure should be changed to average fuel consumed per pizza delivered which would be an appropriate measure for waste.

A loyal and satisfied client is paramount to success of a food delivery business. With the assistance of tracking system, pizza delivery vehicles will respond to service calls quickly and reach their destination on time. Customers are likely to value on-time pizza delivery very much, this will be one of the main causes, and they will choose pizza from Corner. The proportion of on-time delivery is a measure of operational performance i.e., key driver for customer satisfaction.

Moreover, use of pizza delivery bags to keep the pizza hot and fresh will improve the taste, aroma and flavor of pizzas, which is also related to the quality element of the performance pyramid and is key driver of customer satisfaction.



CASE STUDY No: -33

CASE SCENARIO No:- 29 (CASE STUDY DIGEST)as per regular Book

Lite automobile limited (LAL) is one of leading automobile assembly part manufactures of the country. In order to manage the performance of LAL, the CMD in latest board meeting shown his willingness to apply non-financial performance indicators (NFPI) in addition to financial performance indicators.

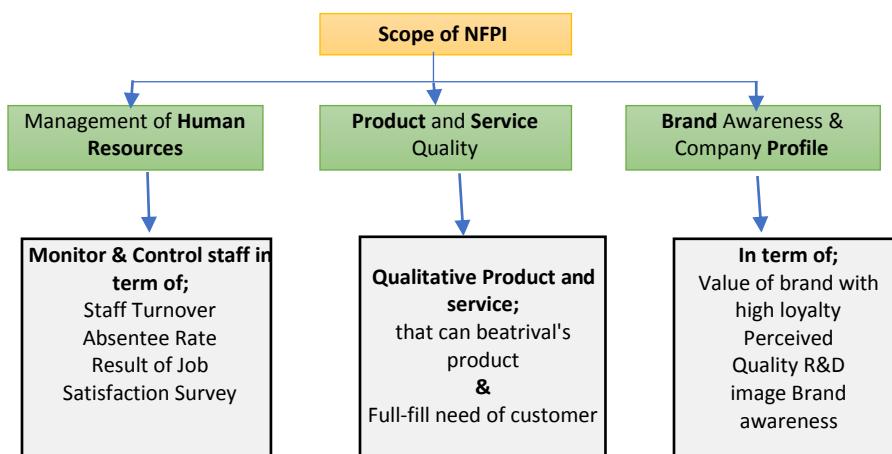
CEO conducts meeting thereafter with functional heads. Some of the functional heads are concerned with the scope of the NFPI as part of performance management system. During the meeting Chief HR Lead of company raise his concern over the utility of NFPI to monitor and control the human resource. Chief Operating Officer also raise his concern on the manner how NFPI can ensure quality in the products and services. Chief Public Relation Officer also concerned how NFPI will improve the brand equity.

Required

Office of CEO hired you as management consultant, for designing and effective implementation of performance management system which also consider NFPI. CEO asked you to briefly EXPLAIN the scope of non-financial performance indicators in regard to only 3 functions whose functional heads raised the concern.

Solution:

The performances management system, which also consider non-financial performance indicators in addition to financial performance indicators; capable to ensure sustainable performance in all functional areas; hence its scope is organisation wide. In regard to three functional areas specifically mentioned in the case scope shall be—



Human resources

It is the people who actually create the organisation through processes, hence human resources are a significant element of any organisation. If they performance well, the entire organisation automatically performs well; hence measures such as staff turnover, absenteeism, job satisfaction, and offer letter accepted shall be part of.

Quality of product and service

What make any business distinct from others, it is largely the value which it's products or services capable to create for the consumers; quality is important determinant of value. Hence, the following performance measures (owning to quality) can be part of performance metrics-

- How much value the product is creating currently?
- Where do product offer in comparison that of competitor?
- Is product capable to generate further superior performance and scope of innovation?

Brand equity

Non-financial performance measures consider the brand equity (value of the brand) as one of the significant performance measures. Brand value is largely based upon factors like customer's awareness & loyalty which includes consumer behavior also perceived quality, stakeholders' expectation and organization ability to meet them, and factors like patents and trademarks etc.



CASE STUDY No:- 34

CASE STUDY No:-30(CASE STUDY DIGEST) as per regular Book

Marcus Neo-Fashion Limited (MNFL) is leading brand in fashion world. Company is dealing in both fabric and ready made garments. Since the company was established long ago, hence has well established SOPs. Management at MNFL is highly concerned with performance and productivity.

In order to determine and appraise the performance, MNFL conducts fortnightly meeting of heads of different responsibility centers apart from quarterly master meeting. In master meeting each of such departmental head need to present report for his department on following aspects—

Performance Matrix Dashboard at MNFL

Criteria	Indicators
I	Average Capital Employed in department with detailed information of source and nature (working or permanent capital)
II	Revenue and Earnings
III	Output (in terms of no of units and per employee productivity)
IV	Existing Clients and New Customer added with data on market share

In one of recent such master meetings, which was chaired by CEO, newly appointed VP-HR quoted 'Intellectual capital is as critical as financial capital in order to ensure smoothening, success and sustainability of any business' hence employee where so ever lagged in technical skills, it is essential and important to work on his skills in order to enhance the productivity. VP-HR said at MNFL ratio of skilled, semi-skilled and unskilled worker are 1:2:6, which needs to be worked at. He also insists to roll-out new wage policy which should support 'Performance Related Pay'. He said, 'I don't know much about enterprise performance, but I strongly believe that performance indicators must include performance of employees in term of their skill and knowledge'.

Immediately VP-Finance said existing performance matrix is essentially focused EV/ EBIT and returns on capital hence sufficient from prospective of performance appraisal. Hence there is no major need to consider impact and effect of human capital. He also added that entities revenue is growing @ of 14% and earning is growing at 12% which 4% on higher side than industry. He said present rate of ROI is 11.5% which is better than industry average of 9%; and Market Cap is also doing well.

VP-Finance countered by VP-Planning & Operations, according to him 'skilled labour will be added advantage in order to develop 'zed' culture i.e., zero accidents, zero defects, zero delays, zero inventory, zero breakdowns, zero changeovers, zero waste'. He also said skilled labour can also add value by incorporating innovations. He quoted presently average defect rate is 1.5% of total production.

On this VP-Marketing add 'skilled employee means better process and better processes leads to competent value chain which can serve highly customized product; hence preconceived quality (conformance to customers' need) leads to strong brand equity.'

Chief Information officer support VP-Marketing and VP-HR by quoting the position of brand can be improved by product development. Newly developed product will meet and set, latest style statement in market; eventually help MNFL to acquire new customers within existing marketing without incurring much on advertisement or sales and promotion. Skilled labour can easily bring innovation to the product.

Required

Post conclusion of meeting, CEO requested you (Management Accountant) to—

- I. DESCRIBE performance management indicators.
- II. DISCUSS need of non-financial performance indicators at MNFL.
- III. TABULATE role of non-financial performance indicators considering the indicator or measures suggested by VP-HR and Chief Information officer.
- IV. Briefly EXPLAIN different models of non-financial performance indicators that MNFL can apply.

Solution:

(i) Performance Management Indicators

Performance Management System plays a key role in developing strategy; it is require measuring the current performance and establishing standard. For performance measurement, certain indicator can be established & such indicator may be—

Financial Performance Indicator e.g., ROI, EPS and EBITDA

Non-Financial Performance Indicator e.g., Balance Scorecard Performance indicator having objectives of Evaluating the achievements of organisation objective Compensate manager

(ii) Need of non-financial performance indicators

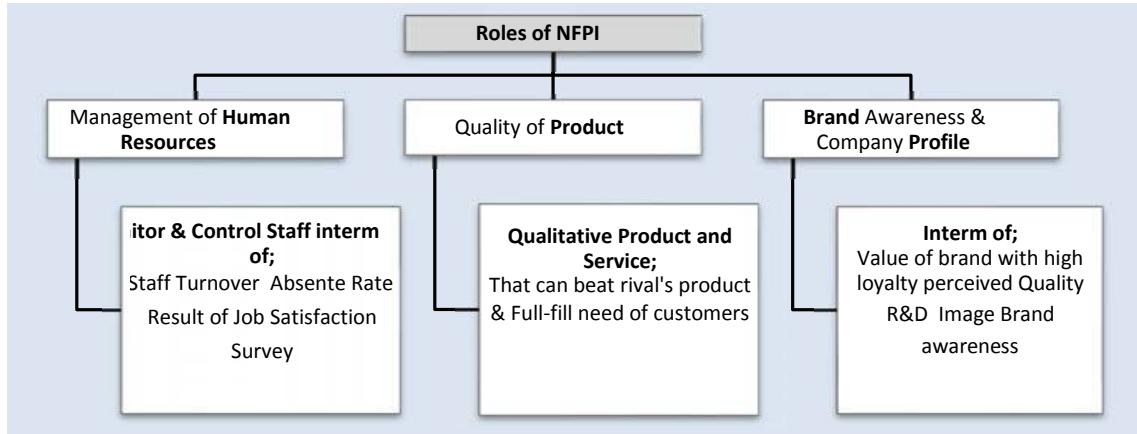
Since financial performance indicators are profit oriented only, but strategy needs to be sustainable apart from profitable. Hence in order to overcome the inadequacy and unjustifiable nature of financial performance indicators, non-financial performance indicator need also to be used. Hence opinion framed by VP-Finance is not tenable that revenue and earnings growth of 14% and 12% respectively, apart from ROI is 11.5% is sufficient to evaluate performance.

Non-Financial Performance Indicators are sustainable action-based indicators. For example, employee training/ health & safety will increase the profit & let them feel empowered, hence NFPIs are equally important to consider. Similarly putting effort in research and development to yield innovative product will result in high brand image & high intellectual property rights.

(iii) Role of Non-Financial Performance Indicator (NFPI)

As already stated, Non-Financial Performance Indicator consider non-monetary aspects of performance such as—

- Skill, Attrition and Job Satisfaction of Human Resource
- Quality of Product
- Brand Quality



(iv) Different Models of Non-Financial Performance Indicators that MNFL can apply

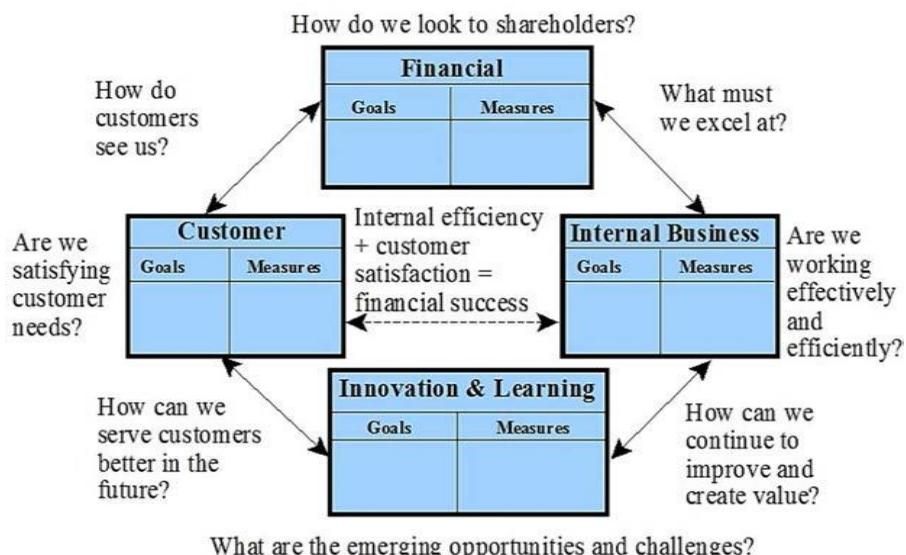
- Top bosses at MNFL wish to consider non-financial indicators apart from financial indicators, hence following models of non-financial performance indicators can be applied–

Balanced Scorecard (By Robert Kaplan and David Norton in 1990)

- Balanced Scorecard can equip, MNFL with a management system (which is more than just measurement system) that is better, in terms of ensuring availability of information to business manager to make better decision and evaluation thereof, by establishing goals and measures in regard to four perspectives–
- Innovation, Learning and Growth Perspective – Suggested by VP – HR
- Internal Business Process Perspective – Suggested by VP – Operation and Planning
- Customer Prospective - Suggested by VP – Marketing and Chief Information Officer
- Financial Perspective – Already under consideration

Innovation, Learning & Growth Perspective

- Employee training & corporate culture attitudes in order to ensure individual and corporate improvement.
- People are main resources in an organization because they are only repository of knowledge.
- It constitutes essential foundation for success of any knowledge worker organisation (learning and growth).



- Learning is something more than training. Purpose is to improve ratio of skilled, semi-skilled and unskilled worker (1:2:6); not by hiring but by inculcating learning into exiting workforce.

Internal Business Process Perspective

- This perspective refers to internal business process.
- This perspective allows the manager to know how well their business is running.
- This perspective needs to be carefully designed/ explained by those who know these processes most intimately.

Customer Perspective

- Recent management philosophy has shown on increasing realisation of the importance of customer focus.
- Customer Satisfaction is very important for any business, because if customer is not satisfied, then will find other supplier to fulfil their need.
- Customer base should be categorised and analysed.

Financial Prospective

- Kaplan and Norton don't disregard the traditional needs of financial data.
- Ensuring availability of accurate financial data on timely bases is one among the priority of management – process of storing and retrieving financial information should be centralised and automated.
- There may be needed to include additional financial data such as risk assessment and cost aspects.
- Expected benefit to MNFL of implementation of balance scorecard includes holistic approach, overall agenda, objectivity, management by objective, feedback and learning and system approach.

BALANCE SCORE CARD (Summary)

Non-Financial Perspective			
AREA	CSF: - Objective (Critical Success factor)	KPI (Key Performance Indicators)	Suggestion (Compare target with actual)
Internal Business Perspective. <i>(immune system)</i> <i>(Activity)</i> <i>(Infrastructure)</i> Seamless Process	Business efficiency, -	Productivity,	If Productivity is low then process should be examined for Improvement.
	Internal strengthness. 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	

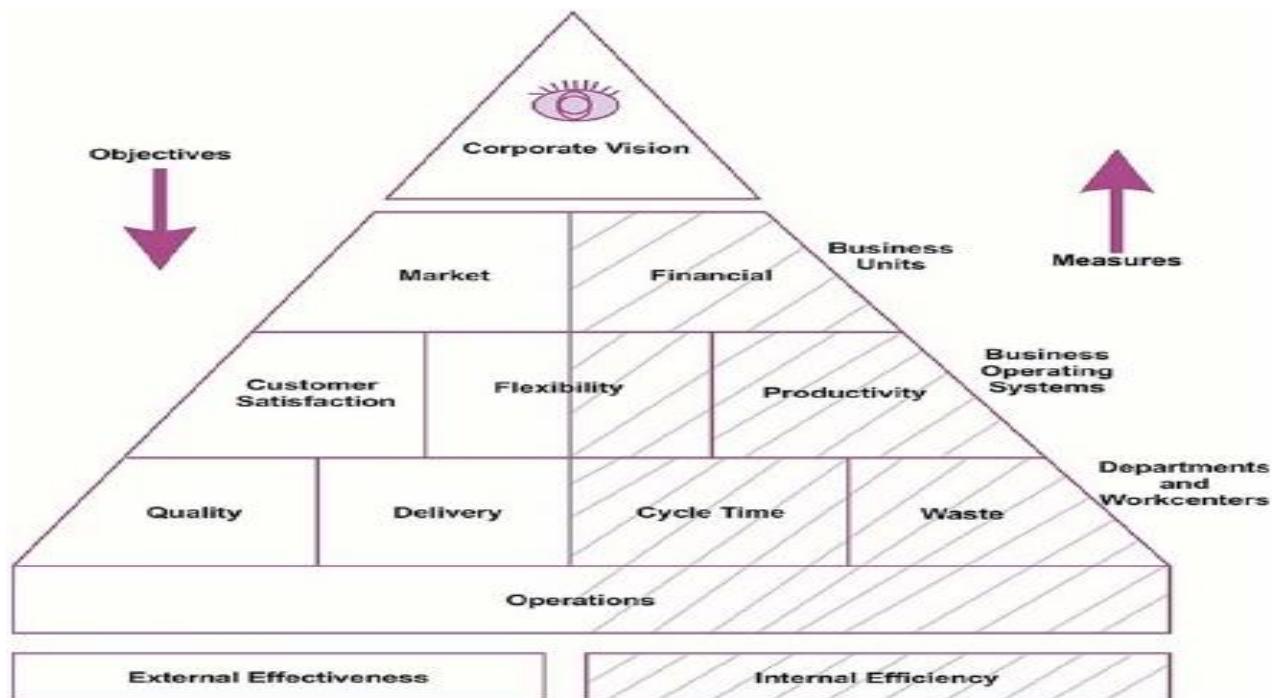
Production, capability Existing Employee, Customer को facility देने के लिये क्या क्या किया, → अपने आप को Strong बना कर ही customer/staff को satisfy कर पाएंगे तभी तो Profit बढ़ेगा		assembly (One Process to another)	
	Sale penetration →	Internet facility for backup to student, *Improve post sale services (new service center) Average time for Replacement Repair service.	
		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.	
	→		
	→		
	→		
	→		
	→		
	→		

Customer Perspective (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)	

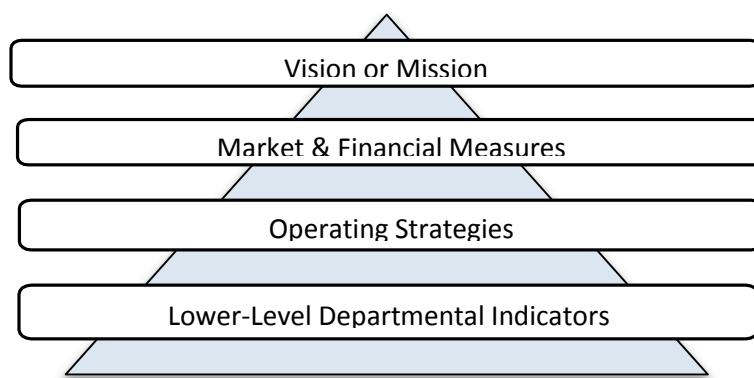
Learning, Growth, Innovation Perspective (Employees) For long term success.	→	Implement Zero defect Policy. (TQM)	(Banking)	Defective reduces by preventive maintenance.
	→			Educate/Training to sales staff: - (behavioral aspect)
	→		Discount Voucher Redeemed.	identify customer need/ requirement & fulfill them.
	→		Feedback.	
			LEARNING	
	→	Skills development for Labour /Supervisor. Improve employee job satisfaction/moral.	No. of training hours spent by employee, Computer training to staff.	Training session should be increased /Introduced for managers/staff.
	→		Cost leadership (reduction of cost by eliminating NVA)	If staff turnover is high: - Reasons investigated & improve them, (Pay scale, working environment, lack of motivation, Reward).
	→		Employee Retention ratio, Employee satisfaction rating. (1-10)	
			GROWTH	
	→	Increase the no. of new product or innovative, service sold.	No. of New vehicle Launched (New features)	
			INNOVATION	
	→	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.	Development cost should be a reasonable percentage of sale. (Neither low/ nor high).
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.

Financial Perspective	Revenue Growth.	Profitability Ratio. Revenue Growth, No. of vehicles sold by company, ROCE, GP Ratio.	
	Maximise shareholder wealth	ROI, Average rate, revenue per user.	

Performance Pyramid (By Lynch & Cross)



Performance Pyramid which contains hierarchy of financial and non-financial performance measures, can help MNFL in considering customer and market as part of performance indicators apart from financial aspects. There are the 4 level of pyramid.



Level 1

Corporate Vision and Mission defines how organisation will achieve long term success & competitive advantage.

Level 2

In order to achievement of Corporate Vision and Mission the focus is on–

- Market Related Measures
- Financial Measures

Level 3

Operating Strategies become guiding force to achieve strategic objective, which includes Customer Satisfaction, Increased Flexibility and High Productivity.

Level 4

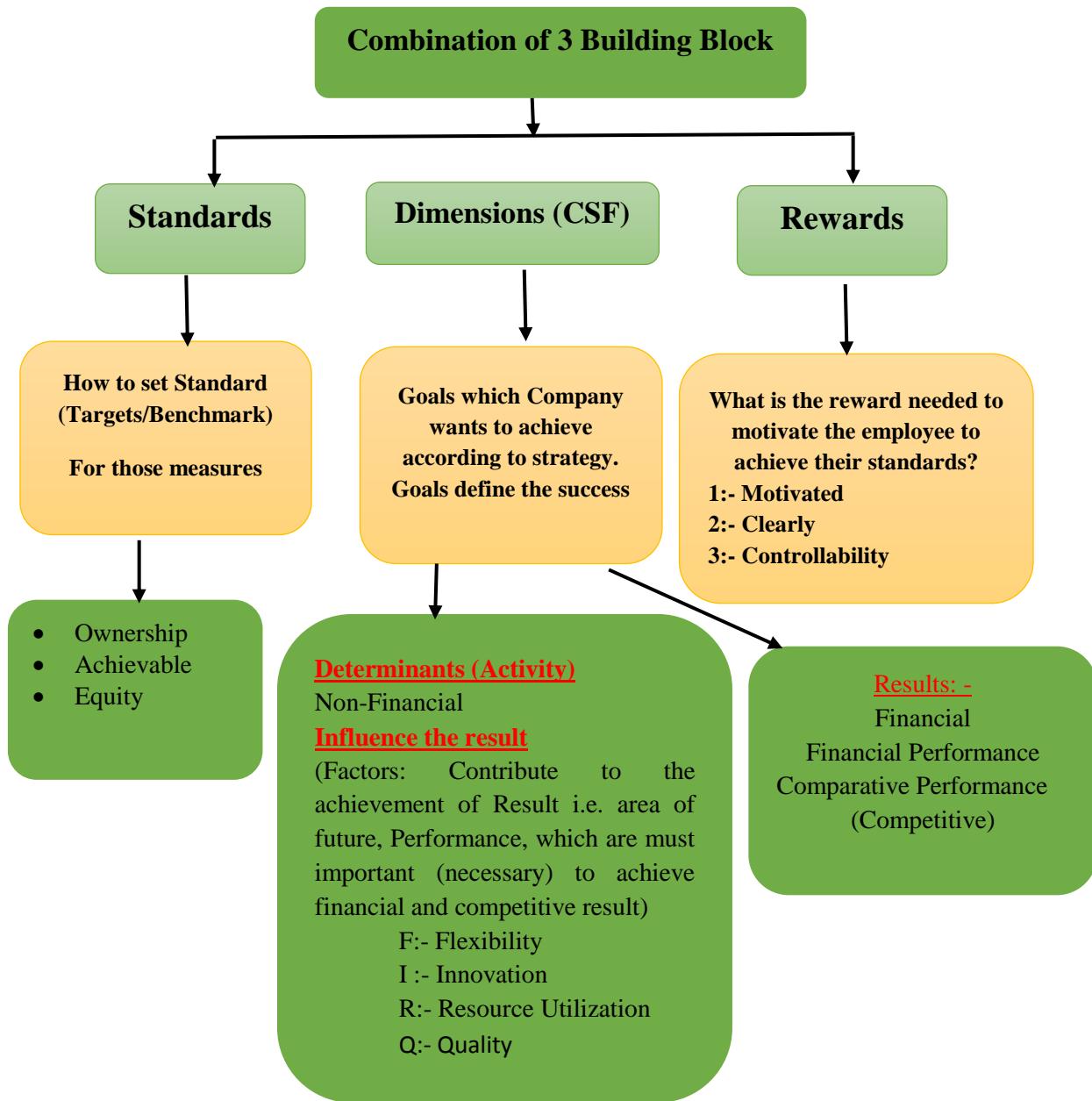
Status of level 3 driving forces can be monitored using the lower-level departmental indicators such as Quality, Delivery, Cycle time and Waste etc.

Note – There is drawback of pyramid that it does tend to concentrate largely on shareholder & customer.



Building Block Model (By Fitzgerald and Moon)

BUILDING BLOCK MODEL (Summary)



DIMENSIONS: -

* Goals which the Company wants to achieve.

* To get two successes(Financial Performance, Comparative Performance) (Result), we should do the following four activities.

* Flexibility, Innovation, Resource Utilization, Quality.

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

* Think “Dimensions “as both financial and non-financial goals of any organization since both these goals serve as the factors critical for its long run success Dimension commonly means attributes to be measured and here, we measure two financial attributes and four non-financial attributes of any organization which can be enumerated below: -

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.

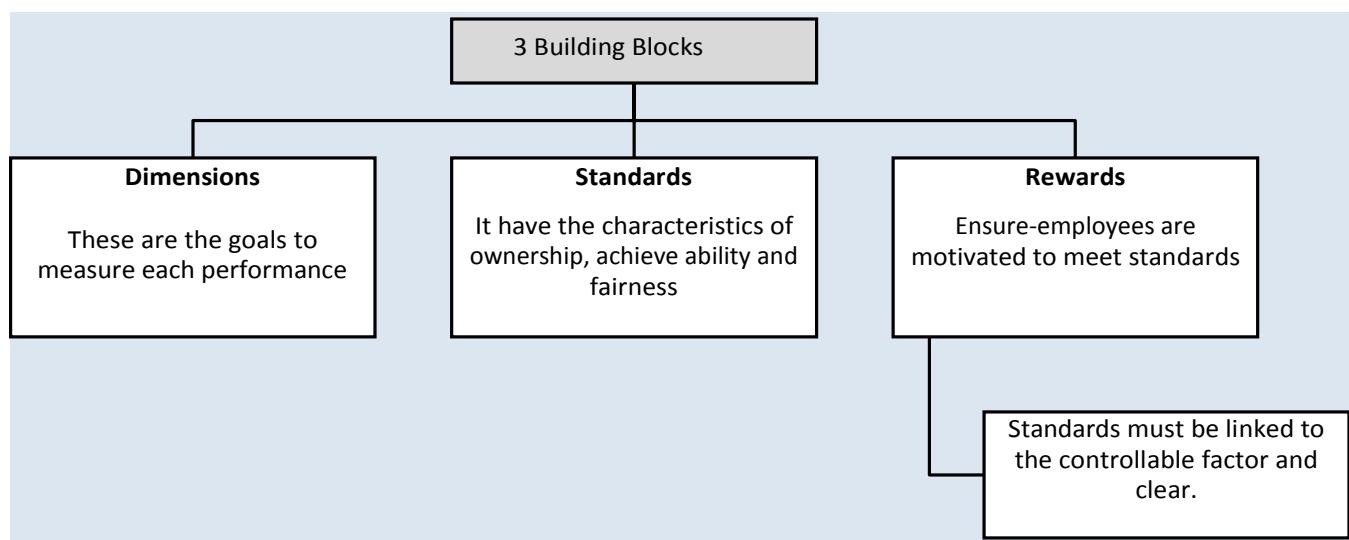
Building Block Model an approach to performance measurement in business services. There are three blocks' Dimensions, Standards and Rewards.

Dimensions are Critical Success Factors (CSFs)

Standards are Key Performance Indicators (KPIs) and

Reward is essential in order to keep workforce energetic and motivated – hence should be performance related.

MNFL can use the building block model to identify the CSFs and then determine the KPIs. These both CSFs and KPI will become the part of performance matrix at MNFL.



Performance Prism (By Andy Neely and Chris Adams)

There is limitation of balance scorecard that is only two set of stakeholders, which are shareholder and customer. MNFL can overcome that limitation of balance scorecard by using Performance Prism model.

Performance Prism framework can help the top bosses at MNFL to consider wide range of stakeholders including activities, communities, consumers, employees, legislators, regulators and suppliers with five focus areas.

Five Focus Area's
Stakeholder Satisfaction - Identify the stakeholder and understand their need
Strategies -Should be drafted in order to full fill stakeholder's need
Process -Critical processes to fulfill such needs & strategies
Capabilities -Capabilities need to operate our processes more effectively and efficiently
Stakeholder Contribution -Need from our stakeholders to maintain capabilities



CHAPTER 1

Introduction to Strategic Cost & Management Accounting

CASE STUDY No:- 35

CASE STUDY No.- 1: Value Chain Model (Westwood) as per regular Book

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-valueadding 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 lead 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) to 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:- 36

CASE STUDY No.- 2 as per regular Book

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 are 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'

	₹
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

Note- 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 ₹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 pay out 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 **sells '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

	₹
Sales Price	1,750.00
Less: Royalty @10%	175.00
Less: Profit @26%	455.00
Target Cost 'Ty-Z'	1,120.00
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
Estimated Cost 'Ty-Z'	1,198.22
Cost Gap	78.22



Summary (for Memory Purpose)

	Manufacture	Suggestion to improve
Inbound logistic	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 suppliers Shift to JIT, save storage cost, Improve quality Down grade items reduce.
Operations:	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.
Outbound Logistics:	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
Marketing and Sales:	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.	<ul style="list-style-type: none"> • On live sale /Reduce operating expenses of store • On time delivery, Price low. Develop: Website Social media YouTube, avoid agent.
Service:	This includes activities related to after	Free Replacement, repair,

	sales service like Installation, repair and parts replacement.	managing return of product by customer. Handling Customer complaint
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CASE STUDY No:- 37

CASE STUDY No.- 3(a) Value Chain Analysis as per regular Book

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 organisations 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 products 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 organisation. 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)
Inbound logistic	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 vendor. Own Delivery system.
Operations:	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.
Outbound Logistics:	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.
Marketing and Sales:	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, Price mgt: - mouth publicity, Market Mgt: - build customer, loyalty by high quality: low price, market expenses.
Service:	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
Secondary Activities		
	Definition	Service
Procurement	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
Technological	Development includes technical knowledge, equipment, hardware, software and any other knowledge which is used in the transformation of inputs to outputs.	Process automation. ERP: -ensure JIT work effectively, Real time inventory level. Hardware/Software
Human Resource Management	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.
Infrastructure	Firm Infrastructure consists of activities such as planning, finance, accounting,	Not only physical Account, legal, Finance, planning



CASE STUDY No:- 38

CASE STUDY No.- 3 (b) (Competitive Advantage) as per regular Book

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 cargo ashigh 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 businesses 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 alter- natives 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

Definition	How to achieve
Enjoy: - Cost advantages if total cost is lower than, those of its competitor	Get discount for bulk purchase.
Benefits: - 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
Providing goods/services with high quality as compare to our competitor with same price	Increase no. of flights. (Morning, afternoon, Evening as well as night)
Match with customer taste/expectation i.e., Reducing waiting time /on time delivery	Seating: Provide extra comfort leg space
Provide unique customer value	Clean aircraft/Comfortable
Customer would like to pay premium price (Haldiram)	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.
	Multiple option (Flight booking) Comfortable aircraft



CASE STUDY No:- 39

Case Study No:- 4(Case study Digest) Style-Inn as per regular Book

Style-inn Fabric & Clothing (SFC) is manufacturer of clothing fabrics to be made up into dresses and suits. SFC established long ago back and presently enjoys the reputation as producer of quality fabric. SFC producing fabrics from high quality synthetic yarns with all standard features which other fabric manufacturer offers. Designs of fabric are old fashioned (traditional in nature) as SFC was established long ago.

Management team at SFC shown believe in integration (vertical and horizontal) and diversification (product range or market reach) as tool of risk reduction and value enhancement (profit too). SFC opts for un-organic forward integration to gain control over value chain by acquiring 'Skylark Designer Clothing' (SDC). SDC is operating in designing and weaving of fabric into fashion wears. SDC is targeting the customers who are image group from 40 to 60 years and belongs to price sensitive income group. SFC in this way is able to reach to end consumer through retailers by manufacturing cloth themselves. Acquisition of SDC by SFC remains largely successful as result in relative high increase in sales and profits, both.

Problem Point

But the sale & profit are not growing at same old rate now, top and bottom line witness the slowdown, which may be due to exhaust of synergy benefits. Retail stores through which SFC sold its material also find it difficult to make reasonable amount of sale. SFC starts exploring new retailers. But due to presence of large number of supplier (of manufactured cloth), buying power of retailers is high; resultantly SFC has to rest at unacceptable low margins.

Down the Line

SFC is considering of acquisition of one of cloth retail chain, named 'Paridhaan' in order to deliver fabrics to the customers directly and eliminate retailers in order to boost its profit margins.

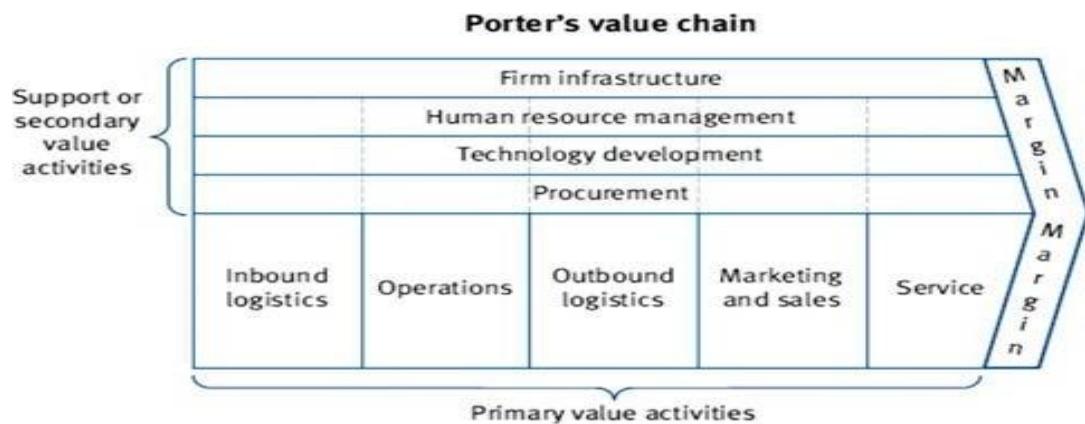
Required

- (i) DRAW Value Chain and EXPLAIN briefly.
- (ii) What do you mean by competitive advantage and how it can be attained? EXPLAIN.
- (iii) IDENTIFY strategy SDC opted to gain competitive advantage.
- (iv) DISCUSS 'value chain effect' of forward integration (acquisition of SDC) on SFCs 'competitive ability and cost competency'.
- (v) EVALUATE possible acquisition of cloth retail chain 'Paridhaan' by SFC.

Solution:

Value chain (suggested by Michael E Porter*) describe those activities of organisation, those add value to input before it become output. Value Chain can be expressed as way of assessing and explaining current competitive advantage while identifying cost drivers.

*Note - Michael E Porter, in 1980 wrote a book 'Competitive Strategy; Techniques for analyzing industries and competitor' in which he explained value chain. In 1985 he along- with Miller suggested value chain as part of bigger network i.e., Value System. It split down company's activities between those which are 'primary (Those result in production of goods/rendering services)', and those which 'support (assist in such production)' these primary activities (as shown in figure below)-



Concept of Value

Successful organization able to create value for its customer (end user) either by offering differentiation (more utility through customized/unique product/services at same price) or cost competitiveness (same utility at par to competitor, but at lower price).

(ii) **Competitive Advantage** is ability to generate more economic value than competitor. There are three generic strategies, suggested by Michael E Porter (In another book which he wrote in 1985 on 'Competitive Advantage – Creating and Sustaining Super Margin') through which an organization could achieve competitive advantage-

Scope/Scale of Strategy		Competitive Advantage can be obtained through		
		Lower Cost		Uniqueness
Competitive Scope can be	Broad Target (Industry Wide)	Overall Leadership	Low-Cost	Differentiation
	Narrow Target (Particular Segment)	Cost Focus		Differentiated Focus

- a) Cost Leadership, where there is great emphasis on keeping costs down. This opens up the profit margin by lowering costs, ideally more than any competitor can.
- b) Differentiation, where a better product or service is sold. This opens up the profit margin by raising selling prices.

- c) Additionally, an organisation can choose a focus strategy, where the organisation concentrated on a small segment of the market. Within the focus strategy, the organisation must choose whether or not to become a cost leader or a differentiator.

(iii) Strategyat SDC

Since SDC targeting the customers who are in age group from 40 to 60 years, and belongs to price sensitive income group, hence strategy opted to gain competitive advantage can be considered as Cost Focus.

(iv) Value Chain Effect at SFC

Acquisition of SDC by SFC can be termed as forward vertical integration. Any forward vertical integration can be justified because it ensures increase in profit, effective control over market as well on pricing and finally brand building by reaching to target group. SFC's main objective behind SDC acquisition was getting control over value chain and increase in profit. SFC has precluded the possibility of other ways of increasing fabric sales for e.g., exporting.

SFC extends the value chain. Earlier it was restricted up-till sale of fabric to garment manufacturer, but now SFC reach out to retailers to sell the manufactured garments. Scope of value addition to end user increased but value system become more complex reason being two systems now merged into one value chain.

SDC (which is acquired by SFC) is believing in focus strategy by restricted its market to the 40-60 years aged and price sensitive income market. This may be a sensible strategy for a company engaged in designing of cloths, but surely not for a manufacturer of fabric.

Effects of forward integration on competitive ability and cost competency

(Importance from cost perspective)

- a) Post integration SFC has to operate two production lines (different set of Men - Workforce, Machine and Methods - product and production layout). One being spinning the fabric and being manufacturing of cloths. Resultantly transfer pricing will be cost aspect which need to be decided.
- b) Since the operation is sequential in nature, first weaving then stitching; hence any mismatch in capacity, lead/run time of both the production lines may result into increased cost of either warehousing or idle capacity. (may result in additional working capital required or loss of contribution)
- c) Carrying Cost (warehousing cost) will also increase on account of manufacturing of cloth ahead of retail demand. (Again, additional working capital may be required)
- d) For SFC, it may become difficult to compete with other fabric manufacturer; because due to diversion of management focus in two production line (may lose cost competitiveness) and SFC is now directly impacted by customer/ consumer who has variety of option apart from SFC's cloths to choose between.
- e) Since design of fabric (manufactured by SFC) are fit for traditional wear, but expertise of SDC is in fashion wear; so, designer at SDC may resent the lack of freedom. (Integration of objective and culture is essential to overcome)
- (v) Although, the intention is to earn more of the value in the value system, but possible acquisition of retail chain 'Paridhaan' (forward vertical integration into retail outlets) has its own pros and cons for competitive advantage.

Expected Benefits

- (a) SFC will have full control over the production, pricing and marketing. So, acquisition of Paridhaan will give strength to SFC for keep relying upon differentiation strategy.
- (b) Since SFC will reach to end consumer directly, hence will have access to entire customer related data. Such data can help SFC to understand customer specification and do

- customization in product as per requirement of specific customer group.
- (c) Since post acquisition of Paridhaan, SFC will have exclusive retail chain; hence reduce the competition from other brands whose products are lying along-with SFC products at selling shelves of retails.

Anticipated Drawbacks

- (a) Managing retail chain will open another area of operation for SFC (Own retail chain is capital intensive business rather labour intensive – high amount of capital will be invested in properties – even then outcome depends upon location of stores) and increase operating as well as financial risk too.
- (b) Since SFC manufactures fabric, which is good for traditional clothing only, hence limited range of products may be available for sale at exclusive showroom/retails shops of SFC (through acquisition of Paridhaan); so, may not be able to attract requisite number of clients to cover the fixed cost.
- (c) In order to complete product range SFC may have to complement its product with product of another manufacturers; this may be not possible in cost effective manner.

Conclusion

SFC should acquire retail chain ‘Paridhaan’, mainly as a response to reduce the competition from other brands whose products are lying along-with SFC products at selling shelves of retails and to reach end consumer directly to understand their needs. However, acquisition would not be so easy due to the high amount of capital investment required. In addition, cultural changes are also essential to overcome the traditional shell.

Overall, the benefits of acquiring retail chain do, however, need to be compared to the financial cost and other qualitative factors.



CASE STUDY No:- 40

CASE STUDY No.- 5: Wireless (Competitive Advantage) as per regular Book

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 are many other manufacturers who have similar product offerings for this market. Mobile Z offers the latest technology features and an attractive design. Wireless has invested substantial amounts 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 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 significantly.

Online shopping has given customers complete access to the prices of phones offered by different manufacturers. This channel of shopping contributes to almost 70% of the sales. Huge discounts by its rivals have 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 prices 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 fell 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) **IDENTITY** 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 cost slow.

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 willing 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 a 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-CostStrategy: -

Definition	Risk	How to achieve
Enjoy: - 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.
Benefits: - 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
Providing goods/services with high quality as compare to our competitor with same price	It will work only when customers are not price sensitive.
Superior innovation: - ahead of competition	Ability if competitors to replicate our feature (Protect: - Patent its feature)
Superior customer Responsiveness: -	Technique may redundant (follow/watch continuously)
Match with customer taste/expectation i.e., Reducing waiting time /on time delivery	
Provide unique customer value	
Customer would like to pay premium price.	



CASE STUDY No:- 41

CASE STUDY No.- 6 Porters Model as per regular Book

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 manufacturers 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 on 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 manufacturers of Paper Tubes have a total market share of 75% offer product ranges 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 manufactures 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 threat 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.



CASE STUDY No:- 42

Case Study No:- 7 (Case Study Digest) as per regular Book

Pariksha Commerce Test Ltd. (PCT) is an organization which provides service of test series of various commerce courses to facilitate students who are going to appear for such examination. PCT provides test series for 11th & 12th standard (Commerce) for CBSE as well as various other state boards; B.Com., B.B.A., M.Com., and M.B.A. of various universities; CA, CS and CMA. Company's Head Office is placed at Delhi NCR with branches and Test Series Centers (TSCs) in various cities of India. Now it is the only organization which provides test series of various courses and guidance of study and has students across India. It has also started online test series facility for students of remote locations who do not have access to travel at any of the TSC. In addition to Test Series, it provides support in preparing a reading plan, providing guidance on paper writing and counselling students, if required.

You are appointed as Cost Management Officer (CMO) of the PCT. In the Introduction Meeting, CEO, Mr. Parikshak, after brief introduction of organization addressed you, "We are rapidly growing education empire and having large student base across India. To reach here, we have faced lot of problems, but it has been overcome. I want to share few of them to make you better understand the organization. Recently, at the biggest TSC, in Delhi, printer was not working and there were almost 450-500 students sitting and waiting for question paper. Outsourcing of print was costly and time-consuming option, so that we had mailed question paper to all of them to save time and cost. Now this approach has been applied at the most of the TSCs i.e. students come at TSC, we mail them question paper and they appear for test. It saves our printing cost. Irony is that non-maintenance of Printer can also save the cost! It may be little difficult for students to read question papers from their mobile phone or tablet, but they will be comfortable soon as "Change" is the law of life and Business too! Further to reduce advertisement cost, we have dropped the contract with Ms. Takshi Sharma, famous film star. We had contracted with her for advertisement on TV for 3 years. She was brand ambassador of 'Pariksha'. Though we got many students due to TV advertisement, we decided to drop the contract as we have enough students and as of now, there is no competition, as such, hence no need to advertise for coming 1-2 years.

Further, we have reduced cost of question paper preparation. Up to last month we had, preciously, 57 members in question paper preparation team. They were drafting new questions for every test. Now we are having, preciously, 22 members in such team, less than half of we had. They are drafting less new questions and preparing paper with questions from past papers and other material of respective course. In our student support and student counselling team we had, preciously, 68 members, 42 for face-to-face counselling and 26 available on phone call. Now there are only 30 members, 12 for face-to-face counselling, and 18 available on phone call at our most profitable TSCs. This may require less infrastructure facility at our few TSCs which is cost beneficial for us.

Oh, I forgot to tell one of the reasons behind reducing advertisement cost is that, after analysis of financial statement, our CFO had suggested that our advertisement cost was comparatively higher than other companies working in education field as well as with our previous years.

These are the major problems we faced and changes we made during the year. Hope this set of information will be helpful to you to commence your work. Till now, we have managed cost management department very well, as you can see from the instances I narrated, however due to heavy workload and growing organization, now we are unable to handle these all alone, so we need your support in success of the organization. Thanks for listening me and you are free to ask anything, anytime. Thanks."

After conclusion of his speech, you thanked him back and moved to your office to start work. You were thinking about strategy of paper less question paper, misuse of mobile phone or tablet during test and other matters as told to you.

In that moment, your phone had buzzed, a notification from Newsagram, an application providing news across world. Notification was about the contract between Abhyas Education Ltd., giant educationist of India and Mr. Shamkar Datta, a film star having one of the highest fans following all over India, regarding advertisement of newly introduced test series by it for commerce and science stream across India.

After proper analysis of new competitor and its products, you informed to the CEO. Discussion and various meetings had been called and after that CEO decided to do more marketing to defeat the competitor. For that the CEO approached new brand ambassador, namely Mr. Prakash Rao, more famous film star than Ms. Takshi Sharma and Mr. Shamkar Datta. This deal was little costlier, still to be in market it was required.

Now the CEO is feeling that some blunders have been made by him in handling of cost management department. Hence, he approached you to analyse various decisions made. Further, he asked you to apply any of the value chain analysis or value shop model to deal with the situation, as he thinks both are the same.

Required

In this regard, you have been asked following questions:

- i. Whether approach of the organization to manage the cost is of the Traditional Cost Management system or the Strategic Cost Management System? EXPLAIN.
- ii. LIST out the general limitations of cost management system identified in (i) and then correlate them by identifying the problems faced by the organization.
- iii. EXPLAIN the differences and similarities of Value Chain Analysis and Value Shop Model to CEO and IDENTIFY which model can be applied in the organization.
- iv. DISCUSS importance of Strategic Cost Management.

Solution:

(i) Traditional cost management system involves allocation of costs and overheads to the production and focuses largely on managing costs through cost control or cost reduction. The underlying assumption was that with reduced costs (direct) and overheads a firm could earn better profits. Strategic cost management is the application of cost management techniques to improve the strategic position of the business, reduce its costs and maintain the effective control of costs. It also involves integrating cost information with the decision-making framework to support the overall organisational strategy. It is not limited to managing costs but using cost information for management decision making. The cost management techniques should be such that they improve the strategic position of a business apart from focusing on managing costs.

In the case of PCT, approach is of managing costs by reducing number of employees, switch to paper less question paper, reduction of advertisement expenses etc. It focuses on managing costs only and not on **improving strategic position of business**. Hence, it can be said that the approach the organization to manage the cost is of the Traditional Cost Management System.

(ii) Following are the limitations of the Traditional Cost Management System:

- **The focus is on managing costs** approached via responsibility centres or product cost issues. However, a broad cost reduction programme does not work effectively in today's business environment.

The PCT focuses on managing costs by switching to paper less question papers, reduction of employees and reduction of advertisement cost without thinking of requirement of business environment.

- Traditional cost management system has internal focus and does not look at the external factors of competition, market growth, customer requirement etc.

At the time of dropping contract, with Ms. Takshi Sharma of advertisement, was ignorance of competition. 'Enough students at the organisation' was just internal focus which leaded to ignorance on entry of new competitor. Additionally, other cost reduction decisions may not fulfil requirements of students.

- A broad cost reduction programme could lead to inferior quality of products & services which might drive away customers resulting in lower sales and profitability.

Due to reduction in members of paper preparation team, quality of question paper may

also degrade. Further, reduction in members of student counselling team may lead to heavy workload on employees and due to that quality of service may also degrade.

- The expectations of modern customer are quite different. An excessive focus on cost reduction could impact the quality of product and services and alienate the customers.

Degraded quality of question papers and reduced student counselling team may lead to dissatisfaction in students. Further, question papers on mobile phone or tablet may be misused by students who are forced to give test. This may lead that students get higher marks in test series, however actual marks in exam may be lesser; this may lead to dissatisfaction to students' parents, ultimate customers of the organisation.

- Traditional cost accounting systems rely on accounting data which can be misleading at times. Financial statements can be a great reporting tool but might not be able to assist in strategic decision making. It does not consider dynamics of marketing and economics.

One of the reasons of reduction in advertisement cost was relying on financial statements, as suggested by CFO which might be less helpful in cost management decisions.

- There is a limited focus on review and improvisation of existing processes and activities.

Non-maintenance of printer was lack of review by the management and to overcome such problem they had mailed question paper to students, sitting at Delhi TSC, was an improvisation of activity.

- Traditional cost management is a reactive approach to cost management.

When it got the information of arrival of new competitor, it approached to Mr. Prakash Rao for advertisement, at higher cost which was reactive approach of situation.

- It has a short-term outlook e.g., saving costs on an annual basis.

At the time of dropping the advertisement contract, it thought that they did not require advertisement for 1-2 years. Approach was to save cost for short term and that approach leaded to higher cost by approaching new brand ambassador, Mr. Prakash Rao.

In general, PCT has been caught in the narrow-minded approach and decided for broad cost cutting. It also compromised on the fundamental business aspects like human capital development, quality, research and development (R&D), operational competitive edge, and other qualitative aspects which are of strategic nature.

(iii) Value Chain Analysis:

Value-chain analysis is a process by which a firm identifies and analyses 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 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 concepts, tools and techniques of value chain analysis apply to all those organisations 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.

Value Shop Model:

This concept aims to serve companies from service sector. In value shop principle, no value addition takes place. It only deals with the problem, figure-out the main area requires its service and finally comes with the solution. This approach is designed to solve customer problems rather than creating value by producing output from an input of raw materials. Value shops mobilizes resources (say: people, knowledge or money) to solve specific problems such as curing an illness or delivering a solution to a business problem.

The ‘problem’ could also be how to exploit an opportunity. The shop process is it creative, involving repeatedly performing a generic set of activities until a solution is reached. The model has the same support activities as Porter’s Value Chain, but the primary activities are described differently.

In the value shop they are:

- Problem finding and acquisition
- Problem solving
- Choosing among solutions
- Execution and control/evaluation

It is advisable to apply Value Shop Model in the PCT, as priority should be given to solve problems faced by the students. Satisfaction of students is only way to grow.



CASE STUDY No:- 43

Case Study No. 8 (Case study Digest) as per regular Book

Safe and Wise Advisory Limited (SWAL) is well established financial planning & risk advisory firm of the country with nation-wide presence. SWAL is engaged in selling third party products be it financial products or insurance products (life assurance only). Financial advisory business of SWAL is doing well and contributing to the half of gross revenue of group and two- third of overall group’s bottom line, but insurance brokerage business is not performing as per expectation. ‘Independent and impartial advice’ to client is unique selling point of **SWAL**.

SWAL was established by Mr Kaushal Jaiswal around two decade ago (when life-assurance business goes private), at then it was one division business i.e., assurance brokerage business. Mr. Kaushal Jaiswal is dynamic leader and presently leading the company as CEO, apart from being major shareholder of the company.

SWAL is widely acknowledged in market for two distinct features, first being presence wide across the nation, in form of ‘sub-agency offices’ equipped with professionally trained sale staff headed by financial planner or advisor, where customer can take advise and discuss opinion prior to investing/ buying any insurance or financial product. SWAL has ‘sub-agency offices’ in 580 cities, towns and blocks. Locations are semi-commercial in nature but prominent. SWAL has practice to sign 30-year lease, when so ever taking and ‘sub-agency office’ on lease in order to reduce the lease cost and bring stability.

Secondly, SWAL sold product of all third parties, hence provide a range of products to its client to choose from. In 2010, SWAL signed a 15-year agency agreement with all 23 life insurance companies recognised then. SWAL’s tagline is also depicting the same ‘we are ethically committed to understand and deliver your needs’. SWAL believes in organic growth and listed on stock market 3 years back to float additional capital to fund more ‘sub-agency offices’.

22 out of these 23 life assurance companies are private and registered themselves with regulatory between the year 2000-2009 for a period of 25 years. Considering the default by few insurance firms and increasing customer complaints, regulator of insurance business in country tighten the registration criteria and harden the norms.

Typically each of 'sub-agency office' comprises three regular and one contractual employee. One being financial planner/ advisor, 2 sales and relationship officer and contractual worker in role of support staff and vested with miscellaneous clerical responsibilities. The on-roll number of employees engaged in assurance brokerage business has been increased to 1,564 from 720 five year ago (up-till 3 year ago number was 845 but since expansion of 'sub-agency' office division it is around 1,500).

Market trend is changing, since the SWAL commence the business. Each of such insurance company, now has their own network of branch offices to sale their insurance product directly; that too at more prominent locations. SWAL counter this, by highlighting its 'independence and impartial advice' practice, although SWAL managed to retain the revenue at same level, but this result in low profitability of 'sub-agency office' business. Now these insurance companies are not authorising any new agent.

Being in service industry and further in order to ensure wider market reach to compensate the loss of profitability in 'sub-agency office' business, SWAL has established own 'E-platform'- 'Policy at you click' to sell the insurance product with total staff of 50 professionals, as a separate division under insurance brokerage business from 'sub-agency office' division. 'E-platform' division is prospering but 'sub-agency office' business is certainly in trouble.

Supported by revenue figures given below (in '000 Crores), analysts reach to conclusion that growth in the assurance brokerage business is slowing down both for SWAL and industry overall:

Market Size/Year	2019-20	2018-19	2017-18	2016-17	2015-16
SWAL's assurance brokerage business	326	320	312	298	280
Total market size of life assurance	2,240	2,198	2,122	2,004	1,960

Revenue earned by each division of assurance brokerage business (in term of ageof the client), is shown in table below for year 2019-20:

Division/Age	20-30	30-40	40-50	50-60	60+	Total
'Sub-agency office' division	2	25	38	164	51	280
'E-platform' division	8	28	8	2	0	46
Total Business of SWAL						326

Since the profitability of 'sub-agency office' division is declining, hence the strategic review committee of board of directors are concerned about the company's declining profitability due to poor performance of 'sub-agency office' division and suggest that the 'sub-agency office' division should be sold off and that SWAL shall re-position its assurance business as an online solution.

Extract from financial statement for agency office division only (figures in '000 Crores)

Particulars/Year	2019-20	2018-19	2017-18
Revenue	280	272	250
Profit before interest and tax	18	16	31
Shareholder's' Equity	156	150	150

8% Longtermdebt	78	64	50
Current Liabilities	455	437	395
Current Assets	605	565	540

Applicable tax rate is 22%. The nature of cost incurred by ‘sub-agency office’ division is more or less balanced between the variable and fixed. Fixed costs are largely committed in nature.

But the CEO is not agreed to the suggestion made by strategic planning committee, because CEO is of belief that SWAL’s USP or original business model is ‘sub-agency offices’ through which they ensure ‘independence and impartial advice’ to their clients.

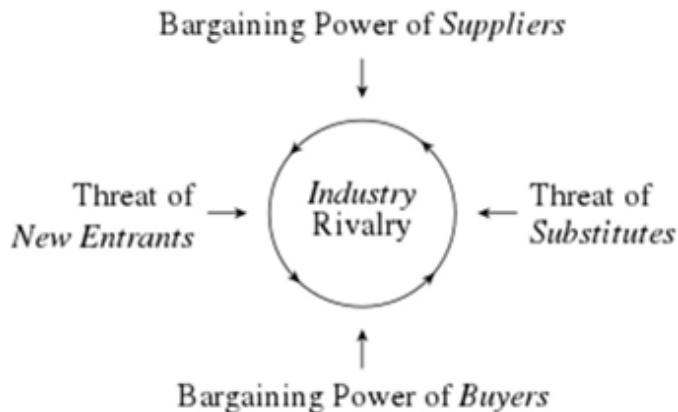
In next board meeting, board is expected to pass resolution on this agenda item in order to decide either to continue or sale the ‘sub-agency office’ division.

Required

- (i) ASSESS the competitive environment of life-assurance business of SWAL (including ‘sub-agency office’ division).
- (ii) EVALUATE the case for holding the ‘sub-agency office’ division, backed by financial viability among other criteria.

Solution :

(i) Michael E Porter, in 1980 in his book “Competitive strategy: Techniques” for analysing industries and competitors suggested five force model to assess the competitive environment of an industry. The five forces which are enumerated by this model are the bargaining power of suppliers; the bargaining power of customers (buyers); the threat of new entrants; threat of substitute products; and the level of rivalry among current competitors in the industry.



This model is also named as porter’s five force analysis. Since each of these five forces affect the competitiveness of business, hence can be used to assess the potential of any organization or entity; life-assurance business of SWAL (including‘ sub-agency office’ division) is not an exception to this.

The bargaining power of suppliers

Number of suppliers will decide the dominance they possess in term of bargaining power regarding the price of good and service they supply to business. In case of ‘sub-agency office’ division following factors will affect the suppliers’ power—

Control over Value Chain— By adopting the strategy of forward integration the insurance companies themselves getting into the direct sales through own network of branch offices in order to enhance their margin or reducing the margin earned by SWAL’s ‘sub-agency office’

division. Since number of insurance companies are neither too less nor too much, hence bargaining power of insurance companies; in terms of percentage brokerage they offered to SWAL is moderate.

Importance of product – SWAL is also dealing in financial product's marketing and advisory, which contribute 50% of group sales and around 67% of group's profit; thus assurance business which is no doubt significant but only choice (business) available to SWAL. Hence, bargaining power of supplier is moderate.

Substitution among the brand – Life assurance product offers similar utility to client; hence easily substitutes among the brands, means if insurance company 1 charge lesser premier than insurance company 2, client will buy assurance of company 1. No doubt switching is less viable once policy subscribed. Since SWAL's 'sub-agency' division is offering the product from all 23 insurance companies, hence bargaining power of suppliers become low.

Supply of other factors – Other factor such 'sub-agency offices', which are largely on lease, has 30-year lease, this will reduce the lease cost as well as bargaining power of land-lord apart from bringing stability.

The bargaining power of customers

Whether seller is price taker or makes, this is outcome of bargaining power of customers (true sense competition). If the bargaining power is high seller will become price taker, else he is price maker. Following factors affect the bargaining power of customers of SWAL's 'sub-agency' division–

Number of buyers – In assurance industry the buyers are large (in comparison to few number of suppliers) and diversified, hence their bargaining power is low.

Standardised products – Since the life assurance is the product, which is standard from prospective of core functionality, hence buyers can easily substitute brands and can negotiate to reasonable extent.

Switching – Once policy subscribed cannot be easily switched with another, hence due to high switching cost bargaining power reduced to some extent at-least.

The threat of new entrants

Although entry of a new firm to the industry/ market depends upon the level of entry barriers, but if new entity enters into the industry; it will surely bring additional capacity which enhance the stiffness of competition; hence become a kind of threat. In case of 'sub-agency office' division, there are some major barriers to entry–

Less number of new life-assurance licenses by regulator due to tough regulations – As mentioned in the case that after considering the default by few insurance firms and increasing customer complaints, regulator of insurance business in country tighten the registration criteria and harden the norms; hence this may act as entry barrier and reduce the threat of new entrants.

Less number of new insurance agent due to no new authorisation by insurance companies – As market is revamping, the agents is becoming competitor to the insurance companies and as mentioned insurance companies stopped authorising new insurance agents, hence this will act an entry barrier for new insurance agents, which is a great positive for SWAL's 'sub-agency office' division and intact the competitive advantage.

Learning curve and economies of scale – Since all the 23 insurance companies dealing in life assurance and SWAL are 10- to 20-year-old organisations; hence learning curve and economies of scale(shared services for the 580 offices - presence in 580 cities)which they are enjoying may become entry barriers for new firm. Since new firms require huge capital to beat par to such

learning curve and economies of scale.

Threat of substitution

Substitution means the product from some other industry which can render the same function which life assurance is rendering. The threat of substitute product is quite low.

Competitive rivalry

The level of competition among the players to acquire or retain the market share directly affects the profitability in an industry. Following factor is affecting the competitive rivalry—

Number of competitors and respective market size – Since there are good number of competitors, hence competition will be intense; may cutthroat rivalry. Presently SWAL's insurance business represent 14.55% of market share (in 2019-20) in comparison to 14.29% of market share five years ago, without any major variation, hence possibility of gaining new market share is limited that too at high cost (in form of advertisement and more after sale services).

Lack of differentiation—Standardised product results in high rivalry, since the life assurance is standard product hence rivalry may be high on account of easy substitution effect among the different brands.

Slow market growth – If market is growing at high rate, rivalry may be stiffer or may be moderate; because everyone has reasonable opportunity to grow. The moment growth stagnates rivalry becomes stiffer because no one wishes to lose market share. The industry life cycle curve is flatter here, because during last four years overall industry wide CAGR (compounded annual growth rate) of life assurance business is 3.39%, whereas year-on-year growth from 2018-19 to 2019-20 is 1.91%. Although potential is limited, but competition is still high.

Exit barriers—If the exit cost for player to move out of industry is high, it will have to be in industry and fight for survival, which may make competition tougher. Since agency agreement and lease agreement is already signed by SWAL hence, it becomes difficult to exit from the business, hence need to participate in competition to retain the share.

(ii) Case for holding the ‘sub-agency office’ division

The strategic review committee suggests that the SWAL's ‘sub-agency office’ division should be sold off and that SWAL shall re-position its assurance business as an online solution, but the same suggestion firstly needs to be evaluated in terms of financial perspective among the other criteria.

The growth in life assurance business is stagnated and industry is in maturity stage of industry lifecycle. This is evident from industry size and growth in the same. During last four years overall industry wide CAGR (compound annual growth rate) of life assurance business is 3.39%, whereas year-on-year growth from 2018-19 to 2019-20 is 1.91%. The moment growth stagnates rivalry becomes stiffer because no one wishes to lose market share. Hence, there is intense competition in market. In cases where market witnesses intense competition, operating efficiently is essential and reduction in cost becomes key success factor; in order to offer competitive deals to clients and retain market share.

Hence, it becomes need of hour, that we review the operating processes followed at ‘sub-agency offices’ to check whether they are efficient or not, in order to ensure greater profitability rather than thinking to sell off the entire ‘sub-agency office’ division.

Now, move to financial analysis, which suggests it is beneficial to hold back ‘sub-agency’ division.

Contribution to the group – Insurance business is contributing 50% of top-line of overall group revenue (and 1/3rd of bottom line), and around 86% (280/ 326) of this comes from ‘sub-agency office’ division and ‘E-platform’ division contributes only remaining 14 %.

Profitability – Margins are positive. There are two major parameters to evaluate profitability further on– Operating profit (EBIT/ Revenue) – No doubt, operating profit shrink from 12.4% to 6.43% in three years' time frame. But as earlier quoted, margin is positive and secondly, there is sign of recovery as well. EBIT increased in absolute terms (from 16 to 18).

Return on capital employed (ROCE) [EBIT / (Equity + Long Term Debt)]– No doubt, ROCE shrink from 15.5% to 7.69% in three years' time frame. But reduction in EBIT is not only a reason, another major reason for decline is change in capital structure. Long term debt is increased in absolute terms (from 50 to 78).

Liquidity – Current ratio (Current Assets / Current Liabilities) being reasonable measure of liquidity indicates enough liquidity in 'sub-agency office' division to meets it obligation. There is minor decline from 1.367 times to 1.33 times. Component analysis of working capital can be performed for greater insight.

Gearing (Debt / Equity) – Gearing ratio depicts the financial leverage, a measure of risk. Gearing ratio no doubt increased as result of introduction of debt, from 1/2 to 1/3, but under control.

Some other quasi-finance and significant factors relevant to the decision of sale of 'sub- agency office' division and full focus on 'E-platform' division–

Client's demography– Clients from all age groups from 20 to 60+ are clients of SWAL's assurance brokerage business. 66.56%(217/326) of revenue coming from clients with 50+ years of age, and 99% (215/217) out of them are associated through 'sub-agency offices', hence holding of 'sub-agency' division become essential. Secondly, clients from a large group may not find it convenient to shift to 'E-platform' 'Policy at you click' and their resistance may result in losing business. Thirdly, they have easily available substitute, because competitors also have branch offices which will give them same feel.

Resistance from employees – Out of 1,564 on-roll employees of assurance brokerage business, only 50 are associated in 'E-platform' division- 'Policy at you click', rest all in 'sub-agency office' division. If SWAL re-structure itself fully as online solution for life assurance then also cannot absorb all the employees, many of them need to be retrenched .Resistance will be there in both the cases because transferred employee may not have requisite skill set, result in poor quality of service and no job satisfaction to employee. Whereas in case of retrenched workers redundancy cost will become additional financial burden. This can be seen as exit barrier.

Legal aspect in term of pre-closure of lease - SWAL has practice to sign 30-year lease, when so ever taking and 'sub-agency office' on lease in order to reduce the lease cost and bring stability. It started the business 2decades ago and expanded it 3 years ago and many of leases are active right now, in case of pre-closure, it may be possible to bear additional financial burden as per terms of lease agreement.

Loosing USP – 'Independence and impartial advice' with presence wide across the nation, inform of 'sub-agency offices' equipped with professionally trained sale staff headed by financial planner or advisor, where customer can take advise and discuss opinion prior to investing/ buying any insurance or financial product is USP for SWAL's assurance brokerage business.

By disposing the 'sub-agency office' division this central idea, with which SWAL was established may be washed out.

In nutshell, the life assurance market has matured in recent years, and result in low growth potential and lower profitability but still yielding positive numbers. Hence, sale of 'sub-agency' division will adversely hit the revenue as well as profitability.



CASE STUDY No:- 44

Case Study No:- 9 (Case study Digest) as per regular Book

“W” is a ‘scented decorative items’ manufacturing company. “W” has always traded profitably due to targeting the niche market for high-value, decorative items. Decorative items often use waxes other than beeswax and paraffin. Bayberry wax is derived from the fruit of the bayberry bush and has a distinctive aroma making it popular for manufacture of scented items. The market for scented decorative items is a saturated one, but the CEO has identified that “W” could begin selling online. None of “W”’s competitors have a major online presence and “W” itself only has a simple website that lists locations of its stores as well as products information.

The Managing Director is unhappy about this move. He is aware that “W” has had issues in implementing IT systems in the past. Most recently, “W” planned to implement an online inventory system, which would have allowed stores to check inventory levels in other, nearby, “W” stores. The system was discarded due to increasing costs and issues with the operating system and application software, which were developed in-house by “W”’s small IT team.

The CEO feels that the issues with the earlier IT plans were because of lack of control. “W” has never employed an IT Director and the CEO has therefore recommended that if “W” decides to expand into ‘online retailing’, this role will require to be filled.

CFO who recently joined the “W” mentioned that operating across large number of states through ‘online retailing’ involves cumbersome data-intensive exercise for this “W” needs to be integrated through cloud-based ERP program, in addition to other operational requirements. For this, there will also be need for additional budget.

Required

- I. IDENTIFY the issues that “W” may face when launching ‘online retailing’.
- II. EXPLAIN the requirement for IT to be a strategic decision within “W”.

Solution :

(i) There will be issues that “W” will face with its proposed move into ‘online retailing’. These may include:

Lack of in-house IT resources

“W” is presently short of an IT Director to manage the project. While the “W” may be able to hire someone quickly to fill this role, he/ she will lack experience of “W”’s business by the time the ‘online retailing’ is started.

“W” is having IT team. They may well lack the time or experience for this online project. This shows further investment will be needed to hire additional resources or to buy the new systems from external agencies.

It is also important to note that an ‘online retail’ system would also be required to have accurate information about inventory levels in “W”. It currently does not have an automated inventory control system as this was abandoned. This problem can be resolved with additional investment in cloud-based ERP program.

Setup and running costs

More than anything, investors want to see a return on their investment. However, the cost of setting up and running an ‘online retailing’ system in “W” may be high. Therefore, in the short term the setup

costs may mean that shareholder returns fall.

“W” will need to analyse whether the additional profit it can make by ‘acquiring’ new customers online will exceed these costs.

Any further investment in human resources will also increase the IT costs.

Technophobia

Staff at “W” may be concerned about not being able to carry out the new jobs required of them or being able to carry out the new jobs required of them but unconvinced of their skills to use new IT system. Therefore, they may resist the introduction of a change that makes them feel or appear incompetent.

In addition, the MD has expressed concerns about the launch of a new IT system, given the issues “W” has faced in the past. ‘Online retailing’ will need top management support in order to be successful.

Lack of customer interest

It is likely that “W”’s customers will not be interested in purchasing decorative items online. They may, for instance, wish to try out or physically see it for themselves rather than buying it online. Moreover, these decorative items may require very high shipping and handling costs. This will also encourage the purchase at a physical location.

It is not clear from the scenario whether the CEO has undertaken any market research. This would be important before making the decision about beginning ‘online retailing’, to avoid launching a costly website that fails to catch customers.

Security issues

As “W” will be processing transactions through its website, it will require to ensure that customers are protected from credit card fraud or data errors. Their online stores are also likely to face phishing attacks, distributed denial of service attacks, man-in-the-middle attacks etc. This problem can be resolved by taking steps to offer secure connections and internal data protection.

It is vital that “W” has IT systems represented at the strategic or board level for various causes:

Competitive advantage

The market in which “W” operates is described as ‘saturated’. It will be hard for “W” to capture additional market share unless it identifies a way to differentiate itself.

If the ‘online retailing’ is a success, it will give “W” a competitive advantage over its opponents and as such it should be part of “W”’s strategic decision-making process.

Stakeholders

‘Online retailing’ is looking good from the long-term perspective, as online selling is in trend now. Therefore, expansion of “W” is of great interest to “W”’s shareholders. As such it is crucial that the directors monitor its progress.

In addition, customers are presently unable to check the inventories within “W”. They may be very concerned in an IT system that would enable them to save needless journeys into “W”’s stores for items that are not in inventory.

Cost of IT system

Setting up an ‘online retailing’ will involve high levels of expenditure for “W”. There is the risk of costly mistakes if it is not carefully ‘controlled’. This is evidenced by the failure of its inventory control system.

Failure of such a key project could have a major impact on the “W”’s financial position.

Fast moving

Technology is a fast-moving area and even if “W” becomes a successful first mover in the market by selling online, rivals are likely to follow “W” into the ‘online retailing’.

In this environment, “W”’s IT systems will need to be continually monitored and kept up-to-date to ensure it remains competitive.



CHAPTER 2

Modern Business Environment

CASE STUDY No:- 45

Case Study No:- 1: (Supply Chain Management)as per regular Book

Memorable Travels is a Tour operator offering holiday packages to a variety of Customers. They advertise and promote their packages using print advertising in newspaper and colorful brochures. A basic holiday package would include transport from the city to the destination, stay, food, attractions, or activities. Memorable Travels has been in business for the past 15 years, it has standard agreements with its suppliers based on which it has been offering standard holiday packages to its customers. Profitable business over these years has resulted in surplus cash that the company intends to reinvest in its business. Recently the management has noticed increase in the number of complaints regarding these packages. This has resulted in lesser number of customers opting for these tours.

A study of these complaints has indicated that customer expectations from a holiday trip vary depending on their age group. Accordingly, Memorable Travels wants to offer customized holiday package trips that would suit the traveler's expectations. IT wants to increase the number of packages offered to customers in addition to adding variety to them. This would provide customers the choices from which they can customize their holidays with the help of Memorable Travels.

The management wants to understand the need and importance of supplier chain management in a service organization such as itself.

Required:

- (i) Define the objective of Memorable Travels should have when considers incorporating the supply chain management framework into its business model.
- (ii) Identify possible components of Memorable Travels upstream supply chain.
- (iii) Suggest the key processes in the business model of Memorable Travels.

(Study Material)

Solution:

- (i) Memorable Travels is providing a service wherein it uses its assets, staff and resources to provide customized travel packages to its customers. It should consider how to utilize its assets and staff to design and manage its supply chain such that it meets the customers demand in a cost-effective manner. Customers demand is uncertain due to (a) customization of holiday packages to suit their individual expectations and (b) sensitivity of travel to factors like economic prosperity, law and order etc.

Business processes must be effectively across organizations and functions to meet the customer's expectation in the best possible manner. The ability of Memorable Travels to respond to its customers demand defines its operational capacity. Having more capacity (capacity) to meet customers demand helps it be more responsive and flexible. However, this has to be balanced with its ability to maintain an effective supply chain management. A supply chain is effective only when Memorable Travels and consequently the ultimate customer is able to get the required level of service from its suppliers.

- (ii) As mentioned in the problem, a basic holiday package would include transport from the city to the destination, stay, food, attractions, or activities. Accordingly, possible components of

Memorable Travels upstream supply chain would include partnerships with:

- (a) Transport providers-road, rail, and air travel providers. This includes travel to the holiday destination as well as the local transport within that location.
- (b) Lodging and accommodation providers-hotels, bed and breakfast providers etc.
- (c) Providers of tourist attractions and activities.

(iii) Key processes in the business model of Memorable Travels would be:

Information Flow

Information flow is critical at various stages:

- To understand expectations of customers
- To share this information with the suppliers of service with whom Memorable Travels has partnership.
- To establish clear service level agreement with these suppliers and to clearly define the scope of work.
- To be able to monitor the performance of these suppliers. Performance has to be monitored because it will impact payment settlements with these suppliers.
- To collect constructive feedback from customers about the performance of these suppliers.

Capacity and skills Management

Memorable Travels has to develop the ability to cater to various expectations of its customers. It has to develop assets and skilled staff who can attract customers and help them customize their holiday packages. To enable this, the company has to invest in this organization, processes, assets and staff. As mentioned above in point(a), information flow is a key process in this business model. The company has to invest in its processes to ensure that information flow is smooth and accurate. Similarly, it has to invest in assets like IT infrastructure offices and also develop a skilled staff who can provide quality service. Memorable Travels should also have the ability to develop pool of suppliers who provide good quality service. Better capacity to cater to customers demand better will ensure that Memorable Travel can develop and maintain its business efficiently. However, since building capacity and developing skills comes with a cost, that has to be balanced out with the revenue it generates.

Demand Management

Memorable Travels will have to focus on how to generate demand for its products. In tune with changing times, Memorable Travels will have to change its marketing from print based advertising to online advertising in order to have a larger outreach to attract Customers. The Company should be able to manage variation in customer's expectations in a cost-effective way. As explained in point (b) above, this will be determined by the capacity of its operations and skills of its employees. Higher the capacity more the flexibility in its operations.

Customers Relationship Management

Customer segmentation and monitoring help in understanding customer's needs in a better way and to focus on efforts to meet those needs through proper and timely communication of information with its service suppliers. However, the cost of maintaining this framework should not exceed the revenue that each customer segment generates. Accordingly, customers account profitability analysis should be prepared for each customer segment.

Supplier Relationship Management

As part of the customer relationship management, specific needs of customers would be identified. Based on these needs, potential suppliers who provide services of the requisite quality need to be identified. Service level agreement need to be drawn up after comprehensive rounds of negotiations. It is imperative to have a clear understanding with these suppliers regarding the quality service expected.

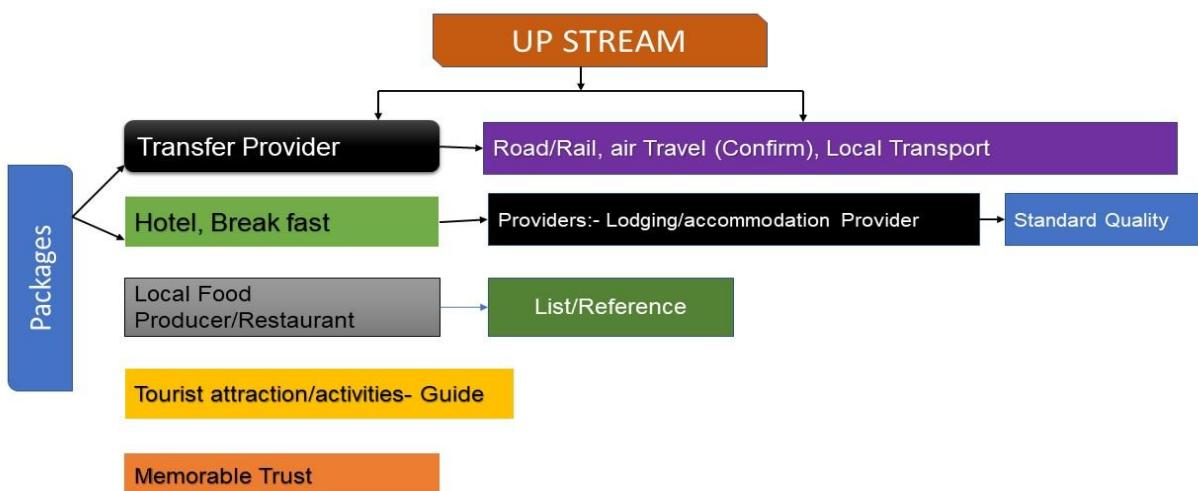
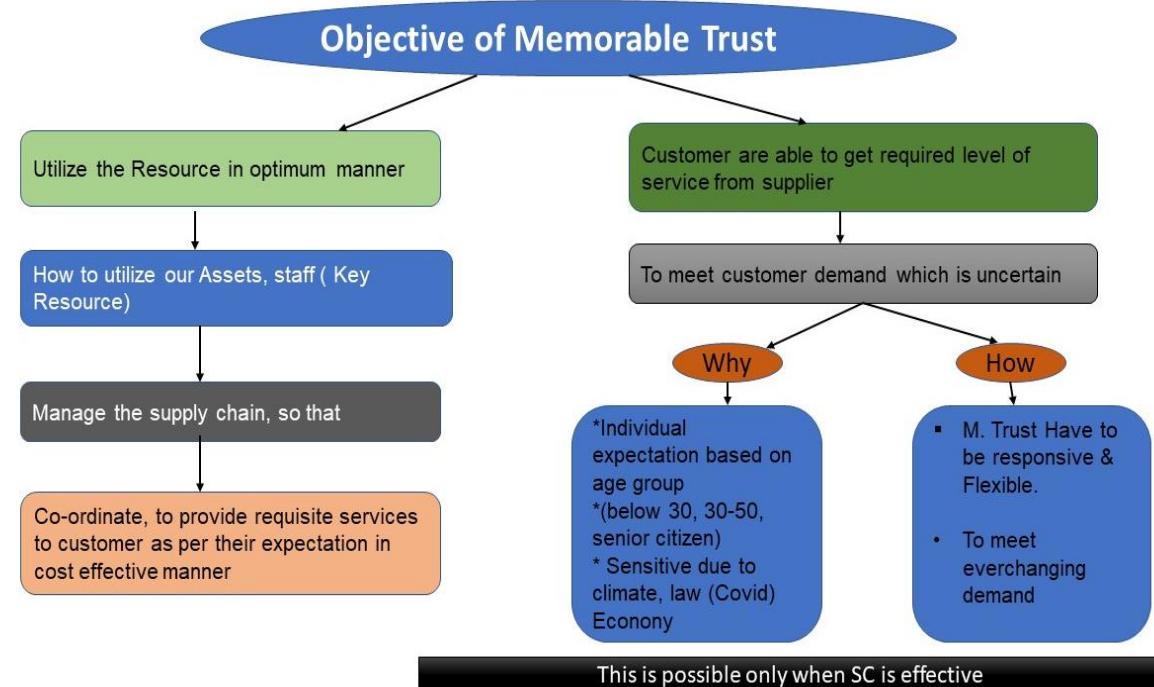
Service Delivery Management

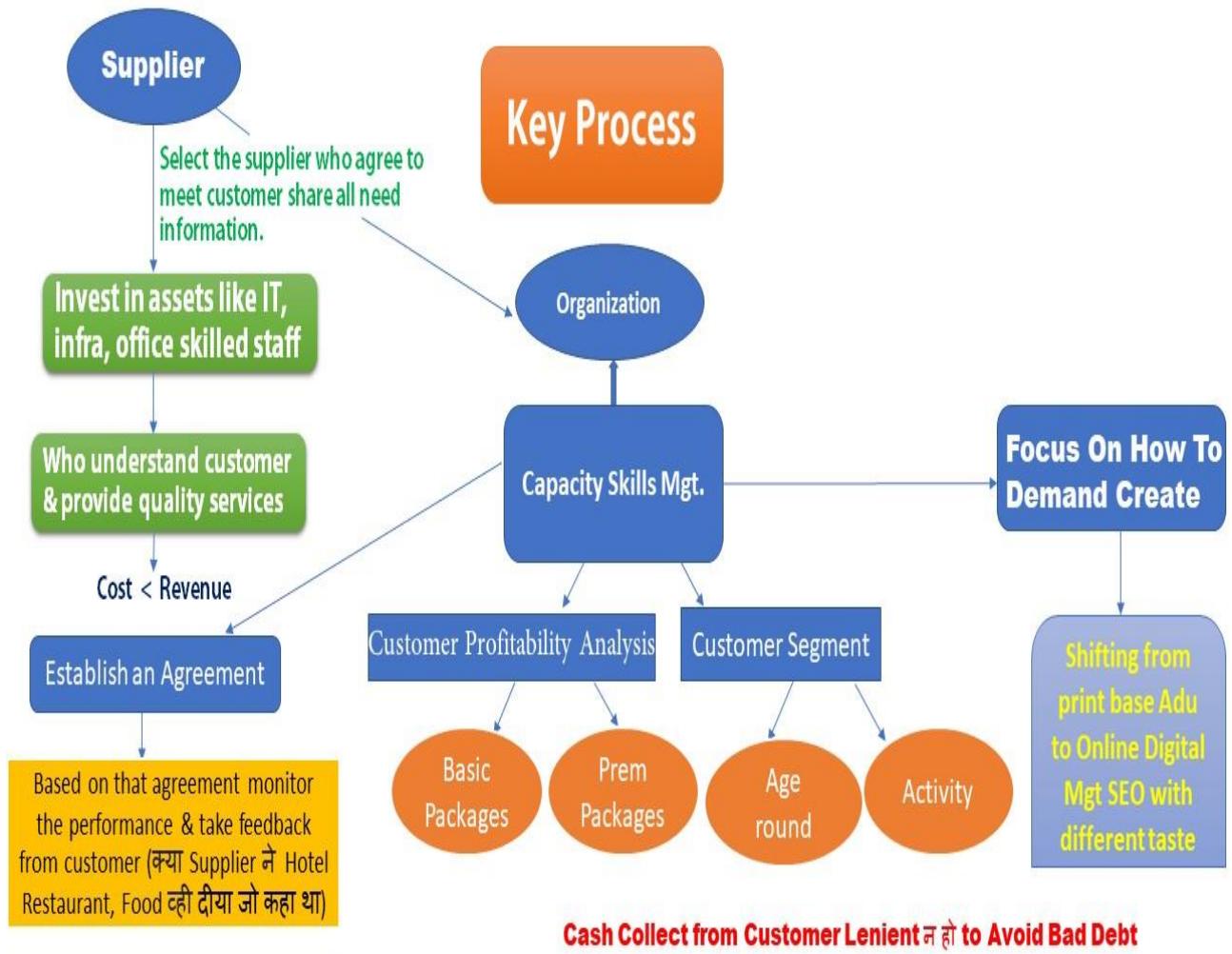
Agreement with suppliers will help to ensure that expectations of customers of Memorable Travels are being met. Service performance must be monitored, checked continuously for compliance. Any deviation from scope may have an impact on the payment settlement to be made with the supplier.

Cash Flow

As mentioned above, service delivery should be monitored to ensure that payment is made only to the extent the agreed quality of service is delivered. Periodic payments to suppliers should be made based on service level agreements. Similarly, cash inflows from customers should be monitored to avoid any bad debts. Pricing for packages should be based on the level of service offered. Again, clear understanding of the terms of contract is essential to avoid uncertainties.

All processes within the company are linked to each other. Understanding the customer's expectation have a direct impact on the supply chain. Therefore, proper co-ordination is required for smooth functioning of the organization and its supply chain.





If Deviation

Penalized

Payment on Periodic Basis As Per SLA

CASE STUDY No:- 46

Case Study No:- 2 (Supply Chain Management)as per regular Book

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 vendor₹ 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.

SCM process and applicability to Sun Electronics

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)

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

E- COMMNERCE: -

E-Sourcing	<ul style="list-style-type: none"> ➤ Website should be developed. Order may be received from anywhere. Physical store-Not necessary (Sun Electronics) ➤ Integrated ERP Required. ➤ As order Received-Feed in software ➤ Production department (information on Real time not even in a one time in a month) ➤ If Delay- delay Production ➤ The company must have effective mechanism to capture customer order & 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.
E- Purchasing	<ul style="list-style-type: none"> ➤ Software =Material Required communicated to supplier (Electronic data interchange) ➤ Vender received material Req. Information Timely ➤ Vender delivery the quality material on time only when he receives the information on Real time basis.
E- Payment	<ul style="list-style-type: none"> ➤ As material Received -RTGS/NEFT ➤ Save time (Cost)
Production	<ul style="list-style-type: none"> ➤ Production must be in accordance with customer order, business environment change. ➤ Present: - Customer will buy what we produce ➤ Now: - We have to produce what customer require.
Logistic System	<ul style="list-style-type: none"> ➤ Logistic team must be trained with required of new business. ➤ Either <ul style="list-style-type: none"> Outsource Own transfer



CASE STUDY No:- 47

Case Study No:- 3 (Suggested Jan21) as per regular book

RS Tools Ltd. is a leading force in manufacture and supply of modern agriculture equipment like Power Tillers, Kisan Krafts, Agriculture Reaper and other Lawn Care equipment. The company

grew substantially over the course of decades and presently ranked 20th by size in the global arena and has become a household name in every agriculture family in the country.

As commonly happens when an enterprise goes in leaps and bounds in a way like this, RS Tools Ltd. is experiencing an increasing degree of supply chain complexities and for many years it did nothing to address the difficulties of its decentralized and fragmented network. The top management decided recently to enter into small irrigation components segment with the brand name 'SIRI', the demand for which is extremely seasonal, and majority of sales are forecasted to occur between April to July every year. The company currently is replenishing dealer's inventory every month, using direct shipment from its central warehouse which is not order driven and is not in sync with the industry average. This kind of dispatching the orders is proving too costly and too slow and not in consonance with the demand pattern. The top management of RS Tools Ltd has started getting doubts about the company's ability to supply its existing 300 plus dealer network, to meet the consistent market demand of its regular agriculture equipment along with the seasonal demand of its new branded products 'SIRI'. They recognized that this state of affairs cannot be allowed to continue in the long run and decided to adopt a long-term program of strategic optimization.

The company has launched an initiative to achieve a targeted 15% reduction in supply chain cost within next 3 years and constituted an expert group to oversee this task. Mr. Karthik, the management consultant, is unanimously appointed at the board meeting to head the expert group formed to revamp the supply chain management. The management is squarely convinced with three of his bold and frank remarks to the board that:

- a) "Most Companies begin with the best intentions to achieve successful and sustainable supply chain cost management, but somehow lose momentum, only to see costs increase in short term due to the implementation costs of SCM".
- b) "If you tell me your company hasn't been able to sustain any progress in supply chain cost reduction in short run, I wouldn't be surprised at all".
- c) "No producer has the ability to give the customers what they want, when they want and at the price they want unless the value chains also have been encouraged".

When the expert team headed by Mr. Karthik began investigation, they found three areas of feasible leverage to reduce supply chain costs which are listed below –

- I. Consolidating shipments and use of third-party logistic providers as the existing decentralized environment of sourcing and inbound logistics are being managed by teams in different places with insufficient transparency in supply chain.
- II. Leveraging on maintaining optimum inventory by bringing the order cycle time down to an industry average of 15 days.
- III. The existing supply chain has evolved rather than grown by design and hence had become unnecessarily complex and the enterprise as a whole is not taking the advantage of synergies and economies of scale.

Mr. Karthik undertook a supply chain network redesigning program –

- to reorganize the supply chain,
- to reduce cost to serve and
- to lay the groundwork for future capability in the supply chain.

He is determined to revitalize the Supplier Relationship management as well as the numbers of suppliers are very large in number and the company is burdened with quality, delivery and

payment issues from the suppliers. He has decided to suggest the use of E-procurement process as a part of upstream supply chain as a remedy to this hiccup.

You being an associate consultant in his office have been asked by Mr. Karthik, to help him by preparing a briefing to be given to the board based on the above facts with particular reference to the following:

- a) LIST the critical issues being faced by RS Tools Ltd under the present setup based on the facts of the above case.
- b) In the light of the initial remarks made by Mr. Karthik at the time of he being designated to head the expert group, EXPLAIN the supply chain management and ANALYZE the validity of the views expressed by Mr. Karthik.
- c) LIST the major benefits that RS Tools Ltd would reap by energizing the Supply Chain Management.
- d) EVALUATE how Supplier Relationship Management is going to help RS Tools Ltd.
- e) DESCRIBE E procurement and its process in the context of upstream supply chain management and DISCUSS its constituents.
- f) ADVISE whether the outsourcing as suggested by Mr. Karthik would help RS Tools Ltd in settling logistic constraints.

Answer :

- a) Due to decentralised and fragmented network the supply chain in present set-up is complex and caused following critical issues being faced by RS Tools Ltd.
 1. Costly and slow supply – Because currently RS Tools Limited are supplying from central warehouse.
 2. Supply not in consonance with the demand pattern – Currently RS Tools Limited replenishing dealer's inventory every month, which is not order driven and is not in sync with the industry average.
 3. Wide dealership and required infrastructure – Since the dealers are large in quantum and fragmented too hence there is doubt about ability to supply its 300 plus dealers.
 4. Regular agriculture product has consistent market demand, while new branded products SIRI has seasonal demand.
- b) Since supply chain encompasses all activities and information flows necessary for the transformation of goods from the origin of the raw material to when the product is finally consumed or discarded, hence supply chain management is the continued management of the flow of goods and services and includes all processes that transform raw materials into final products; It involves the active streamlining of a business's supply-side activities from sustainable perspective to maximize customer value and gain a competitive advantage in the marketplace.

The views expressed by Mr. Karthik are valid largely. Sustainable supply chain cost management is continuous effort rather one-time initiative, wherein commitment is required from top to bottom of organisation to reap the desired results.

Complex the structure is, more and more time it would require, hence in short run cost may be more than benefits (in term of low-cost reduction). Since the Supply Chain Management is purposes to maximise the customer value, hence yield better results when supported by value chain analysis.

ALTERNATIVE I(b)

A complete chain serving the customers or consumers whether linked or interdependent is the composition of supply chain. It comprises vendors that supply raw material, producers who convert the material into products, warehouses that store, distribution centres that deliver to the retailers and retailers who sell the products to the ultimate user.

All activities associated with the flow and transformation of goods from raw material to end user is called supply chain. An important objective of SCM is to correlate the production and distribution of goods and services with the demand of the product.

Analysing the Views of Mr. Karthik

- I. Implementation of supply chain management should be viewed as an investment rather than cost that should be minimized. Implementation of SCM may demand relatively high investments in installing quality software etc. and may also prompt certain hidden costs. Some expenses cannot be forecasted beforehand, and this may frustrate the top management if they are interested to reap in readymade results. So, this comment is valid.
- II. The term supply chain can be referred to as the entire network of organisation working together from design, produce, deliver, and service the products. In other words, all activities associated with the flow and transformation of goods from raw material to end user is called supply chain. It is a multifaceted exercise and cannot present any instant and onetime results. So, the comment is valid.
- III. The following activities which are termed as primary activities under value chain model forms part of SCM.
 - Inbound Logistics covering procurement and related activities.
 - Operations covering conversion of raw material 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. So, the comment that unless value chains are encouraged customers' demands cannot be met is also valid.

c):- Supply Chain Management looks each of the above activities as integrated and interrelated to each other. So, the comment that unless value chains are encouraged customers' demands cannot be met is Supply Chain Management leads to strategic optimisation through enormous benefits such as inventory reduction, personnel reduction, productivity improvement; order management improvement, financial cycle improvement etc. Further it results in information visibility, new/ improved processes, customer responsiveness, standardization - flexibility & globalization of business performance.

Energizing the Supply Chain Management expected to reap following benefits to RS Tools Limited–

1. **Optimum inventory in consonance with the demand pattern**– by cutting order cycle time from 1 month to an industry average of 15 days will bring down the inventory to optimum level and improve the working capital cycle.
2. **Expertise of third party logistic (TPL)** – No, doubt outsourcing cause cost, but it will bring the expertise too apart from saving of time resource which management can spend upon the core and value generating activities.

3. **Ease and transparency** – Current supply chain is evolved rather designed, hence energizing the supply chain management can remove the existing complexities and bring the ease to RS Tools Ltd. Further transparency regarding process and customer requirement will also be there due to generation, transmission and management information as part of supply chain management.

4. **Reduced supply chain cost** – either due to reduction in inventory to optimal level or streamline the activates over supply chain from procurement (such as e-procurement) to delivery to customer (such as using TPL) will result in supply chain cost management. It is important here to note that RS Tools Limited aim for 15% cost reduction target in three years' time.

5. **Generating capabilities and becoming future ready (sustainable supply chain)**– Currently RS Tools Ltd. is doubting their capabilities to continue the supply of regular products to existing 300+ dealers. It is extending the product range as SIRI is added and in future expected to expand the dealers' network too, hence energizing the Supply Chain Management can help in term of improve and enhanced capabilities.

(d) A supply chain when the flow relates to supplier it is termed as upstream flow, hence management of transaction with the supplier will be termed as upstream supply chain management. Upstream supply chain management rely upon supplier relationship management and use of information technology.

Supplier relationship management provides the structure for how relationships with suppliers are developed and maintained. This help the organisation to gain the advantage out of supplier capabilities to innovation, ensure quality, be reliable – in term of delivery and frequency, eliminate the variation in costs/price reductions and agility to reduce risk factors.

Revitalization of Supplier relationship management expected to help RS Tools Limited in following manners-

1. Extended value chain (& consolidated supply chain) to ensure quality and innovation– Concern for quality is mentioned in case. Purpose of supply chain management is to improve the customer experience by offering more value. Value in product depends upon input used, hence supplier can play vital role in same. For this relation suppliers shall be cordial, and Supplier relationship management is capable to ensure this.

2. Reduce in number of suppliers for better management and favourable credit & trade terms considering the payment issue– since it is mentioned in case that RS Tools Limited is burdened with the payment issue, hence may buy its supplies from limited suppliers. Because it is obvious if large volume purchase from limited suppliers or selected suppliers, they will offer relaxed credit terms and competitive prices, against this if requirement is to avoid failure in deliver, then prefer multiple suppliers. Switching to new supplier may reduce the cost in some cases.

3. Enhanced reliability in delivery – Better relationship with supplier and sharing of information lead to enhanced reliability in delivery in term of quantity, frequency, place and time. However, an audit needs to be made of supplier performance and the opportunity, or otherwise, for RS to concentrate on suppliers able to deliver on time. Clearly there are costs associated with this.

(e) A supply chain when the flow relates to supplier it is termed as upstream flow, hence management of transaction with the supplier will be termed as upstream supply chain management. The main activities of upstream supply chain are procurement and logistics. Upstream supply chain management rely upon supplier relationship management and use of information technology.

E-Procurement is the electronic methods beginning from identification of the organization's requirements and end on payment. It can be seen as technology solution designed to centralise and automate interactions between an organisation and its' suppliers to improve the speed and efficiency of procurement practices.

E-Sourcing, E-Purchasing and E-Payment are constituent of E-Procurement.

E-Sourcing covers electronic methods for finding new suppliers and establishing contracts. E-Sourcing is inviting the tenders and quotations online from any part of world, that too in cost and time effective manner; hence E-Sourcing is considered as the best possible way to find out the best supplier.

E-Purchasing covers product selection and ordering online, hence streamlines procurement and reduces overheads. Decentralised and need based orders are placed rather by central ordering department.

E-Payment includes tools such as electronic invoicing and electronic funds transfers. This brings benefit of real-time settlement, error proof system and automatic and real-time record maintenance through ERP.

- (f) Outsourcing is business practice used by companies to reduce costs (extra capital expenditure in technology) or improve efficiency by shifting task, operations jobs or processes to another party for span of time. Outsourcing suggested by Mr. Karthik would help RS limited in settling logistic constraints to larger extent, because-
1. Currently it is feeling doubtful whether has ability to serve the existing network of 300+ distributors, while it is replenishing dealer's inventory every month. When it starts replenishing the inventory after every 15 days then existing logistic system may fail hence outsourcing may be a way out to settle the existing logistic constraint.
 2. Newly acquired product SIRI has seasonal demand only for 4 calendar months in a year, hence generating logistic capabilities for 4 months which remain idle for remaining months of year is not seem financially viable solution hence outsourcing in case of SIRI is seeming best way to settle the existing logistic constraint.

Note— Third party logistics provider's expertise may enhance customer experience and management may get more time to focus on strategic aspects. Hence RS Tools Ltd. need to evaluate its value chain and try to categories logistic either as value generating or non- value generating activity. If logistic is largely non-value generating activity from the customers' perspective of RS Tools limited, it shall be outsourced the logistics and focus on the core. Overall, depending upon the application of various strategic cost management techniques, decision on outsource shall be taken.



CASE STUDY No:- 48

Case Study No:- 4 (Business Excellence Model)as per regular book

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 terns, 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 competitor. 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

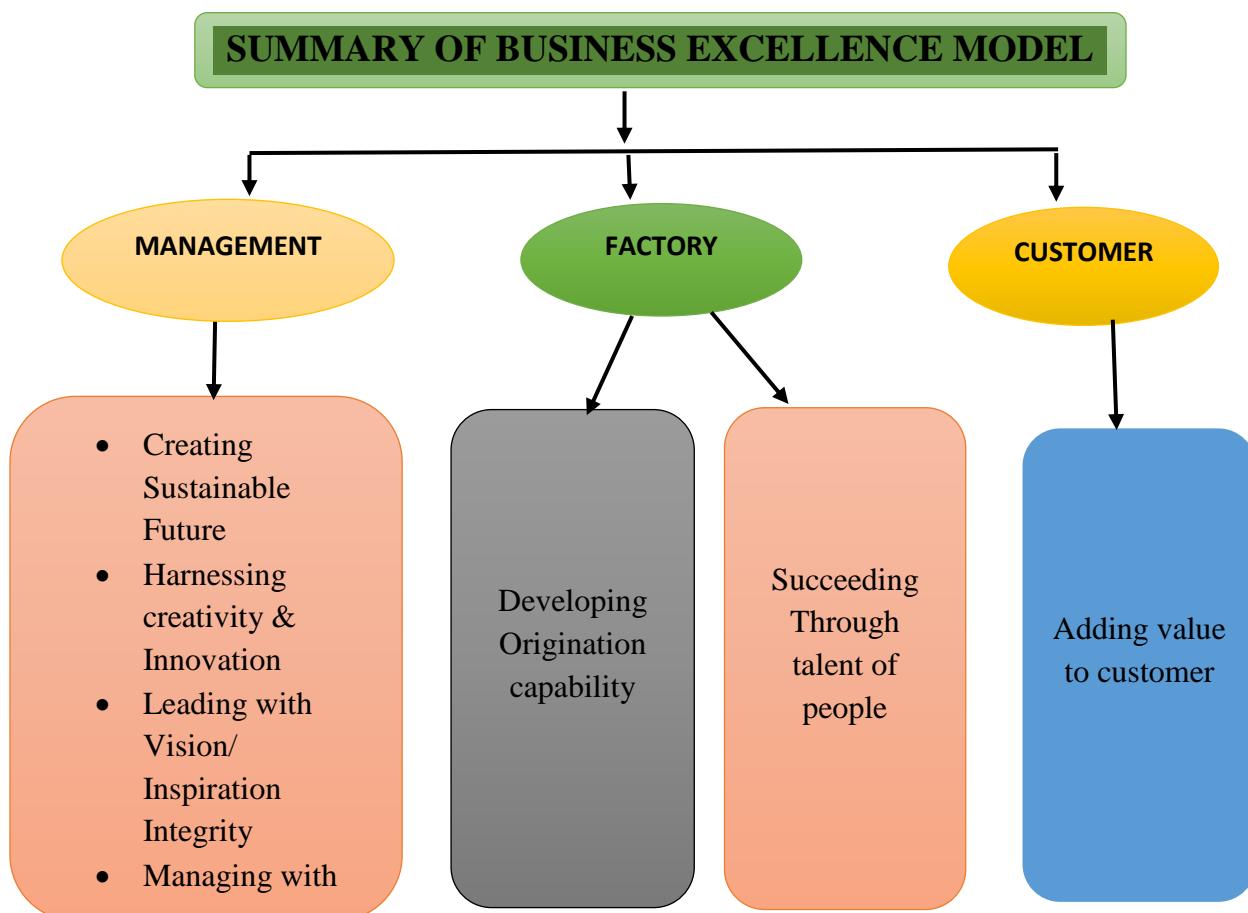
indicate increasing market share?

- (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?

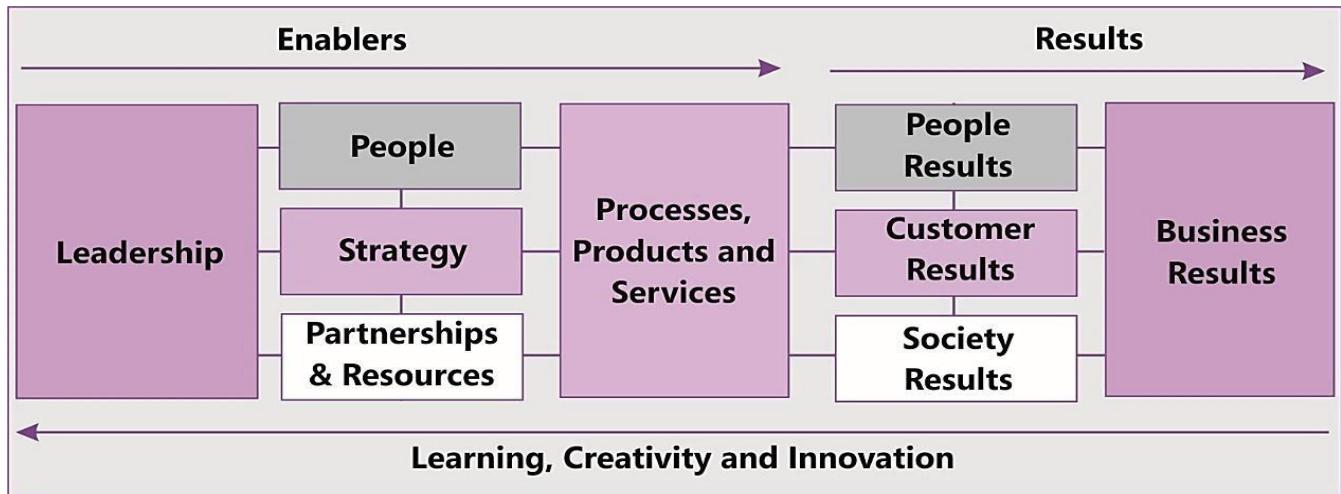
Enablers enable achievement of results. EFQM model documents this flow and symbiosis in a structured way. It highlights the strength and weakness of the enablers. With this information, the company can alter its operations and strategy to achieve desired results. On assessment, there is a flow from results 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.

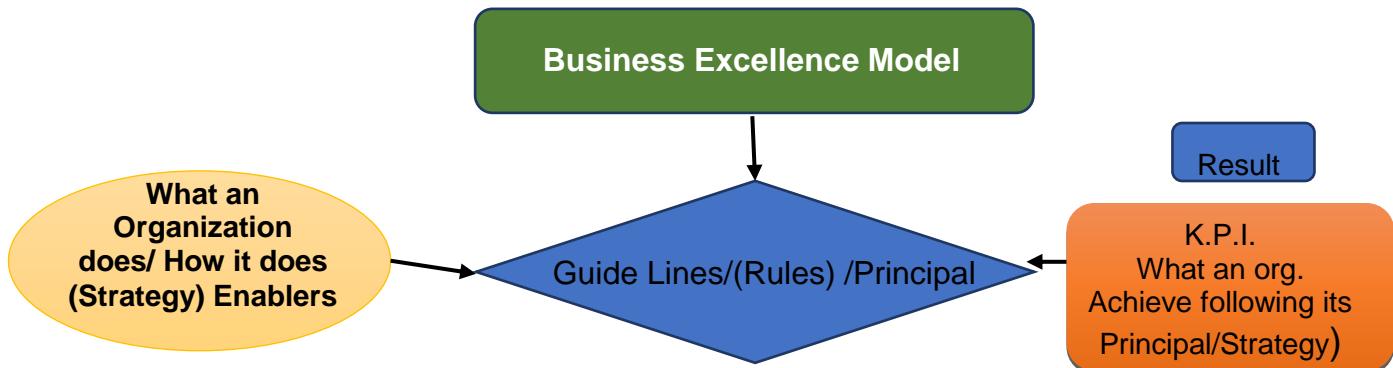
When a company wins an excellence award based on a business excellence model, it gains in stature within the industry. This recognition could work to its advantage financially and otherwise.



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



Summary of Business Excellence Model



Customer	Content	Ex.
(1) Adding Value to the Customer	* Co. Need to understand the expectation, need taste Requirement of their customer.	Cloth Industry: - Indian Apparel, Western apparel, men, women, children.
	According, it should structure Its operation to add value, to the customer in terms of quality, on time delivery, support.	Car Industry: - hatchback car, Sports car, sedan. Mobile: - Features
Factory: -		
(2) Developing Org capability: -	Company should identify & develop unique capability to have competitive edge (Differentiate from other) (Employee: - Why we offer Job to you: - Decision Making, Power in tuff condition) Lecturer: - Delivery of words.	E.g. <ul style="list-style-type: none"> ➤ Tracking inventory on Real Time basis at all stores ➤ Your supply chain ➤ Flooring Co.: - To install your new flooring tomorrow if you buy it today. Singer, Player: -

(3) Succeeding through talent of people. (Engine/Pillar)	Atmosphere of team work, to ensure achieve organisation goal/Personal goal. (They should do works by heart /not by time)	Performance evaluation employee a month, Reward, Training -ways to cultivate talent within the organisation.
Management	Content	Example
(4) Creating sustainable future	Company should have positive impact on environment try to reduce negative impact, (Triple bottom line)	<ul style="list-style-type: none"> • Use natural resource in optimum manner. • Do not utilize child labour. (Exploitation of Labour) • Do not use leather as input: - It require animal skin.
(5) Harnessing creativity & Innovation	Promote/encourage working environment that appreciate creativity & innovation, continuous improvement	New apparel design tested: <ul style="list-style-type: none"> - • If feasible-Mass production • Filter/Purifier at source of water.
(6) Leading with vision, Inspiration, Integrity	Management of company should have clear vision & strategy to achieve them.	Leader shape the future of organization. High thought: - High growth
(7) Managing with agility	Capability to identify & effectively respond. To opportunity & threats. To Grab new challenges	E-commerce /Online business.
(8) Sustaining outstanding Result	It's not a onetime Programme, Do it continuous.	-----

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

(Machinery/Plant/Cash bank Balance)	excellent Resources should be utilized optimally	Society Result	C.S.R. (net)
e: - Process: Product, Services	Should be managed/continuously Improved.	Customer Result	Satisfaction level, brand loyalty/ Increase market share

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:- 49

Case Study No 5: - (Gain Sharing Management)as per regular book

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 health care 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 No:- 50

CASE STUDY No: - 1 (Six Sigma and Cost of Quality) as per regular book

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 ₹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 ₹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 ₹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 ₹6,250 per hour.

The variable cost of electronic component is ₹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 be 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 ₹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 ₹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 ₹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 ₹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 ₹10,00,000 per annum to ₹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 to achieve 6 σ 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 ₹20,000 each, therefore having a value of ₹50,00,00,000. Sales returns @1% amount to ₹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 ₹ 12,500 per unit. This is an avoidable cost amounting to ₹31,25,000 per annum that is 0.63% of sales (₹31,25,000/₹ 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 ₹30,00,000, which is given to be representative of the average yearly warranty cost. Therefore, currently this cost amounts to 0.60% of sales (₹30,00,000/₹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 3σ and 4σ level**. The rest of the industry is able to achieve 6 σ 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 leads 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, to 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 units / 5 units per hour = 505 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 address. 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 hours yearly training \times ₹1,000 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 σ 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
Preventive Cost				
Training (5,000 hrs. \times ₹1,000 per hour)	xxx	xxx	50,00,000	0.83%
Quality Planning and Improvement	xxx	xxx	1,50,00,000	2.50%
Appraisal Cost				
Inspection Cost	10,00,000	0.20%	6,00,000	0.10%
Internal Failure Cost				
Rework	31,56,250	0.63%	xxx	0.00%
External Failure Cost				
Sale Returns	31,25,000	0.63%	xxx	0.00%

Warranty Claims	30,00,000	0.60%	xxx	0.00%
Total Cost of Quality	1,02,81,250	2.06%	2,06,00,000	3.43%
Yearly Sales	50,00,00,000		60,00,00,000	
Total Cost of Quality / Sales (%)	2.06%		3.43%	

(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 be 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:

Particulars		Amount ₹
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 an additional 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 handle 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 Mythology of Six Sigma used to Improve existing business Process

SIX SIGMA (BASIC CONCEPT For Case Study)

DMAIC

<u>Define the Process</u>	<u>Applicable for almost all case study (All company, service Provider)</u>																																
(समस्या क्या है) (जब तक समस्या सही से explain नहीं होगी तो हल कैसे निकलेगा)	<p>What is the Req. of Customers?</p> <p>Satisfaction i.e., on time delivery (undamaged goods) & Quality Goods.</p> <p>why returns from 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 & opportunity to improve by: -</p> <ul style="list-style-type: none"> (a) Discussion with staff (b) Customer feedback/ complaint <p>Dissatisfaction is reflected in the form of sales return & Warranty claim. Competitors have no sales return, No warranty claim.</p>																																
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<p>Control</p>	<p>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.</p>								

Statement of Cost benefit

Incremental Contribution	(₹)
Sales (Additional) 5000 unit @ 20000	₹ 10 crore
Less: - Variable Cost 5000 unit @ 12500	₹ 6.25 crore
	(A):-₹3.75 crore
SAVINGS	(₹)

I: - Inspection cost of Assembly line (10 Lakh – 6 Lakh)	₹4 Lakh
II: - Rework cost $\frac{2525 \text{ unit}}{5 \text{ hours}} = 505 \text{ hours} \times 6250 \text{ Per hour}$	₹31,56,250
III: - Sales Return (Reduce) 25000-unit X 1% 25000-unit X 1% = 250-unit X 12500 p.u (VC) Warranty Claims	₹31,25,000 ₹30,00,000
iv: - Savings in costs	(B): - ₹ 96,81,250
Less: - Incremental Cost	(₹)
A: - Training cost 5000 hours X 100 per hour	₹50 Lakh
B: - Quality Planning & Improvement	₹150 Lakh
C: - Additional Depreciation	₹120 Lakh
	(c): - ₹320 Lakh
Net benefit A+B-C =	₹151,81,250

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:- 51

CASE STUDY No: -2 (Six Sigma)as per regular book

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 ₹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 – ₹850
- Variable cost per unit of external sale – ₹770

The variable cost per unit will be ₹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
- III. Recommend the transfer price at which the internal sales should be made

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

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 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 + 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 = ₹750 [There will be no opportunity cost; Additionally, variable cost per unit is ₹20 lower and hence the same would be ₹750 per unit]
- Transfer price for balance 5,000 boards = Variable cost + Opportunity cost = ₹750 + ₹80 = ₹830 per unit

Calculation of Maximum Transfer Price:

- External suppliers are currently supplying at prices of ₹800 per unit and hence the maximum transfer price by Furniture Division would be ₹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 ₹750 per unit to ₹800 per unit
- Balance 5,000 boards cannot be transferred as minimum transfer price of ₹830 per unit exceed maximum transfer price of ₹800 per unit. This would indicate that a transfer is not feasible.



SUMMARY

DMAIC is a Methodology of Six Sigma used to Improve existing business Process

SIX SIGMA (BASIC CONCEPT For Case Study)

DMAIC

Define the Process	Applicable for almost all case study (All company, service Provider)						
<p>(समस्या क्या है)</p> <p>(जब तक समस्या सही से explain नहीं होगी तो हल कैसे निकलेगा)</p>	<p>What is the Req. of Customers?</p> <p>Satisfaction i.e., on time delivery (undamaged Furniture) & Quality Goods.</p> <p>Properly packed in box (Min req in manufacture & 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 & opportunity to improve by: -</p> <p>(a) Discussion with staff (b) Customer feedback/ complaint</p> <p>Objective: - To reduce the no. of customer returns.</p>						
<p>2: - Measure</p> <p>(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.</p> <p>(What is the level of six sigma of current operation)</p> <p>Sales Return of Furniture (Types)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #f2e0ce;"></th> <th style="background-color: #f2e0ce;">%</th> </tr> </thead> <tbody> <tr> <td>Category-1:- Difficulty in Assembling /part missing</td> <td style="text-align: center;">48</td> </tr> <tr> <td>Catergaty-2, 3 &4: -Damage/defective/Poor quality</td> <td style="text-align: center;">13, 27 &</td> </tr> </tbody> </table>		%	Category-1:- Difficulty in Assembling /part missing	48	Catergaty-2, 3 &4: -Damage/defective/Poor quality	13, 27 &
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Catergaty-2, 3 &4: -Damage/defective/Poor quality	13, 27 &						

			10 = 50		
	Category-5: - Late arrival		2		
			<u>100</u>		
Sales Return					
	Country Wise		XX		
	Product Wise		<u>XX</u>		

3: - <u>Analyze</u> (Detect the root cause of Problem so as to improve that Problem)	Detect the root cause of Problem: - E.g.				
	Problem	Possible cause			
	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)				
Improve	Experts take corrective measure, Recommendations to improve process in consultation with staff/based on facts, to minimize/eliminate the root cause of problem.				
	Problems	Suggestions			
	Category1: - Assembling / part missing	Adequate marking , 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.			

Control	<p>Monitor the performance ongoing basis</p> <p>If sales return > Target level i.e. No Improvement, report to responsible person & Revise / change the procedure of DMAIC.</p> <p>If Sales Return < Target i.e., improvement is achieved, present process should be continued.</p>
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- Cost of Improvement should be compared with benefit to be achieved -cost benefit analysis.

(ICAI-Gujrat Paper, 2019)



CASE STUDY No:- 52

CASE STUDY No: - 3 (Six Sigma) as per regular book

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 returns 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 emphases 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 measures 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 'Costa 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 Methodology of Six Sigma used to Improve existing business Process

SIX SIGMA (BASIC CONCEPT For Case Study)

DMAIC

Define the Process	Applicable for almost all case study (All company, service Provider)																						
(समस्या क्या है) (जब तक समस्या सही से explain नहीं होगी तो हल कैसे निकलेगा)	<p>What is the Req. of Customers?</p> <p>Satisfaction i.e., on time delivery (undamaged BAG) & Quality Goods.</p> <p>Properly packed in box (Min req in manufacture & 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 & opportunity to improve by: -</p> <ul style="list-style-type: none"> (c) Discussion with staff (d) Customer feedback/ complaint 																						
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"> <thead> <tr> <th></th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Difficulty in</td> <td>47</td> </tr> <tr> <td> (a) Assembling /part missing</td> <td></td> </tr> <tr> <td> (b) Poor quality</td> <td>19</td> </tr> <tr> <td> (c) Arrived damaged</td> <td>9</td> </tr> <tr> <td> (d) Bags were no as demanded</td> <td>24</td> </tr> <tr> <td> (e) Late arrival</td> <td>1</td> </tr> <tr> <td></td> <td><u>100</u></td> </tr> </tbody> </table> <p>Sales Return</p> <table border="1"> <tbody> <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>		%	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		<u>100</u>	Country Wise	XX	Product Wise	XX		_____
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3: - <u>Analyze</u> (Detect the root cause of Problem so	<p>Detect the root cause of Problem: - E.g.</p> <table border="1"> <thead> <tr> <th>Problem</th> <th>Possible cause</th> </tr> </thead> </table>	Problem	Possible cause																				
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as to improve that Problem)	<p>Difficulty in (a) Assembling /part missing</p> <p>(b) Poor quality</p> <p>(c) Arrived damaged</p> <p>(d) Bags were no as demanded</p> <p>(e) Late arrival</p>	<p>Poor design, No proper marking, Defect in packing (not user friendly)</p> <p>Lack in manufacturing</p> <p>Deficiency in services by Costs cruise.</p> <p>Defect in manufacturing, not matching with order, inefficiency in staff working.</p> <p>Deficiency in services by Costs cruise.</p>												
		<p>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)</p>												
Improve	Experts take corrective measure, Recommendations to improve process in consultation with staff/based on facts, to minimize/eliminate the root cause of problem.													
	<table border="1"> <thead> <tr> <th>Problems</th><th>Suggestions</th></tr> </thead> <tbody> <tr> <td>(a) Assembling /part missing</td><td>Adequate marking, Packing could be improved by Training to staff (Inspection before delivery)</td></tr> <tr> <td>(b) Poor quality</td><td>Apply Preventive maintenance, Timely repair, Training to existing staff.</td></tr> <tr> <td>(c) Arrived damaged</td><td>Improve delivery system.</td></tr> <tr> <td>(d) Bags were no as demanded</td><td>Apply Preventive maintenance, staff Training, delivery should be match with order.</td></tr> <tr> <td>(e) Late arrival</td><td>Improve delivery system.</td></tr> </tbody> </table>	Problems	Suggestions	(a) Assembling /part missing	Adequate marking, Packing could be improved by Training to staff (Inspection before delivery)	(b) Poor quality	Apply Preventive maintenance, Timely repair, Training to existing staff.	(c) Arrived damaged	Improve delivery system.	(d) Bags were no as demanded	Apply Preventive maintenance, staff Training, delivery should be match with order.	(e) Late arrival	Improve delivery system.	
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- Cost of Improvement should be compared with benefit to be achieved -cost benefit analysis.



CASE STUDY No:- 53

CASE SCENARIO No:- 4 (CASE STUDY DIGEST) Smooth connect of Six Sigma as per regular book

Smooth Connect Telecom (SCT) is the private sector telecom company. SCT is second largest player in telecom sector of country, with subscriber base of more than 10 million. SCT achieved this magnificent growth by acquiring competitor in recent years. SCT deals in fixed line telephone services, corporate services and mobile (cellular) services. SCT is meeting all the requirements from regulator in efficient and timely manner.

SCT is known for continuous innovation in its services, with changing pace of technology and business need like wise use of Optical Fiber Wire and VOLTE (Voice over Long-Term Evolution) etc. This helps the SCT in acquisition of many corporate clients.

The largest player in telecom industry is Voice Telecom, which is resulting company out of corporate restructuring of state-owned telecom corporation. Voice Telecom still own largest market share due infrastructural advantage over other players in the market. SCT is also facing tough competition from Voice Telecom on pricing and customer volume.

Majority of telecom operators, including SCT and Voice Telecom, usually criticized by customers for poor customer services, misallocation of call duration and call drop; but majority of complaints are on account of—

- a) Calculating wrong tariff, and
- b) Dull and delayed response from customer care executives.

Hence by focusing on customer services, if SCT improves its billing process and handles the customer complaints wisely; then SCT can gain competitive advantage over other players including Voice Telecom. In order to improve the quality of customer services, SCT decide to practice Six Sigma initiative.

Required

Enumerate the modus operandi that ‘how SCT can **APPLY DMAIC method to implement Six Sigma**’.

Solution:

Six Sigma was first used by Mr. Bill Smith of Motorola Corporation in 1986 for improvement of manufacturing process & elimination of defects. Six-Sigma seeks to improve the quality of process by identifying and removing the cause of defects (defect can be anything, which lead to customer dissatisfaction). Six Sigma uses quality management and statistical methods with special infrastructure of people. Six-Sigma can be implemented through two methodologies—

1. DMAIC (Define, Measure, Analyse, Improve and Control) - Improve existing business process (remove defect).
2. DMADV (Define, Measure, Analyse, Design and Verify) - Create new business process (defect free).

DMAIC methodology of Six Sigma implementation at SCT

Define – Define the improvement area

Define include definition of customer requirement or problem faced by customer

First and foremost, requirement of is to ensure customer must be billed correctly, because wrong billing may lead to either of—

Delayed revenue – due to litigation for wrong billing

Loss of revenue – due to porting to alternate telecom operator by customer

Customer care executives need to be trained, so that they can guide the customer in most appropriate way and ensure lowest possible wait time to solve customer complaint.

Measure – Existing process for comparison

Existing performance need to be measured

Since performance need to be measured specially in two domains ‘billing processes’ and ‘customer complaint handling’, hence SCT needs to have a system through which it can collect reliable information (likewise number of complaints as percentage of total customers, similarly wrongly billed customers against total customers; is there any process of reissue the correct bill? – if yes –than in how many cases it is issued? and average time to solve complaints) in order to measure existing performance.

Performance is required to be measured against each of critical success factors (which will create value for customer).

Analyse – Cause effect relationship between factors of process

Existing process needs to be mapped in order to determine the root cause of problem

SCT should further analyse the information collected in second point (measure) above for determining the performance, in order to reach to root cause of customer complaints and wrong billing; So that necessary preventive and corrective steps then can be taken.

Improve – Plan improvement on basis of analysis

Existing process need to be improved in order to mitigate the root cause threats

Once the SCT done with the analysis, it has to identify the possible solution to root causes, in order to improve the performance.

Any improvement, which is so ever is suggested; needs to be both feasible from SCT prospective and valuable from customers' perspective.

Improvement can be done by reissue of bill where it was wrongly issued earlier, if already process of revision of bill is in existence than wait time for reissue need to be curtailed.

Control – Continuous control to identify and correct the process variance

Improved processes need to be controlled continually in order to assure enhanced performance shall be maintained

Post improvement in process (issue of bill and handling of customer complaints), the manager who is responsible for such process at SCT need to assure continuous control over the process, so that customer services should create same value for customer and keep them satisfied.

For monitoring, KPI against CSFs can be established and reported on daily basis, likewise number of complaints (especially which remain unresolved at day end) and wrong billing cases. These KPI will also act as early signal to Line Manager or Senior Management.

In order to implement Six Sigma as per DMAIC method, SCT need to form a team of line managers from different processes which need to be improved (or critical from prospective of customer services). Team and implementation project should lead by some senior management person (may be CEO him-self).



CASE STUDY No:- 54

CASE STUDY No:- 5 (CASE STUDY DIGEST):- Welcome Foodies as per regular book

Welcome Foodies (WF) was a small restaurant in and around the busy city of Newtown. The city was located in the banks of river Terresa and was known for its tourism value. The visitors often passed days visiting the prominent natural attractions and the scenic beauty brought them back again. They

also treasured the culture of the town and adolescence of the local surroundings. It was simple down to earth. It was untouched by man-made interventions like infrastructures and celestial buildings. The people down there had the culture of visiting bars and restaurants at the evening time to undo the monotony of the day. They liked sitting with their friends, close relatives and chit chatting their busy schedules and what special they did throughout the day, how things went fuzzy, which ought to have been straightforward. The not so civilized 'life' went calm until the development of a highway that connected Newton city to the "infrastructural sound" city called Angel. In no time, the Newtown found itself crowded and overburdened to accommodate the daily passengers from highway and near surroundings. This made the State government consider the development of infrastructure in the Newton and additional hotels to welcome the growing tourism business. This led to a drastic changeover in the restaurant business of Welcome Foodies.

It started getting busier and was brimming with food lovers all over the day. WF being a family owned and self-funded business took this ambience as a door of opportunities to recover the previous losses it had to book long back at its outset. It was thinking to expand its business and open new restaurants in the town, but the funding was yet a trouble since its credibility was questionable to lenders. WF could borrow just enough funds from its familiars to hire additional staffs to serve the growing crowd. Albeit the new staffs were recruited, they lacked proper skill and knowledge of the service industry that WF was into. Most of the staffs were the local people of the city who knew no fancies of alluring the customers with their smiles and warm heartedness. They had to work overtime for low pays since WF was in debt, paying the peaking expenses of production and processing of food items. Given the rising bills and heightening cost of raw materials, it had to escalate the prices of the items served in the menu card. Notwithstanding the rise, the WF chain was easy on their guests' pockets compared to other posh dine place out in the city and so the customers resisted subtly and then continued to walk in as before.

The operating efficiency of the restaurant began to decline with the increasing numbers, also somewhat perceived by the incoming customers. The owner heard his customers' conversation:

Customer Mike: Hey there how are you doing? Well! I wonder why we have to wait so long when many tables are lying empty. Doesn't the restaurant feel like harassing their customers without any cause? My mood gets ruined for the wait and I plan to seek other nearby places to dine. What about you?

Customer Davin: Yes, you are right. I also feel like claustrophobic having to dine among the proliferating crowd. Hey, guess what, I heard the owner is short on finances and he could hardly do anything to get himself out of this hell, at least not in the near future.

Customer John: The waiting time is ridiculously long. I mean I had to wait 20 minutes on a peak Friday, which I do not mind but here I believe they hardly care to manage this.

The lines got bigger on the Fridays and weekends since the cleaning boy and his partner used old cleaning techniques and were reasonably slow. Several people went ahead and decided to leave rather than wait any further.

The hospitality business demanded unwavering flawless customer service which started to shake. Because of dearth in finances, enough staff could not be placed at required locations which turned things chaotic.

The kitchen environment was not sound either. They used outdated equipment to prepare the food stuff and the manual cleaning of dishes was a big trouble altogether. With the increasing demand for service, no adjustment was made to the number of kitchen equipment. The short number of kitchen staff tried their best to manage things in order, but they could not help to deliver with required speed since they had to clean the equipment manually before every use. The ingredients of the items were not well arranged adding to stress and the wait time of service. Some items like onion garlic paste, boiling of vegetables, chilies, sauces and pickles ought to have been prepared before the

restaurant opened for guests. No such arrangement was in place. Some raw materials were in short supply while some were more than the demand, which perished. There were three chefs in the kitchen each specialized in a given cuisine. However, they were not groomed to switch efforts in times of necessity, they but were asked to do this anyways and the results were atrocious.

Sometimes the guests found their tomato soup containing odd ingredients like mushrooms or potatoes and sometimes the guests so claimed 100 % vegetarian dish was found to comprise fish or chicken remnants. This situation called for significant quality issues on the processing of food in the most unexpected manner one could think of.

Moreover, the lax kitchen staff had the customer request on their table, which they did not accede in the order received. Some orders were served early while some customers kept seating for long time, waiting for their food to show up on the plates.

The billing machine was not modern and cashier had to manually enter price and other specifications of each item ordered and served.

Most of the times, the only supervisor was found snuggling in his chair. He did not care to advice the waiters and other assistant staffs to improve. As a result, staffs persistently made same mistakes and guests were forced to report the complaints to the restaurant manager, who was also the owner. No leadership role was identified among the staffs.

Some staff took leave on weekends and returned on Tuesdays. They lacked motivation to stay during the peak weekends. When any staff was missing from his respective role, the manager replaced the position since he wanted to save on currency.

The hygiene of the place was also questionable. The floors were watery and smelt nasty, the tables seemed to have contained foods, oils and spilled over sauces. The guests carrying their kids were nervous about their small ones slipping over the floor. On a total, it raised concerns about cooking and cleaning habits of the staffs working there, thereby escalating the health risk of the guests.

The business saw its doom and the customers began looking for dining options in the surrounding area.

Consider yourself as the family advisor of Mr. Bean, the owner and successor of his father's business. He is aware that you have a cost management degree and are working in one of the multinational firm's accounting department. Luckily, he has had the chance to hear about your achievements of successfully implementing strategies to assist the firm in rejuvenating its struggling business and now he wants you to work on turning things around for his restaurant business. He had tears in his eyes while narrating the entire story.

Required

- (i) DISCUSS which managerial technique could be used to "turn things around" as Mr. Bean wants?
- (ii) How could this be done? RECOMMEND improvement techniques in each area of disparity.

Solution:

The current situation of Welcome Foodies, a small family-owned restaurant, resembles lot like that of dissociation of staff efforts, unplanned activities and need for reengineering of business activities. The processes there contain lot of known defects that are being continuously overlooked. There are several quality issues as well, not just in some phases of the service but holistically in series of activities. So, when defect is the prime issue to focus upon, we look for total quality management to render the product/ service defect free to ensure the long run success of the business, but here we need to take a step further discussing the roots of the issue rather than just simply working on the

symptoms. For example, long wait time of guests is considered as symptom, while the root cause is disorganized staff team and non-strategic output towards a destined focus, i.e., customers. Frankly, we are talking about Six Sigma strategy to get the changeover done.

While people often relate six sigma methods to manufacturing firms and the industry itself, service industry could very well adapt it pragmatically. The forerunners of the technology were Motorola and General Electric who gave a scientific solution to the all-pervasive quality issue evidenced in the day today businesses. Quality issue in physical product means compromise in the shape, size, color, design, taste, or any other form that reduces its true expected utility. Quality issue in service on the other hand means variation in the customer's standard experience set as per industry norms. Defect therefore means a quality issue that leads to the failure of any product or process. Six Sigma entices one not just to deliver defect free product/ services but also to reduce waste by eliminating errors. The steps involved to improve existing business processes are define phase, measure phase, analyze phase, improve phase, control phase. Now let us see how we can implement each phase to improve the WF's businesssituation.

Define Phase

This is the foundation of other phases of the methodology on which they rest. Under this phase, we identify the processes that need improvement, the goals and scope of improvement. In WF's case, the goals of improving the service process are below:

- a) Exuberating the customers' overall dining experience including reduction of total wait time.
- b) Achieving enhanced staff communication and coordination ensuring unclogged flow of information.
- c) Ensuring the rendering of ordered food items as per description in the menu card.
- d) Kitchen chefs to prepare and process food items as per their skill set.
- e) Reduction of the overall processing time of food items once orders are received.
- f) Resolving hygiene concerns.

Measure Phase

Under this phase, we are primarily concerned with gauging the problem, meaning seeking a quantitative tool to define the problem so that it can be used to measure the current performance.

Moreover, we also need to employ effective data collection techniques to obtain data about the current performance. The success of this phase depends on the validity of the data collected.

We must keep in mind that only when the current performance is quantifiable, we could compare it against the standards to identify the variation. These are the traditional steps to bring about an improvement in any process.

We catalogue numerous basis to measure each issue to be improved as indicated in the goals above.

- a) Number of customers leaving the restaurant for having to wait too long.
- b) Number of unhappy customers not returning back.
- c) Number of complaints reported against staff misbehavior.
- d) Average wait time per customer.
- e) Average food processing time per simple item and per complex item.
- f) Number of accidents due to nasty floors.
- g) Number of complaints against food quality and order mismatch to description in the menu card.

Analyze Phase

This phase involves establishing the root cause of the symptoms palpable in the deficient service process.

In WF, it would be vital to itemize the entire restaurant service processes in the order of their occurrence. This can help firm to look at things in a serial manner rather than taking plethora of activities all at once.

- a) Customers enter the restaurant.
- b) Receptionist greets and asks them to wait in the waiting area until their names are called upon.
- c) Cleaning team clean the tables once the guests are done eating.
- d) Receptionist calls the guests in the order of their arrival.
- e) They enter the dining area, seat on the indicated table, place order of the food items of their choice from the menu card.
- f) The waiters take the order to the chefs in the kitchen for preparing the ordered stuff.
- g) Kitchen chefs prepare and process the food ordered, served on plate, to be taken up by waiters.
- h) Waiters serve the food to the guests and check with them for coming requests.
- i) Waiters keep visiting kitchen and serving stations to get the requested stuff on the table.
- j) Finally, guests finish their dine; request the staffs to furnish the bill of the service.
- k) The cashier prepares the bill, taken to the guests for payment.
- l) Guests pay the bill and leave the restaurant.
- m) Cleaning team again starts the cleaning process to make room for other guests in the waiting area.

In this way, the whole process gets broken down into small sub processes. This is the true effort involved in analyze phase. Once all the activities carried out are identified we need to bifurcate them into value added and non-value-added activities, basically we need to pull the bottlenecks out of the entire process to bring efficiency.

Improve Phase

This phase is all about recommending alternatives and implementing them to resolve the established issues. For example, if the issue at hand is about two cars falling short for picking up the employees to render an effective pick drop facility, the alternative is to employ more buses or cars to do the same. Where the firm is unable to do so, it can resort to third party services who deliver this form of service. It will end up in choosing the alternative that is financially more feasible.

In our case, we can clearly perceive humungous scope of improvement. First of all, we must keep in mind that the effective wait time of customers in the service business is a critical factor for success. The long wait time of customers in the waiting area can be directly ascribed to age old cleaning techniques of the staff. The idea here is to introduce innovative techniques of cleaning the tables such that it takes hardly any time to get the table ready for oncoming guests.

Next it is also evident that staffs of WF are not well groomed and lack appealing strategies to enhance the dining experience of their guests. Organizing frequent training sessions to boost their marketing skills like placid smile and greeting the guests with warm-heartedness; keeping up a continuous check of their requests and fulfilling them on timely basis; making them aware of any special coupon or discount that the restaurant puts up; can all bring a drastic change in the customer's apprehension of the WF's services. Hiring people with supervisory acumen will help staffs to be aware of their scope for improvement and rule out their possibility of repeating same mistakes.

Now let us see what could be done on improving staff coordination. Staffs should be motivated to work as a team rather than on stand-alone basis since it is the combined effort that is representative of WF identity. Any bottleneck in unbound communication should be outrightly removed so that things flow in a streamlined fashion. It is also necessary that WF hire additional staff to meet the growing need of the city such that manager can dedicate himself to the top priority matters rather than playing multiple roles. An efficient reward system should be put in place to ensure each staff's effort in the process is recognized and rewarded for. This will motivate them and push their determination to work productively rather than missing on peak weekends and returning on Tuesdays. If they work with efficacy during their normal hours, the need of overtime would also reduce.

Finance requirements can be fulfilled by building up good creditability among customers such that an effective business plan itself can propel the lender to provide the required finances.

Further, more kitchen equipment will have to be purchased and cleaning techniques have to be explored such that kitchen staff work productively rather than working laboriously. Just three chefs sound like a real short supply of cooks, driving them to prepare things they are not trained for. The WF should adopt strict food processing policies such that chefs are allowed to prepare only cuisines for which they are groomed. This will ensure complying with strict food quality standards to accentuate no compromise in food quality. Moreover, a fixed processing time of both simple and complex items should be specified and it should be the policy of the restaurant to abide by the same.

Organizing kitchen equipment and food ingredients would eliminate the additional time required to locate them. WF can apply 5S methodology here to cleaning out the working area and maintaining the cleanliness to improve process quality. 5S means sort, set in order, shine, standardize, and sustain. WF needs to ensure that no unnecessary items like perished ingredients/food items, old equipment, and old cleaning tools are seating in the kitchen (Sort).

To bring in more efficiency, we must place frequently used items in easily accessible locations and place occasionally used items at bay (Set in order). For example, a veggie sandwich making store can organize its veggie counters near to its ordering and processing center, so that it takes them less time to prepare sandwiches once order is received. Scientific arrangement helps not just in saving time, it also boosts workplace cleaning. With order comes cleanliness in the workplace (Shine). WF should adopt best practices of the industry or make one to be adopted as the constitution (Standardize). For example, in present case, we need chefs to prepare food items only for they are specialized. Monitoring the adopted practices under 5S model is also no less important. This ensures that we can upgrade those practices if situation demands (Sustain).

Prefixing startup items like sauces, pickles and serving them with starters will help eradicate the wait time once guests are ready with their orders. Employing advanced food processing machineries will drive efficiencies and help meet new standards of WF.

The hygiene concerns can be easily dealt with by applying planned and innovative cleaning ideas to clean the dining and waiting area and using sign boards to warn the subsisting guests of the ongoing cleaning process.

Bringing in automatic scanners and advanced technology will eradicate the manual entry of order details and their prices to prepare the bills, thereby ruling out the possibility of manual errors and thefts.

The Control Phase

This phase deals with adequate determination to put into practice the policies developed under the “Improve Phase” and ensure its persistent compliance in the rendering of the service. Once the policies become culture of the people, it would be hard to be discern them without such policies. As part of control phase, the changed performance is measured at regular intervals to establish any variances from the expected standards.



CASE STUDY No:- 55

CASE STUDY No:- 6 (Business Process Reengineering) as per regular Book

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 aspossible*. 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 No:- 56

CASE STUDY No:- 7:- (Business Process Re- engineering)as per regular book

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 Foot ware 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 1CNY=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 ANA'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 reengineering (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) **ADVICE** 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 ($CNY18 \times BND28$) 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 ($CNY28.00 \times 110.10\%$) 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.



CASE STUDY No: - 57

CASE STUDY No:- 8(CASE STUDY DIGEST) as per regular book

Bread and Butter Company (BBC) started its business a couple of years ago down when customers preferred bread to other food items in their breakfast. Today the market has seemingly turned narrow for bread or sandwiches. The high nutrient rich breakfast like corn meal, rice crisps and oats meal are taking over the market share as opposed to bread butter or a simple sandwich which appears to be aged old talks. BBC was about serving the kind of bread their customers wanted. The breads were custom made, ready in no time on order, and delicious, exactly how they need to be. The prices charged for the products offered were on high end since it was the only store of its kind in the area covering 50 kms of east Georgia. Georgians were fond of the unique service offered and the taste filled their morning experience with happiness.

The business prospered and profits increased phenomenally on a year-to-year basis. The prosperity called for additional space and resource requirement. BBC contemplated that since they would have to hire more staff to meet the increasing demand and the space, they were trying to lease was more than what they could use, they planned for add-ons to their current production line "breads and sandwiches". They started selling frozen food items, deserts, beverages, and meals for train passengers. The Bread and Butter Company was now known as "Just Taste It" (JTI). They started to hire new people with flawless cooking skills. There seemed to be more supply than the demand and it appeared that commoners had great cooking talent and were interested to learn more to take it to an altogether newer level. The staffs were welcomed to share their unique recipes and team gathered to prepare items based on the ones selected and approved. The employees started preparing meals on a prior anticipation of demand including excess meals for any stock outs. In a month or so, the warehouse seemed to be a chaos full of raw materials purchased from various suppliers based on suggestions of staffs and prepacked meals. The kitchen was out of space to accommodate the current staffs comfortably. The myriad ideas took JTI in a mirage creating problem in coordination among staffs since many of their ideas had to be dropped and others that were welcomed created a negative cost benefit equation.

The bread and sandwich business was hit by the negative publicity of the train meals business since JTI had to compromise on quality to earn enough profit to keep the meal business up and running. Gradually the loyal clients turned down on them and started to switch to other caterers. The management of JTI was wondering if at all the business should be continued since there were not enough orders and the pre prepared meals are getting wasted thereby burdening the firm with huge costs. The frozen items, desserts and beverage business were the only support they had. Clients continued to buy those items considering frozen items, desserts and beverages were just bought and served to them on a margin. JTI ended up losing customers trust and had no other option but to stop preparing anything for them. They thought of bringing a changeover and presenting themselves as retailers rather than preparers of meals, breads and sandwiches. The management of the company was in desperate need of a savior that could prevent the demise of JTI.

One of the management people, Mr. Juniorson contacted you and approached you for some valuable ADVICE in this regard. He also came up with their income and expenses (refer Annexure) so that you could provide some insights on how to overcome the loss-making situation and rebound back to a prosperous profit earning history.

Required

Consider yourself as a management accountant who was referred by one of the friends of Mr. Juniorson. He has following questions in his mind that clogged all doors of ideas to revive.

- (i) What are we doing wrong?
- (ii) Is there any way JTI could continue its current business?
- (iii) We need to save on costs and regain the lost trust of customers. How do we do this? You see there was no dearth of loyal foodies when we used to sell just breads and sandwiches. Even though we charged high prices back then we never had to confront such predicaments we currently are in.

ANNEXURE

"Just Taste It" Statement of Income		(Amounts in '000)		
		Year Ended December 31,		
		2019	2018	2017
Revenue				
Breads and sandwiches	41,000	45,000	49,000	
Desserts and frozen food	92,000	79,000	68,000	
Beverages	47,000	34,000	30,000	
Meals	77,000	1,20,000	1,34,000	
Total	2,57,000	2,78,000	2,81,000	
Costs and Expenses				
Food items as raw materials	1,10,000	95,000	78,000	
Ready-made frozen	33,455	28,727	24,727	
Desserts purchased	46,920	40,290	34,680	
Beverages purchased	39,048	42,857	46,667	
Labor	40,000	35,000	31,000	
Other operating expenses				
Rent	11,000	11,000	11,000	
Insurance	5,000	5,000	5,000	
Rewards to staffs	5,500	4,000	2,400	
Packaging cost	4,000	3,400	2,800	
Transportation cost for meal delivery	3,500	5,500	6,000	
Total	2,98,423	2,70,774	2,42,274	
Net Income	-41,423	7,226	38,726	

1. Since beverage market was competitive commanding high profit was never an expectation.
2. Frozen items were sold at a markup of 10% on purchase cost Georgian preferred frozen foods and fresh foods equally.
3. Desserts are all time favorite irrespective of seasonal variations.
4. Of the deserts and frozen revenue, 60% sale was dedicated to desserts.
5. 50% labor was identified towards meal preparation, 40% towards sandwich and breads and rest 10% for serving desserts. Beverages did not take labor hours since they could be refilled in self-serving dispensers through which clients were served. Once they served themselves with their choice of beverage, they stood in lines to complete the billing of the service.
6. Of the cost of food as raw materials, only 40% was dedicated to earning bread and sandwich revenue.
7. Rewards to staffs were paid on basis of their recipes being approved.

	Product/ Service Wise Analysis (₹)		
	Year Ended December 31,		
	2019	2018	2017
Revenue from breads and sandwiches	41,000	45,000	49,000
Less: Cost of food items	44,000	38,000	31,200
Less: Labor	16,000	14,000	12,400
Gross Profit	-19,000	-7,000	5,400
Revenue from desserts	55,200	47,400	40,800
Less: Cost of desserts purchased	46,920	40,290	34,680
Less: Labor cost	4,000	3,500	3,100
Gross Profit	4,280	3,610	3,020
Revenue from frozen food items	36,800	31,600	27,200
Less: Cost of frozen food items	33,455	28,727	24,727
Gross Profit	3,345	2,873	2,473
Revenue from beverages	47,000	34,000	30,000
Less: Cost of beverage products	39,048	42,857	46,667
Gross Profit	7,952	-8,857	-16,667
Revenue from meals	77,000	1,20,000	1,34,000
Less: Cost of meals			
Food as raw material	66,000	57,000	46,800
Labor	20,000	17,500	15,500
Other operating cost directly identified	9,000	9,500	8,400
Profit	-18,000	36,000	63,300

Solution:

The idea to expand the business by diversification of product line and adding new products/services like frozen items, train meals, and desserts, delivery of foods to passengers at train were all directed towards growth and a better future for business. This gave an additional edge over other bread manufacturers in the area since the more products offered the more awareness among the customers. However, the manner in which the business was executed seems to lack proper planning and organization which is very much needed for survival of any business. Further a business success depends on the execution of correct strategies meaning doing the right thing at the right time and in the right manner. So, let us see what we were doing and what should have been done.

Manufacturing process in any business is a combination of series of activities, where we need to identify which activities should be chosen and which should be excluded. This calls for application of lean thinking in the conduct of those activities. The concept was originally introduced by producers of a Japanese car manufacturer company named Toyota. They were of the view that to make a production process efficient waste of all forms must be eliminated from such process. They identified those activities as waste which consume resource but are of no value addition from an end consumer perspective, thereby increasing the overall production cost and time.

Basically, they meant that not only the design of the product or the utility of the product but the production process itself should be customer focused. This is possible when we can segregate each activity as value creating and non-value creating activity from customer's view. In order to do this, we need to list all our production/ service activities and then map each activity keeping customers' value in mind. During this mapping, we consider location of each machine, each human resource and the effort required to move resources in order to be at the production location. Then an attempt is made to eliminate all the non-value creating activities listed.

Having enumerated the idea of lean manufacturing, let us see how this could be applied in JTI's scenario. There are number of things that need attention. First of all, the lean thinking is based on just

in time production whereas JTI is producing on prior unexpected demand basis for the fear of stock outs. We must remember that when operating in service industry and that too when dealing in food items, maintaining quality of the food items (considering the perishable nature of some items) becomes the top priority. We must design the production process in such a manner that safety and retaining the nutrition of the foods to be served remains ahead of everything. Customers always desire their foods to be fresh and to contain all the expected nutrition value. In such a situation, pre preparing the meals and storing them is not only a non-value-added activity but also a prolific challenge to the food safety requirement. Thus, going by the lean concept, JTI should prepare meals based on orders received or should pack meals just enough to serve the customers on the same day. This is one of the mechanisms not only to work smart but also to drive two forms of waste palpable in the production process, one is the cost of storing the pre prepared meals and the other is the wastage of prepared food that was prepared in anticipation of stock outs. Preparing fresh food will not only be a better value addition approach from customers' perspective, but it will also boost quality and reinforce customers' trust thereby adding a competitive edge over others.

Next change over required would be to switch the basis of commission paid to staffs. Currently staffs receive commission for the recipes approved irrespective of the cost incurred to JTI in implementing such recipes. Executing any recipes requires assembling of raw materials to prepare the food item, which bears a financial impact on the firm. Purchase of raw materials from various suppliers based on staff recipes and their suggestions have led to huge cost burden on the firm leading to a negative cost benefit ratio. Purchase activity is a significant puller of cost and therefore purchase department is considered as a cost center. Systematic operation of purchase department is highly imperative to control cost and achieve efficiency. Purchase activity should be related to production activity which is a direct factor of demand. Therefore, rather than acting on staff suggestions, purchases should be made based on requisitions from production department which has to operate based on just in time approach. Moreover, it is also felt that staff participation has not been guided in the right manner since it has resulted in more disharmony than teamwork. Rewarding them based on their recipes rather than asking them to redirect their cooking efforts to the financial interest of the firm and to the satisfaction of the customers, sounds an incorrect encouragement. Working at below the optimum coordination levels result in under use of skill and cooking talent which is truly perceived in this situation.

The other issue perceived is the disorganized warehouse due to lack of systematic purchases and over involvement of staff in purchase activity. To achieve maximum production efficiency, building a favorable working environment is utmost necessary. This requires providing cooking staffs with organized clean kitchens and limited access to warehouse. Further limited access to warehouse will help to keep it more organized. Currently it seems storage facilities of raw materials and food items are totally messed up. We need to introduce an effective housekeeping system such that warehouses are organized systematically with all raw materials arranged employing specific techniques like 5S for storage and organization. This will lessen the time required to locate them when on demand thus removing the bottle neck developed due to time consumed for non-organization.

The current business situation appears to lack planning and systematic approach. With a strategized planning focusing customer satisfaction in mind, JTI will be able to continue its current production activity instead of its planned switch over to just retailing activity. When looking at the financial figures, we have five products to focus on. Currently JTI only manufactures two of those and they are breads & sandwiches and train meals. The other three are just purchased and served at a margin.

It should be noted that sandwich business got a hit due to quality compromise in meals business and thus to revive this business, we must not only control quality of sandwiches but also re boost trust of customers in the train meals.

The beverage business is good and requires a little amendment since beverages will have to purchased and served for a margin. So, it is not a cause of much concern.

Now coming to frozen food items and desserts, it is recommended that JTI should make a detailed financial analysis of buy vs. manufacture option considering all the related costs and revenue. In some cases, in-house production of these items has proved more profitable to firms rather than just an outright purchase and service. Moreover, JTI would need to keep in mind the current resources available and the possible resources it could gather provided it decides to switch over to in-house production, given the financial positivity.

For the meal business, as suggested above, the production process needs a complete change over right from the just in time production to systematic purchases and implementing housekeeping system for achieving organized storage facilities. These strides will help to reinforce customer trust in the train meals and thereby rebound the entire JTI business. As we can see that meals business will have to be systematized first so that the sandwich business can see a positive business environment. The meal business is directly dependent on maintaining quality which can be perceived by it turning into a loss-making business of ₹ 1.8 Cr. in year 2019 which used to produce profits of ₹

1.33 Cr. back in year 2017 and ₹ 3.6 Cr. back in year 2018.

Regaining customer confidence is no rocket science for JTI since it had successfully proved its success in past when it was known as the Bread and Butter Company. The company was known for its quality and customers did not resist paying a higher price for celebrating their happiness in the food they want. Due to series of undesired happenings, the focus of JTI shifted from customer, which it needs to bring back. A correct focus can ensure its move in the guided direction.

So JTI needs to perform as per customers' expectation bringing to their table what they exactly want, also ensuring a positive cost benefit ratio for the firm. It requires reengineering of the way they currently work. This is the key to turn things favorable and ensure business success irrespective of what industry we choose to operate in.

For cost saving strategies, JTI needs to associate some direct cost to the revenue it earns. For example, commission paid to cooking staff should be based on the customer satisfaction which is key to increased revenue in service industry. We can keep a control mechanism for this. Asking the customers to rate their experience with the food and the staff service would help the firm to improve with the changing needs of customer and rate and reward their staffs. This will ensure that the firm incurs costs towards generation of revenue. We also need to know what kind of transport mechanism is used to deliver the meals to customers on train. To save transportation cost, it is better to use in-house transportation vehicles rather than outsourcing the activity. This will ensure timely and responsible delivery of meals at reasonable cost to the firm. Further we must not forget that redesigning the meal preparation process will call for less storage and therefore less packing. This will save significant packing costs.



CASE STUDY No:- 58

CASE STUDY No:- 9 (CASE STUDY DIGEST) as per regular book

DIC is one of several insurance companies which offer insurance policies covering general risks relating to individuals and his/her family members. Since past three years DIC has seen the volume of business increase, but profits have remained static due to declining margins. Cost efficiency is a major factor in the success of the companies in this industry, because competition within the industry is high.

Some of the processes within DIC are computerised. However, many of the processes which involve communication with customers are still paper based. Responses to telephonic queries from customers involve paper-based communications. Additionally, sales staff visits potential customers in their homes

to try to sell them insurance policies for their homes and their possessions. These transactions are again paper based. This process is often slow and has led to complaints from both customers and the company's sales staff. DIC has also been receiving regular complaints from current and potential customers about errors in the paperwork that they receive. The number of complaints is increasing day by day.

The Board is worried about growing popularity of new style of business using the Information Technology. The Board intends to streamline the business model as much as possible, re-engineer the business processes and to increase the profitability of the company. It was finally decided that there is a need for a Business Process Re-engineering (BPR) programme to be conducted and the Board has asked the management accounting department to help with the planning and implementation of the programme.

DIC intends to computerise fully, all of the work done. However, while some members of the staff are welcoming the BPR programme, others have expressed concern about business process reengineering and its implications for them.

Required

- I. How BPR can be implemented? ADVISE.
- II. DISCUSS the improvements that might be expected from introducing BPR.
- III. RECOMMEND, performance targets which DIC could introduce to ensure that the re-engineered processes enable it to achieve its key business objectives.
- IV. Why DIC's staff might be concerned about BPR and its implications for them? EXPLAIN.

Solution:

- i. To implement BPR, firstly, each business process of DIC needs to be divided into a series of processes. Then each business process requires to be documented and analysed 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 remain; require to be re-engineered/re-structured, so that can be as efficient as possible. For DIC, technology should be introduced to improve these processes. However, DIC must ensure that the statutory compliances regarding these processes are not undermined.

DIC is facing a hyper-competitive marketplace where customers expect superior benefits. BPR activities would help DIC in understanding those processes which DIC's customers value the most and remove those that are not valued. 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.

(ii) Improvements expected by implementation of BPR

Fast information processing and error reduction – The processes at DIC have not been updated to take advantage of the Information Technology systems that are widely available today. In particular, relying on a predominantly paper-based system makes DIC's processes much slower than they need to be and it also increases the chances for errors as information is manually recorded and then transferred between departments. A new electronic database-led system is the need of the hour, where any information can be entered into the central database on a real time basis, and the system can then be continually updated for other staff to use. Therefore, no paper-based transfers of information will reduce delays in systems and reduce the risk of errors occurring.

For example, if an enquiry is received over a telephone, staff can access the database and gather all the relevant information of that particular customer. This faster response time and error free feedback should lead to improved customer satisfaction.

Better facilities for salesperson – Having an online real time database and improved technology might also help the sales staff when they visit potential customers. If the salesperson can access the database remotely from their laptops, they can get every minute detail of policies and premiums and so could potentially make a decision about a policy application then and there. Thus, speeding up the process should directly address the complaints of slow processing of files.

For example, If a sales person goes to sell the X policy to the potential customer, however if the customer is interested in Y policy, the same can be accessed immediately online.

Motivating staff leading to overall improvement – The advance technology provided to the salesperson will not only encourage them to do their job more effectively, but it will also motivate them. Moreover, customers are likely to have a more favourable impression of the salesperson if they provide a quick and efficient service more importantly which is error free. This, in turn, will lead to the salesperson making more sales and likely to increase their motivation still further. Therefore, leading an overall improvement.

Parallel processing – The paper-based nature of DIC's current system means that tasks have to be done sequentially. However, one of the principles of BPR is that linked activities should be conducted in parallel rather than sequentially. In this case, if DIC improves its Information technology systems and stores customer details digitally, staff may be able to deal with different aspects of a customer transaction in parallel, thereby speeding up the transaction process.

For example, if a customer wants to pay premium for its existing policy at the same time wants to enquire about a new policy, both can be done.

(iii) Key business objectives

The areas of concern of DIC are reducing the time taken to process transactions and improving the quality of the paperwork and so it is likely that it will have business objectives relating to these areas.

DIC should have performance measures looking at these areas, in order to assess how well the re-engineered processes have helped to improve performance in relation to them.

Performance targets

Speeding up the process

The slow speed of the current process is a major source of complaints; therefore, DIC desires to speed up the process. Slow work pace can be among the most difficult problems to resolve unless organisation(s) have standards or goals against which to compare actual performance. 'Number of transactions completed within a given time needs to be measured'. For example, Data entry people may be expected to process so many entries each day from the paper-based data however on real time data entry this task will be done immediately without any delay. In changed environment, performance can be measured by computing various metric such as number of policies issued on time, number of transactions completed successfully, number of claims settled on time.

Error free Work

The impact of errors may be in increased cancellations or lapses, financial compensation payments to customers, and a poor market image leading to reduced sales and market share. Reducing the number of complaints about errors in paperwork should be the main motive. One of the key aims behind the BPR exercise is to help DIC reduce the number of errors in the paperwork which a customer receives. Setting a target to reduce the number of complaints about errors will help to achieve its key objective. Target could include a percentage decrease in complaints, lapse rates, or cancellations, an increase in business growth.

(iv) Perception of BPR programmes

Generally, people are not susceptible to change. Although the main aim of BPR programmes is to increase business efficiency, there is often a general perception that organisation just wants to do some cost-cutting exercises and this could lead to redundancies or could threaten jobs and prospects. It is likely that this is a major reason in DIC behind the staff's concern.

Resistance may be encountered from the staff as they are concerned about the change and are uncertain about their jobs in near future.

Even if the programme does not actually lead to redundancy, the fact that it will result in the fundamental redesign of business processes is still likely to lead to significant changes which affect staff. For instance, BPR may lead to new patterns of work, changes in people's roles or changes in the composition of work teams or may bring changes in the pattern of working. This uncertainty about how the programme could affect them is likely to make staff concerned about it and may lead them to resist it. Resistance may be exacerbated because the out-of-date processes are likely to have been in place for quite some time and have therefore become ingrained in the staff. This ingrained habit needs a change, which is not acceptable by the staff.



CASE STUDY No:- 59

CASE STUDY NO: 10 BASED ON 5S as per regular book

Y& E Chartered Accountants offers a wide range of specialized, multi –disciplinary professional services that meet the immediate as well as the long-term business needs of clients. One of partner 'E' was upset with office documentation. 'E' argued that a document management solution is needed to maximize efficiency within the firm. The senior partner 'Y' has recently attended a seminar on lean system and heard the '5S'. He said that old files hide the key files from the eye and forces staff to ask which to use.

Accordingly, he desires to implement '5S'.

Required

ADVISE on implementation of '5S' in Y & E.

Solution:

Office processes often have huge amounts of paperwork and this not only makes processes slower but also allows errors to be introduced. 5S is a method of both cleaning out the working area and maintaining the cleanliness to improve process quality. The 5S process is based on:

Sort (Seiri)

This is sorting and removal of unnecessary files, papers, books and documents in the work area. Sorting is designed to make the work area neat, organized and arranged so that relevant items can be found easily. If an item is not relevant for the work, then it should not be in the work area.

Set in Order (Seiton)

Set in order means systematic arrangement of things i.e., arrange all necessary items into most efficient and accessible arrangement so that they can be easily be identified for use. It is advisable to have proper indexing of files and proper documentation i.e., proper index should be made and pasted on each file about its contents and in that pattern of contents, documents should be kept inside the files so that specific document can easily be traced and withdrawn on time. Even inside cupboard, paper of indexing about files with its name should be pasted so that specific file can easily be traced. Same can be done w.r.t. folders in computer, right file should be saved in right folder with identifiable name so that anyone can easily find any file. Frequent use items should be close by and infrequent use items can be further away in a central area. All storage areas should be clearly labeled to allow items to be put in the correct place, e.g., where did I leave the office stamp again?

Shine (Seiso)

After sorting and simplifying, it is necessary to keep the work area clean and safe. Shining is also an inspection process for the area, i.e., is everything in good condition. It is desirable to involve employees

for 15-20 minutes each day to clean the work area so that they can have the habit of cleanliness. In the same way, unimportant files either in desktop or any driver should be permanently deleted.

Standardize (Seiketsu)

A clean and tidy work area allows the process to be standardized and examined for quality or process improvements. Best practices are documented and rolled out across the work area, standards and process measures are established and displayed in the work area.

For example, red file can be standardized for very important files (can be required anytime), green file for important files and yellow file for unimportant files.

Sustain (Shitsuke)

It means to maintain discipline; this can only be achieved by auditing work areas and processes to make sure that the 5S standards are maintained. It is worthwhile to apply 5S standards continuously i.e., daily basis and check for any up gradation if needed, so that firm can have good management in terms of documentation, cleanliness, time saving of partners as well as clients.

Overall, 5S in offices streamlines the work (low to reduce errors as well as improving process times) and employee satisfaction.



CASE STUDY No:- 60

CASE SCENARIO No:- 11 (CASE STUDY DIGEST)-5S as per regular book

Toys Limited manufactures toys and games for the children in the age group 6 to 14 years. They have recently shifted to STEM i.e., Science, Technology, Engineering and Mathematics learning approach. The major games under this category are DO IT YOURSELF (DIY) Kits. Each kit is designed with a specific learning objective. This kit comprises of all the elements which are essential to build the specific project. The number of elements in a kit range from

200 to 350 elements. There is an instruction booklet in the kit which guides the user throughout the project. The users can also use the video support which is provided with specific user login.

In last two months, the customer support division has reported a major increase in the consumer complaints. A critical study revealed that the major complaints were under the category "missing elements" in the kits. Further study revealed that most of these complaints were for the products which had some common elements in the kits. On the other hand, the customer feedback and reviews have been very positive on the "quality of the elements" provided with the kits.

Since innovation is the core competency for this game industry, the company has a dedicated Research and Development team which focuses on three areas-

- a) Identification of new learning techniques
- b) Development of new games
- c) Upgradation of existing games

Under the current system, the games are sold online. The final product is delivered from the central warehouse located in Bangalore. The company holds a minimum inventory of the games at the central warehouse.

The manufacturing facility is located in the industrial area which is around 50 kms from the Central Warehouse. The production plan is based on the demand as per the instructions from the Central Warehouse. The Chief Quality Officer is responsible for the quality of the product right from the procurement of the raw material till the final product is delivered to the customer.

The CEO has called a meeting of the heads of all the departments and suggested them to implement of Lean Management and integrated the same with the innovation in the organisation. After a series of brainstorming sessions, they have agreed to implement 5S lean management system.

Required

ADVISE on implementation of 5S in Toys Limited.

Solution:

The current problem emphasises on “missing elements” in the kits as one of the major reasons of customer complaints. This highlights that there are issues related with workspace organisation. The positive feedback on the “quality of the elements” reflects that the production related process is robust. Considering the above two factors, Toys Limited is required is to maintain high quality work environment. Therefore, the 5S concept should be used. 5S explains how a workspace should be organized for efficiency and effectiveness by identifying and storing the items used, maintaining the area items, and sustaining the new order. The 5S lean management system comprises of the five S's Sort, Set in Order, Shine, Standardize, and Sustain.

Sort

This will focus on identifying necessary elements of the kit, remove the unwanted items and ensure that all the elements of a particular kit are available. The unwanted items can be provided with RED FLAG so that these can be removed at the earliest.

Set in Order

It will ensure that the elements of the kit are placed at the properly allocated space for the kit. It will also help in assigning fixed places and fixed quantity of elements at each space. It is always recommended to have it compact so that it is easy to access.

Shine

One of the reasons why elements might be missing would be mismanaged and untidy workplace. Shine aspect of 5S focuses on keeping the workplace clean on regular basis, and also ensuring it is easy to work at the particular workplace. It focuses on keeping tools and equipment clean and in top condition, ready for use at any time.

Standardise

The best practices of the particular work area are standardised. The focus is on maintaining high standards through orderliness and as per the required quality and quantity. This includes steps which make it easy for everyone to identify the state of normal or abnormal conditions. This can be achieved by placing photos on the walls, to provide visual reminder about the elements properly placed in the kits.

Sustain

For a long-term success, it is important to sustain the set standards and processes. This involves establishing and maintaining responsibilities amongst the team leaders and members. Ensure that members follow the rules and it becomes a part of their work habit. There should be periodic audit and review of the process for early identification of any issues.

Considering the above aspects of 5S lean management system, its proper implementation will strengthen the way the kits are being packaged and will ensure that the issue of missing elements can be brought down significantly.



CASE STUDY No:- 61

CASE SCENARIO No:- 12 (CASE STUDY DIGEST)- as per regular book

A-One Automobile is manufacturer of Motor Bikes. A-one is based in a country which recently became liberal and global economy. Hence till the time, when businesses in country was controlled by

government and the government, in order to maintain price and domestic demand, regulates the market to maintain the uniformity in the prices determined by the entities.

The country is large enough with widespread populations with high density; there is high demand for motor bike as large population of country is in the age group of 18-24 years. A-one automobile enjoys reasonable market share. The new government in country believes in deregulating markets and allows the imports of foreign motor bikes.

Management team at A-One acknowledge that it utmost needs to make changes to its process in order to respond the competition from foreign manufacturers. Further, A-One's Motor Bikes are now being seen as expensive product in comparison to the foreign competition, because A-One motor bikes are costly. Currently, finance department uses traditional standard costing and budgetary variance analysis on the basis of standards set semi-annually in order to monitor and control production activities. Management at A-One plans to improve its performance through the use of Kaizen costing.

Required

- (i) RECOMMEND key changes significant to A-One's traditional costing system to support the adoption of 'Kaizen Costing Concept'.
- (ii) LIST the impact of implementation of the Kaizen costing approach on the employee management at A-One.

Solution:

(i)Key changes to support the adoption of 'Kaizen Costing Concept'–

Kaizen Costing implies that small, incremental changes routinely applied and sustained over a long period, results in significant improvements. It aims to involve workers from multiple functions/ levels in the organization to work together to address a problem or improve a particular process. In other words, it is a costing technique to reflect continuous efforts to reduce product costs, improve product quality, and/or improve the production process after manufacturing activities have begun.

Adopting Kaizen costing requires a change in the method of setting standards. Kaizen costing focuses on "cost reduction" rather than "cost control". It emphasizes on small but continuous improvement. Targets are updated continuously to reflect the improvement that has already been achieved and that are yet to be achieved.

The suggestive changes which are required to adopt Kaizen Costing concepts in A-One are as follows:

Cost Control System to Cost Reduction System:Traditionally Standard Costing system assumes stability in the current manufacturing process and standards are set keeping the normal manufacturing process into account thus the whole effort is on to meet performance cost standard. On the other hand, Kaizen Costing believes in continuous improvements in manufacturing processes and hence, the goal is to achieve cost reduction target. The first change required is the standard setting methodology i.e., from earlier Cost Control System to Cost Reduction System.

Reduction in the Periodicity of Setting Standards:Under the existing control system followed by the A-One, standards are set semi-annually and based on these standards monthly variance reports are generated for analysis. But under Kaizen Costing system cost reduction targets are set for small periods say for a week or a month. So, the period covered under a standard should be reduced from semi-annually to monthly and the current practice of generating variance reports should be reduced to a month or a week.

Participation of Executives or Workers in Standard Setting: Under the Kaizen Costing system, participation of workers or executives who are actually involved in the manufacturing process are highly appreciated while setting standards. So, the current system of setting budgets and standards by the finance department should be changed.

(ii) Impact of implementation of the Kaizen costing approach on the employee management-

- **Role of Employees** –The relation between management and employees, apart from role of employees will change drastically, because under any system of costing, employees are seen as cost centre and real cause of problem, but in kaizen costing employees are seen as solution provider.
- **Implementation aspects of Kaizen** –It may be possible that at time of implementation of Kaizen due to change in role of employees, they may be not self- motivated to command, control and suggest possible improvement themselves. But this is sure that after reasonable time Kaizen system will increase staff motivation through empowerment.
- **Changes in Culture** –From government regulated culture to employee self- empowered work-culture, will be dramatic change for A-One. Under Kaizen employee group will be assigned with power to make continuous changes rather than just executing the changes approved from management.



CASE STUDY No:- 62

CASE STUDY No:- 13 (TOTAL PRODUCTIVE MAINTENANCE) as per regular book

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 loses 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.



CASE STUDY No: - 63

CASE SCENARIO No:- 14 (CASE STUDY DIGEST) as per regular books

Dewar Bikes (DB) is large national bike manufacturing company established in the year 2003. The company has a strong position in the market and has also traditionally achieved a good market share however facing tough competition. The Board of DB recognises that it needs to make fundamental changes to its production approach in order to combat increased competition from foreign manufacturers. DB is now being seen as non-lucrative, pollutive and with less safety features in comparison to the foreign bikes. The Board plans to address this by improving the quality of its bikes as well as financial performance.

The components are sourced directly by DB. Suppliers are located worldwide. Suppliers are evaluated on an ongoing basis, including an assessment of whether to utilise new or alternative suppliers to improve capacity and performance. The company is having lot of components piled up in stock and few of them are becoming obsolete. There is lots of reworking as both internal and external failure are more, so the wastage of resources in reworking needs to be controlled. The Board is convinced that Lean Manufacturing is the best approach to be adopted.

In DB, production process is grouped by function and production teams comprised a number of permanent members, who had acquired their positions through seniority and a few newly selected specialist staff who had yet to discuss their position in any team.

The process of making a bike can be roughly divided into stamping, welding, painting, assembly and inspections, which takes about 11-12 hours in total. The standard time to manufacture a similar bike in industry is 8-9 hours. The nature of end product demand is unstable due to economic factors. However, DB forecasts demand based on its internal policies and historical trends. DB sells its bikes in retail stores located in over 10 metro cities. It focuses on building close relationships with retailers, working with them to sell its bikes in a compelling manner.

Enclosed Annexure

Required

You are newly appointed to Management Accounting Department of DB, Chief Management Accountant asked you to draft a report for CEO, containing—

- I. ANALYSIS of quality costs and ADVISE on two measures to reduce the non-conformance cost,
- II. ADVISE on implementation of just-in-time purchasing and production.

Annexure

Statement Showing 'Total Quality Costs'

Particulars of Costs	₹
Prevention Costs	
Supplier Review	2,50,000
Appraisal Costs	

Equipment Testing ($\text{₹}36 \times 1,600$ hrs.)	57,600
Internal Failure Costs	
Down Time	15,40,000
Manufacturing Rework ($\text{₹}456 \times 3,200$ bikes)	14,59,200
External Failure Costs	
Customer Complaints ($\text{₹}70 \times 2,000$ hrs.)	1,40,000
Warranty Repair ($\text{₹}3,120 \times 2,600$ bikes)	81,12,000
Total Quality Costs	1,15,58,800

Solution:

Report

Addressed to:

Office of CEO,

Dewar Bikes

Dated –06th May 2020



CASE STUDY No:- 64

CASE SCENARIO No:- 15 (CASE STUDY DIGEST)- JIT as per regular book

Surmount Cable Cars (SCC) engaged in assembly of cabin used on ropeways. In order to assemble cabin, 3 major parts of different shapes and sizes are used. These parts are assembled with help of specially designed dome nut and bolt made of brass (Product Code – Brass DIN 85), which are manufactured by Reliable Hardware and Metal Works. Plant layout design of SCC comprises assembly line, where multiple products are assembled at one point of time. Hence there are multiple workers, who are using such nut and bolts simultaneously. Such nut and bolts come in set along with washer and all three spares collectively consider as set.

Since the plant facility of SCC is situated in remote area hence majority of worker are either unskilled or semi-skilled and literacy rate is also low among workers. This causes variety of problems including not informing production supervisor, about the re-ordering of such (Brass DIN 85), a class of store and spares items. Due to ignorance in workers towards understanding of the stock levels and their relevance, many a times stock of such spares ordered later than it should be, hence got out of stock. This further leads to stock out situation in some of the cases, which result in contribution loss.

Reliable Hardware and Metal Works (RHMW) is long standing supplier of Brass DIN 85 to SCC, hence reliable in term of both quality and delivery time. RHMW took single day as lead-time to deliver the re-ordered quantity. Despite the reliability of supplier SCC wish to maintain safety stock equivalent to 3 (three) days consumption for production facility. SCC is using latest version of SAP as enterprise resource planning, which is installed just 3-4 month back. Employees are being trained to use the respective modules of SAP and integration among various function/modules is ongoing.

Plant of SCC works for 6 days in a week and during a week period 1,200 units of Brass DIN 85 is required for production. Consumption of Brass DIN 85 in order to assemble the cabin cars are constant through-out the year. SCC during first phase of its drive to implement lean manufacturing, is working on its operational efficiency and tries to reduce inventory by introducing a Kanban system.

Required

- (i) EXPLAIN the Kanban in inventory management for entity like SCC? Also, EXPLAIN Kanban be applied to non-manufacturing entities?
- (ii) CALCULATE is Kanban size and number of Kanban required in case of SCC?

- (iii) LIST the factors to be considered and specific precautions/pre-requisites, prior to SSC took task of applying Kanban system.

Solution:

(i) Kanban system is a visual signal-based workflow management technique. Taiichi Ohno an industrial engineer, developed the first Kanban system for Toyota automotive in Japan.

Kanban in inventory management

Kanban can be used in pull system of inventory, where supplier supplies the material based upon consumption. Kanban (a yellow line, originally used in Toyota) is visual cue to worker (may be unskilled or even illiterate) to understand that further material is required. Kanban reduce the cycle time and enhance the predictability, in order to promote value to customer. Kanban system hold specific amount of material (divided in Kanban Size). Kanban system also maintain information regarding quantity, storage location, vendor and details on product/part.

While calculating Kanban size and number of Kanban required following assumption need to be taken—

- Consumption is constant throughout the period; else smoothing factor need to be used in calculation of Kanban size.
- The supplier will deliver material directly to the point of use area (assembly line) and
- Requirement in term of space to store number of Kanban is met.

Kanban in non-manufacturing facilities

Kanban originally designed for manufacturing entities but can be applied to non-manufacturing concern as well, for smoothening of workflow rather inventory management. In Kanban, signal based dashboard is used to manage and improve the flow of work to be followed and also categories the work into to do, on-going and done (in some of cases backlog category also be added).

(ii) Kanban Size and Number of Kanban

Kanban Size can be calculated using formula i.e. $(C) \times (LT) \times (L) \times (SF)$

Whereas C stands for consumption,

LT stands for lead time (Note – Lead Time should be in terms of consumption pattern means if consumption is considered for week/s time then lead time shall also be considered in term of week/s)

L stands for location of Kanban (Note - When so even any entity implement the Kanban then keep one container of material at both the location (entity it-self and supplier), hence L is 2 unless otherwise provided)

SF stands for smoothing factor, which is used to set-off seasonal variations in consumption; obviously if consumption and level of stock throughout the period remain same then smoothing factor can be one.

Calculation of Kanban Size

C – Consumption per day is 200 i.e., 1,200/6

LT – Lead time is 1 days

L – Locations are 2 (RHMW and SCC) and

SF – Smoothing Factor is 1

Therefore, the Kanban Size is $200 \times 1 \times 2 \times 1 = 400$ Units in each Kanban. Note – EOQ can also be practice as Kanban size

Number of Kanban depends upon the maximum quantity of inventory which comprises of demand/consumption during lead period and quantity of safety stock. It can be determined using

following formula—

$$\text{Number of Kanban} = \frac{\text{Quantity of safety stock} + \text{consumption during lead period}}{\text{Kanban Size}}$$

Kanban Size

Calculation of numbers of Kanban

Quantity of safety stock in given case is 3 days \times 200 (daily consumption) i.e., 600 Consumption/demand during lead period is 1 days \times 200 (daily consumption) i.e., 200 Therefore, maximum inventory under Kanban system is 800 i.e. (600+200)

Number of Kanban is 2 i.e., 800/400

(iii) Factors to be considered and specific precautions/pre-requisite to Kanban system

Kanban try to smoothen the workflow process by ‘visualise the flow of the work, reducing WIP, managing process, making process policies explicit, incorporate feedback and using scientific techniques’. In order to do so, while applying Kanban system SCC need to consider following factors—

- 1) Will supplier ready to supply material in the lot size equal to Kanban Size?
- 2) Will supplier participate in pull system of inventory and agree upon Kanban Stocking program? – reliability on supplier.
- 3) Will supplier agree to supply material directly at point of use i.e., assembly line?
- 4) Is the consumption pattern comprising significant variations or constant throughout?
- 5) What is requirement regarding handling and storage of material?
- 6) Contribution margin on sale of product in which raw material is used.

Note – these factors have major impact on calculation of Kanban size as well. Some specific precautions for SCC

Since the workers are unskilled and literacy rate is low among them hence it is needed to be assured that worker must understand the visual cue. Training can be provided to them.

Demand/Consumption need to be predicted with reasonable assurance in order to implement Kanban, although one thing, which is in favour to SCC is that it knows the consumption of Brass DIN 85 is constant throughout the period.

SAP which is used as ERP system in SCC, need to be integrated with suppliers system in order to practice pull system of inventory and various modules of SAP need to be tightly integrated.



CASE STUDY No:- 65

CASE SCENARIO No:- 16 (CASE STUDY DIGEST) as per regular book

Shakti Automobiles Limited (SAL) is a leading battery-based e-rickshaw manufacturing firm, under brand ‘Shah Swaari’ in three models – Super, Star, and Speed. SAL started this business around 5 years back when it was only manufacturer of such e-rickshaw. SAL manufactures all assembly components themselves, irrespective of fact that these components can be acquired from market at a cheaper rate. Major component of total costs in manufacturing of such e-rickshaw is variable in nature. Company was performing well, earning reasonable and enjoyed large market share up-till two years ago majorly due to first mover advantage. But due to increasing competition as new entrants coming into market and rough macro-economic conditions, market share starts shrinking; resultantly profit starts declining. If no major steps taken, then company may run into red in year to come.

Mr. Pillai, CEO attended some workshop last week, where he learned about the lean management and techniques of cost management. He asked Mr. Reddy, Chief Management Accountant to report on underlying reasons behind current performance with available set of possible solutions. Mr. Reddy immediately convened a meeting of top ranked officers, which is chaired by CEO, at meeting.

Mr. Swami, VP Marketing mentioned that it is difficult to maintain same level of sales in upcoming years because price of Shah Swaari is much higher than price offered by all the competitors in market. Quality and features of other are also similar.

Mr. Dutta, Customer Relation Officer also supported Mr. Swami and said that the popularity of their product is declining, he quoted that he receives lot of complaints from buyers in e-mails and tele-calls due to manufacturing defects, which arise in product within a month period of purchase and frequency of such calls and emails have increased in recent years. He also mentioned that in some cases, customer reported that assembled part did not belong to model they purchased, and some customers say, assembly is not as per specification provided.

Mr. Sodhi, Head Workshop & Repairs agrees that the repair issues in case of recently sold vehicle have been increased.

Mr. Murthy, VP Production & Operations who recently joined the SAL replied, firstly large percentage of worker are unskilled; secondly due to large amount and categories of raw materials, dumped by store at production floor; that's too well prior to need. These two reasons cause worker fails to differentiate among parts which appear similar. He also mentioned entire business process, especially production process is quite old and contains certain activities which are purely unnecessary, he also highlight importance of industry 4.0 and give stress on business re-engineering through artificial intelligence, machine learning, etc.

Mr. Naidu, VP Purchases immediately responded about economics of discount involved behind purchase of large quantity and also mentioned buying too less may lead to stock-out situation.

Required

You were also presented at meeting as deputy to Mr. Reddy. Post meeting you came back to your desk and start working. Mr. Reddy called to you to his cabin, on reach to his cabin; he asked you to prepare draft of report (ADVISE) seek by CEO; and meet him with copy of draft after half an hour from now.

Solution:-

Report

Addressed to:

Office of CEO,

Shakti Automobiles Limited (SAL). Dated – 19th Jan 2021

Report on underlying reasons behind current performance and Lean Management, Cost Management tools

First reason behind weak financial performance is highlighted by Mr. Swami i.e., Price of SAL's Product Shah Swaari is much higher than price offered by all the competitors in market. Quality and features of other products are also similar.

Target Costing as cost management technique can be applied. Since market condition are stiff and bargaining power of customers is high due to multiple competitors, and these competitors are selling the product at price lesser than price offered by SAL. Hence, price offered by such vendors should be considered as 'Target Price' and after reducing 'Target Profit' from same 'Target Cost' can be identified. Production, operations facilities along with product need to be reengineered to achieve such 'Target Cost'.

Second reason is that SAL manufactures all assembly components themselves, irrespective of fact that these components can be acquired from market at a cheaper rate.

Relevant cost of both, 'Make or Buy' needs to be compared. As mentioned, that major component of total costs in manufacturing of such e-rickshaw is variable in nature, hence, such major component of costs can be controlled if SAL buy the all the components instead of Making them.

Only those products need to be made in house whose variable cost of manufacturing is less than market price and vice versa.

Third and major reason is popularity of their product is declining, this is evident from declining in market share and lot of complaints from buyers in e-mails and tele-calls for manufacturing defects.

Since these defects arise in product within month period of purchase. Hence, product needs to be looked at. Further, some of cases customer reported that assembled part is not belonging to model they purchased and some customers say assembly is not as per specification provided. Hence, quality is needed to be ensured in the product delivered.

One of way to look at 'Quality' is conformance to need of customer, to ensure same Total Productivity Management/ Total Quality Management supported by Six Sigma need to be applied as part of Lean System Management.

Total Quality Management is management of entire process, including planning process, to meet customer's requirements. PRAISE analysis can be used in order to achieve improve quality.

Using DMAIC (Define, Measure, Analyse, Improve and Control) methodology of Six Sigma, existing business process can be improved to ensure customer satisfaction, reducing cycle time and reduction in waste also.

Fourth reason being large percentage of worker are unskilled. Each worker should be provided with requisite training. Though Kaizen, workers should be involved into improvement of existing process so that they become able to address small problems or improve a process.

Fifth and second major reason is large amount and categories of raw materials, dumped by store at production floor; that's too well prior to need. This reason may be root cause of one of complaint by customer that assembled part is not belong to model they purchased.

JIT can be implemented as part of lean system. JIT is pull system of production, with single piece flow after considering takt time. In JIT, production facility needs to be integrated with vendor system for signal (Kanban) based automatic supply which depends upon demand-based consumption. Under JIT system of inventory storage cost is at lowest level due to direct issue of material to production department as and when required and resultantly less/no material lying over in store or production floor.

Note - Takt time is the maximum time to meet the demands of the customer, this will help to decide the speed of/at manufacturing facility. Heijunka can be applied in order to reduce variation between takt times over the production.

Cost benefit analysis of 'reduction in storage cost along with opportunity cost saved' and 'increase in ordering cost, purchase cost along with stock-out cost' need to be made.

Sixth reason for low performance is old established businesses processes, especially production processes and contains certain activities which are purely unnecessary.

Value Analysis needs to be applied in order to ensure maximum value to customer by eliminating activities which are not value generating, this will control cost also, that's too strategically.

Process Innovation and Business Process Re-engineering can also be applied. Re- engineering is rethinking and radical design of business process in order to achieve improvement. It will help the SAL to keep them at par with changing technology by synchronization along with redesign, retool the business process.

Further details can be tabled on requisition basis. Closure of Report

Mr. Reddy,

Chief Management Accountant (For Management Accounting Division)

Shakti Automobiles Limited



CHAPTER 4

Cost Management Techniques

CASE STUDY No:- 66

CASE STUDY No:- 1: EMA as per regular Book

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 cut back 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

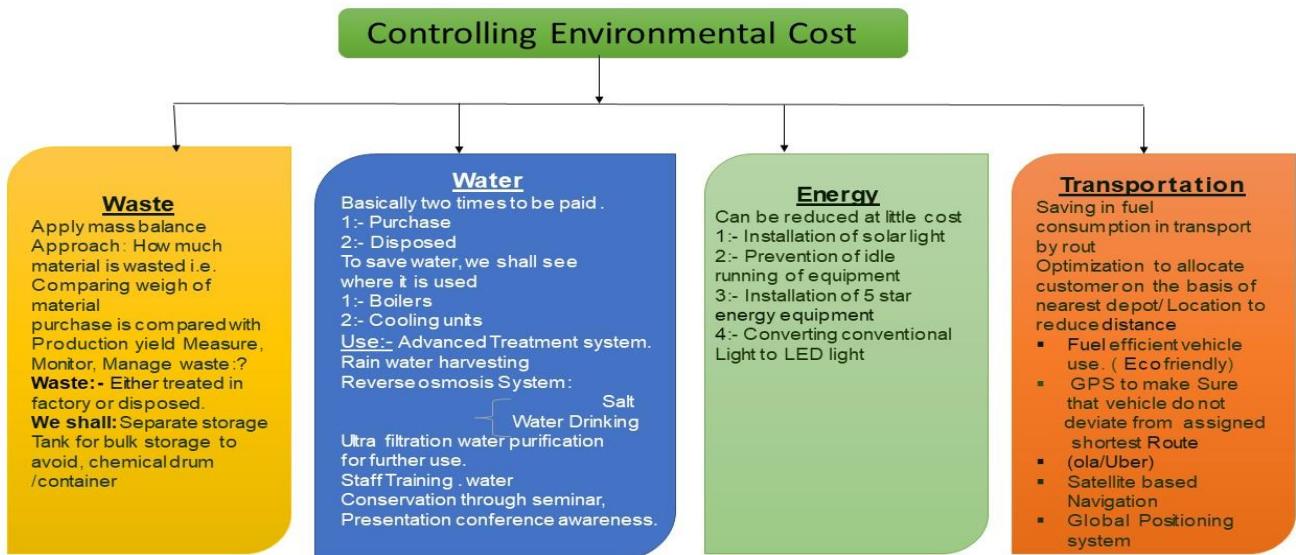
Refineries ‘refine’ crude oil in massive quantities, to produce the fuels need. There should be continuously monitoring on optimum utilization of crude oil to improve gross refining margin. The gross refining margin is the difference between the total value of petroleum products coming out of an oil 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:- 67

CASE STUDY No-2: EMA as per regular book

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 ₹ 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:- 68

CASE STUDY No-3: EMA as per regular book

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 molding 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
● Planting of trees	● Number of trees planted
● Treatment of nitrogen oxide (in the same way, activity and related cost driver for other gases would be determined)	● Volume of nitrogen oxide treated
● Solid waste removal	● Volume of such waste
● Research and development activities	● Man, hours worked for such activities

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.

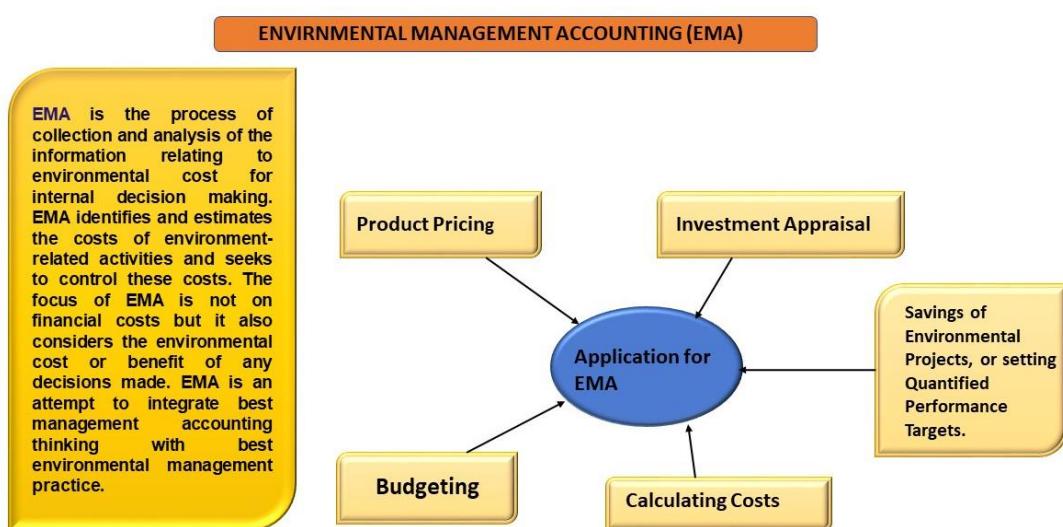
In SBL, it can be clearly seen that there is great impact on health of workers. By creating safe and healthy environment for employees, SBL can improve productivity, business performance, staff morale and employee engagement. Further, SBL will also be able to reduce – accidents/work related ill health/sick 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





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

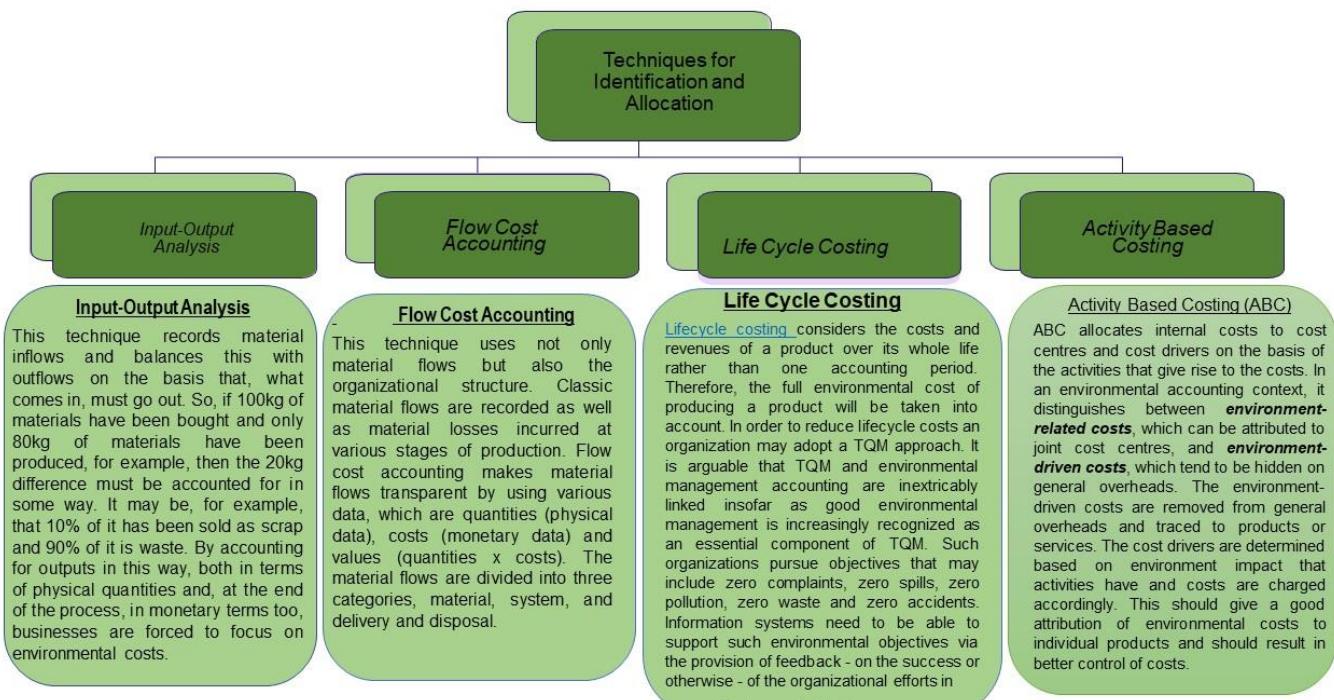
Environmental External Failure

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



Cost

- Training Cost
- Power usage
- Planting of Tree
- Solid Waste removal
- R/D activities

COST DRIVER

- Training Hours
- Kw. Used
- No. of Tree Planted
- Volume of such waste
- Machine hours worked for such activities



CASE STUDY No:- 69

CASE STUDY No-4: EMA as per regular book

CNB 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 there new ables and the nuclear energy, CNB 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, an environmental report is mandatorily required to be submitted yearly for the prescribed industries polluting environment substantially otherwise would be penalized. The energy sector also falls in these prescribed industries. CNB 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 V Sharma, 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 CNB to manage environmental costs.

Solution

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 theses cost.

In CNB, 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 cut back environmental cost, EMA can be applied as follows:

Waste

CNB should measure, manage and monitor waste from operations in order to minimize 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 CNB, 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 CNB 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, CNB 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 CNB like:

- Conducting periodic energy audits for identifying energy saving opportunities.
- Phasing out conventional lights and replacement with LEDlights/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.

CNB 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 CNB, 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.



CASE STUDY No: - 70

CASE STUDY No:- 5 : Value Analysis & Functional Analysis as per regular book

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.



CASE STUDY No:- 71

CASE STUDY No:- 6 (CASE STUDY DIGEST) Value Analysis & Functional Analysis as per regular book

Dream Homes, a US based MNC, started its Indian operations with opening of few stores in its nascent phase. In recent times, it started running nationwide stores in India selling range of home-based products right from home improvement tools, decors, electronic appliances to small kitchen utilities like steel pans, nonstick dishes, kitchen organizers, knives, cardboards, countertop stickers, ice cream molds, chocolate molds and alike. It had gained wide popularity particularly among the ladies' group of India since its expansion of the product line. Previously it was selling just the intermittently purchased home-based products like furniture and appliances. It was the extended accessibility to daily utilities that elated the ladies' group about visiting the stores. Some women referred Dream Homes as the one stop search for all their necessities.

Dream Homes manufactured some of the products rather than making an outright purchases and sales thereof of all its products. To make various kinds of furniture and kitchen based small utilities, it derived its raw materials directly from local market which were mostly the recycled materials like plastics, scrapped items, used furniture and alike rather than the raw wood, forest products and

firsthand products. Its raw materials were therefore capable of generating various forms of work in progress. The work in progress and finished product relation worked in similar fashion. From a particular VIP, it was capable of generating multiple outputs. Therefore, the firm kept its material cost low and primarily relied on the recycling process, thereby keeping up its pledge to serve the environment.

For the in-house manufactured products, the materials department of the firm functioned in the below manner:

1. The manager of the department kept a watch on each type of inventory levels in the warehouse.
2. He then estimated the required production based on historical demand and long-term forecasting policies of the firm.
3. A room was also left for safety stock so that any unforeseen delay in delivery of the goods could be covered.
4. Based on the existing inventory and production plans and safety stocks, inventory replenishment levels were calculated.
5. Once the stock reached its reordering level, an order to replenish the stock was being sent to the vendor.
6. Based on departmental orders, vendor delivered the materials.

To manufacture the finished products i.e., to convert raw material to finished good, the intervening time was 3 weeks. It will take approximately take 4 weeks to deliver the in-house manufactured product from the time order is received. The standard lead time of similar products in industry is 2.5 weeks.

For products purchased out-rightly, a purchase order was prepared by the purchasing department based on the inventory in hand and expected demand. Some of those products did show a sketchy demand pattern, with surge in demand for lame reasons. However, the department did not take into account safety stocks for any of these purchased products, since the cost to maintain such inventories were high and the costs of these products itself were high enough. The problem however was failure to meet surprise orders or sudden increase in demand.

People were getting busier and there was hardly any time to procrastinate buying things they need until they could visit the stores based on their availability. Moreover, it was just the metro cities, that had overwhelming number of stores, but states like Gujarat and Odisha remained an untapped target with very few stores only in the developed parts of the cities. Dream Homes' agenda was not just to add more variety to its existing offerings, but to reach people all around the country since it perceived manifold needs were yet unmet.

Going digital was a challenge since its popularity was limited to its store locations and therefore it was dubious of its acceptability among the nationwide customers. It was prepared for an extensive marketing of its digital channels though and funds were not a problem. Having heard about the peaking demand of businesses for E Customers, it was supportive of the idea and considered to follow the suit.

From its US operations, it was very well aware about the expectations of its E Customers and the quality of service they desire from their E Sellers. They tend to be progressively demanding and expect their orders to be processed in couple of hours after being placed.

They do not want to grapple with the tracking information of their package. They need real time update of their package location so that there are no abrupt surprises about the delivery time and the condition of the package. They like to purchase from E Sellers who offers competitive prices accompanied with free shipping and on time delivery. That is all too much for a developing market like India.

The labor cost is relatively low in India but the infrastructure is not adequately sound to guarantee

the same level of service at their expected prices. Indian market is not similar to the US market, there being an immense cultural gap. The income of the middle-class people is also not remarkably high and hence they can spend sparingly on things that are not paramount on their list. Kitchen items though marked as "necessities" by the women section of the society were not real necessities in economic sense. Hence the firm thought of applying the paradigms of Target Costing to set the prices of their online products such that they remain competitive before their E Customers.

The firm also needs a flawless Supply Chain Management (SCM) System in Indian environment, but the back-office team of the firm had little knowledge about this aspect of the E Commerce project and it did not see the light of the day. Now they need you to help them shape up the SCM look of Dream Homes.

Required

Given the facts of Dream Homes, answer the following questions:

- (i) DISCUSS the suitability of Target Costing concept to Dream Homes?
- (ii) Critically ASSESS its current inventory management system and RECOMMEND suitable changes in light of its business strategy.
- (iii) ADVISE the SCM look for Dream Homes as per their requirement.

Solution:

- (i) Usually, we notice a suit of prices of products being determined based on the cost of their production, keeping a room for desired margin. In contrary to this, the then originated Japanese concept tells us to estimate selling price at first place, to be determined based on the price the market is currently willing to pay for a similar product. Thus, the prices here are not based on the cost of their products rather costs have to be targeted and thus the name "Target Costing". This means once price is determined and profits are set aside, the remainder becomes the costs to be achieved. In striving to reach the cost goal, myriad managerial techniques and tools like Value Chain Analysis/ Value Reengineering, Six Sigma, are used. These techniques are used keeping in mind the focus (i.e., to control cost in order to meet the target without compromising the quality and value to be derived from the product). As such, various costs incurred with respect to product like design cost, manufacturing cost, storage cost, transportation cost are destined to be controlled.

Target Cost concept is very much relevant in Dream Homes' situation since it is considering to digitize its business where competition is intense specifically with regards to the prices of similar products. Since the products offered by Dreams Homes lack much differentiation, the unique selling point of the firm can be to offer quality products at low prices. Further, E Commerce will mostly require the firm to operate as per Just in Time (JIT) approach that will reduce inventory maintenance burden and also reduce wastage, thereby controlling costs. Thus, Target Costing and E Commerce go hand in hand.

We must also keep in mind that the firm can apply Target Costing concept to both its manufactured products and the products purchased out-rightly. For the merchandise goods, Dream Homes can plan to control various fixed cost (i.e., storage and inspection cost) and variable cost (i.e., selling cost) incurred to handle such goods such that lower prices can appeal wider customer base. Moreover, to achieve low costs for its supplied products, it will have to enter into long term contracts with dedicated suppliers. Considering the E Market, the scope of its operations will expand and therefore the demand may also increase. Thus, suppliers can funnel the discounts in form of low prices only if a commitment for long term purchases is made by the firm.

(ii) Currently, Dream Homes operates physical stores at which time inventories of raw materials, WIP and finished products are maintained at the stores and in warehouses considering the demand directly dependent upon the store locations. It has been blocking large assets in form of various inventories piled up to coordinate its production and retail function.

The three forms of inventories related to products that Dream House manufactures are maintained in a traditional manner which seems to be out of the place for an E Retailer. Dream House forecasts demand based on its internal policies and historical trends. Today demand in every sector of the market changes by leaps and bounds, so using historical data is not at all recommended. Demand forecasts should be pulled by current market trends and prediction of future market sentiments. For example, Corona Virus pandemic has drastically changed the face of world, where demand for some products have taken a leap while some will continue sitting on the shelves for a prolonged period.

People are refraining themselves from going to stores and online retailers like Amazon are reaping the benefits from this situation.

In the process of maintaining inventory, Dream Homes is also building up too much safety stock which takes up cost and space. The lead time of the firm is remarkably high relative to industry standards, which is untenable in an E Environment. Failure to accommodate customers request as per industry norms, means losing a large chunk of customers who do not want to wait.

Now when the firm is thinking of going digital, the scenario will be totally different. With the switch over to ecommerce, production and purchase mechanism will also have to undergo a drastic change. Just in time purchasing and production technique will put an end to the harrowing task of inventory management. In this form of pull system, purchasing of merchandise goods and production of in-house goods will be based on online customer demands and Dream Homes will have to accordingly coordinate with its suppliers to supply the right quantity of raw materials required at the right time. JIT inventory management calls for having the inventory as and when needed also taking care of massive holding cost suffered related to large build ups. The trick is to set up plants in close proximity to chain of suppliers' location to ensure several pick-ups each day rather than holding on to bulks. ERP and other sources of electronic data interchange between supplier and Dream Homes will act as backbone in supporting the JIT activity. In this environment, Dream House will also be able to reduce the lead time to deliver the ordered products from 4 weeks to around 2.5 weeks by streamlining the flow of information in entire supply chain.

For the products purchased from its suppliers, it is recommended that Dream Homes should employ vendor managed inventory technique. Under this, rather than firm controlling the inventory management system, it is the suppliers who manage it. This is implemented by allowing the suppliers of the firm to access the inventory information from all locations i.e., warehouse, retail stores and distribution centers. They access the inventory data and then decide accordingly on sending/ replenishing the inventories. For example, using the point of sales technology, data from stores can flow to centralized database showing units sold and units in the stores, that can be accessed by suppliers to anticipate demand and refill requirement in each store. Similarly, to manage the inventory at warehouse, RFID (radio frequency identification) technique can be used to pick up, process and ship the order. For an inbound shipment too, this technology can easily scan the product information in seconds, leaving no room for human intervention. The access of this real time data can be allowed to vendor, to manage Dream Homes' inventory.

In a nutshell, the onus and cost of inventory management passes on to the suppliers, thereby underpinning the cost leadership strategy of Dream Homes. Low cost of inventory management will consequently reduce the overall cost of inventory and thus help, in achieving set cost targets.

- (iii) The supply chain management system of Dream Homes can be designed in the following manner:
- (a) As already known, E Commerce firms works on low inventories relative to physical stores, therefore Dream Homes is pondering about changing its inventory management technique. So, it is time for the firm to focus on building strong collaborations with suppliers so that the lead time of orders placed by Dream Homes can be kept at minimum. Quality of the product offered by such suppliers also cannot be overlooked anymore since E Sellers not only make speedy shipments but also guarantee hassle free returns of the delivered product if their products fail to meet the specifications given in their website. Strong tie up with suppliers will assist the firm in meeting the ever-changing demand of its customers in this technological landscape.
 - (b) Moreover, by implementing vendor managed inventory, as an effective SCM tool, much of the onus of inventory management for its purchased products will shift onto suppliers.
 - (c) For the in-house manufactured products, Dream Homes needs to ensure that there is pool of dedicated suppliers in the country who can supply expected materials on a timely basis. Further, in the areas where there is dearth of such suppliers, it will have to arrange transportation of the finished goods. To keep the overall cost of product low, it should abide by the cost per touch inventory system (successfully employed by the prominent furniture brand IKEA. It relies on the concept of passing the cost savings to its customers by putting up their products together in easy to assemble packaging enabling their customers themselves to select and pick up the product from the store. In a nutshell, less the products get touched in shipping and subsequent storage process less will be the overall cost of product).
 - (d) Most E Retailers maintain number of distribution centers close to their customer locations such that the outbound logistics process works in a seamless fashion and customers end up receiving their packages on the promised dates. For this to happen, Dream Homes should be ready to make large capital investments in setting up distribution centers in the densely populated parts of Indian cities.
 - (e) For the picking process of the goods in line with the order, it can make use of multi-faceted robotics technology with some human participation. This technology can assist human pickers in locating the required goods faster and with minimal error, thereby speeding up the entire flow.
 - (f) In the marketing section of supply chain, Dream Homes should use skillful data scientists to pull overwhelming data based on customer searches which can be analyzed to recommend products most useful to them. Further it could resort to TV advertisements, public banners and other prominent modes to propagate the digitization of its business.



CASE STUDY No:- 72

CASE SCENARIO No:- 7 (CASE STUDY DIGEST)- Target Costing as per regular book

Star Tiles Production Limited (STPL) is large manufacturer of floor tiles and interlocking tiles. STPL enjoyed reasonable market share and brand reputation up till couple of year ago. Since then, STPL is facing problem of decline in productivity. STPL deals in variety of tiles with different brand-name, some of their brands are in development stage and some in maturity. Majority of customer are from middle class, who are price sensitive; hence cost of production is critical aspect for STPL and resultantly productivity too become critical factor.

Workers at STPL are allocated with specific roles and responsibilities. Workers are supposed to work strictly according to specific set of guidelines provided by superior. Workers used to complain about job role allocations, because allocations are not as per skill set of workers. In some of case task become monotonous; as learning curve exhausted. Management and operational decision are centralised in nature, participation of workers is limited up-to day end report only.

Remunerations at STPL are paid based on hourly rate. Hourly rate is fixed based upon number of years of working in STPL, irrespective of importance of task allocated to such worker. Since payment are fixed in nature hence workers at STPL are hardly concern about quality. Some of skilled workers are getting less pay in comparison to other staff. STPL recently retrench some of senior workers, who possess reasonable operational skills; but not good in technology part which is essential to operate machines; recently installed at STPL plant.

Since there are varieties of tiles available in stock that's too with different design, hence in past there are handful instances where material delivered to customer was different from what being ordered. Due to large volume of inventory at store, some category of tiles is further manufactured even lying available in store and stock of some remains always short.

Required

You are newly appointed to Management Accounting Department of STPL, Management Accountant asked you to draft a report for CEO, containing brief explanation to—

- (i) Productivity, stating in context of what it should be measured?
- (ii) Productivity enhancement techniques, which can be applied at STPL in order to enhance productivity?

Solution:

Report

Addressed to:

Office of CEO,

Star Tiles Production Limited (STPL).

Dated – 11th Apr 2020

Report on Productivity Enhancement Techniques

(i) Productivity– Productivity is all about efficient and effective use of all resources. Resources can be time, people, knowledge, information, finance, equipment, space, energy and material.

Productivity is usually linked to ‘time and motion’, in order to

Put pressure on worker to perform faster.

Increase the productivity either by increasing the value or reducing the time required to create that value.

Note - Responsibility of productivity is largely on the person who organizing the work rather individual worker.

Productivity Improvement Techniques

(a) Value Analysis/ Engineering– Value engineering improve value of product at every state of product life cycle; Since products of STPL is lying either in development stage or in maturity stage, hence.

- **At development stage**– STPL can reduce cost without reducing quality by establishing design and processes accordingly.
- **At maturity stage**– STPL can reduce cost by replacing costly component with cheaper one. But may result in reduction in quality to some extent, hence consumer behaviour is important. Since customer base is price sensitive hence this strategy may work.

B:- Quality Circles– Quality circle is small group of employees, usually in size of 5-6 members in order to–

- Meet regularly to identify, analysis and solve problem of their departments.
- Advice the management to implement new methods to solve work-related problems.

Since STPL facing criticism from worker class and method of working is selected by superior hence quality circle can be solution to these problematic aspects.

Note – This technique originated in Japan in 1960s

C:- Financial & Non-Financial incentives– Incentives are real cause of motivation to worker and may be financial and non-financial in nature.

- **Financial** incentive includes better wages and salaries, bonus etc.
- **Non-financial** incentive includes better working condition, welfare facilities, worker participation in management.

Since the incentive scheme is not linked to employees' productivity and skill hence redrafting of incentive schemes incorporating financial and non-financial incentives can promote productivity.

D:- Operations Research– Management at STPL need to incorporate operation research and technique thereof in the decision-making process. Use mathematical & scientific methods may solve the problems of productivity (by using techniques such as LPP etc).

E:- Training– Rather than retrenching the employees who are operationally sound and weak in using the technology, they must be trained on technological part. Training is process of knowledge & skill enhancement of employee and will result in increased efficiency of employee.

F:- Job Enlargement & Job Enrichment– Job Enlargement is horizontal expansion of job which increase the varieties of job & work knowledge (make job interesting and satisfying), whereas Job Enrichment is vertical expansion of job which makes routine job more meaningful and satisfying. With this STPL can solve the problem of monotonous nature of task and can enhance the productivity.

G:- Job Evaluation– In order to enhance the productivity, STPL should do job evaluation. Fixing value of each job in the organisation. This is essential for moral boosting for employees.

H:- Inventory Control & Material Management – Optimum usage of material in manufacturing process need to be ensured by STPL, whereas overstocking and under-stocking should be avoided, through–

- Scientific Purchase
- Systematic Store Keeping
- Proper Inventory Control, etc.

Because overstocking may result in blockage of fund, chance of misuse/ mishandling & spoilage of material and under-stocking results in shortage or sale out situation which result in loss of contribution.

I:- Quality Control – STPL should ensure identification of causes of quality deviation & correction thereof, in order to produce goods with quality at lowest prices & to reduce wastage.

J:- Human Factor Engineering– Understanding of technology and human requirement (psychological & physiological character), of task and worker both; in order to ensure fitment of job to men; to increase human efficiency & wellbeing. STPL can do skill mapping as part of this technique.

Further details can be tabled on requisition basis.

Closure of Report

Signature

(For Management Accounting Division)

Star Tiles Production Limited.



CASE STUDY No:- 73

CASE SCENARIO: Kaveri Ltd. Question 10 as per regular book

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-aluminum, 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 aluminum 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 aluminum 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, tire 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.



CHAPTER 6 (B)

Decision Making

CASE STUDY No:- 74

CASE STUDY No:- 2, Question No-30 as per regular book

Question No:-30:- 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 though 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 mind 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 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 works. 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.



CASE STUDY No:- 75

CASE STUDY No:-3 -Question 40 as per regular book

The President of Automation Limited, 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.



CHAPTER 7

Pricing Decision

CASE STUDY No:- 76

Case Scenario Question No-3 as per regular book

Question 3: 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 No:- 77

Case Scenario No.: -1 (Transfer Pricing) as per regular book

Global Multinational Ltd. (GML) has two Divisions 'Dx' and 'Dz' with full profit responsibility. The Division 'Dx' produces Component 'X' which it sells to 'outside' customers only. The Division 'Dz' produces a product called the 'Z' which incorporates Component 'X' in its design. 'Dz' Division is currently purchasing required units of Component 'X' per year from an outside supplier at market price.

New CEO for Indian Operations has explored that 'Dx' Division has enough capacity to meet entire requirements of Division 'Dz' and accordingly he requires internal transfer between the divisions at marginal cost from the overall company's perspective.

Manager of Division 'Dx' claims that transfer at marginal cost is unsuitable for performance evaluation since they don't provide an incentive to the division to transfer goods internally. He stressed that transfer price should be 'Cost plus a Mark-Up'.

New CEO worries that transfer price suggested by the manager of Division 'Dx' will not induce managers of both Divisions to make optimum decisions.

Required

DISCUSS transfer pricing methods to overcome performance evaluation conflicts.

Solution:

To overcome the **optimum decision making and performance evaluation conflicts** that can occur with **marginal cost-based transfer pricing** following methods has been proposed:

Dual Rate Transfer Pricing System

"With a 'Dual Rate Transfer Pricing System' the 'Receiving Division' is charged with marginal cost of the intermediate product and 'Supplying Division' is credited with full cost per unit plus a profit margin".

Accordingly, Division 'Dx' should be allowed to record the transactions at full cost per unit plus a profit margin. On the other hand, Division 'Dz' may be charged only marginal cost. Any inter divisional profits can be eliminated by accounting adjustment.

Impact:

- Division 'Dx' will earn a profit on inter-division transfers.
- Division 'Dz' can chose the output level at which the marginal cost of the component 'X' is equal to the net marginal revenue of the product 'Z'.

Two Part Transfer Pricing System

"The 'Two Part Transfer Pricing System' involves transfers being made at the marginal cost per unit of output of the 'Supplying Division' plus a lump-sum fixed fee charged by the 'Supplying Division' to the 'Receiving Division' for the use of the capacity allocated to the intermediate product."

Accordingly, Division 'Dx' can transfer its products to Division 'Dz' at marginal cost per unit and a lump-sum fixed fee.

Impact:

- 'Two Part Transfer Pricing System' will inspire the Division 'Dz' to choose the optimal output level.
- This pricing system also enable the Division 'Dx' to obtain a profit on inter-division transfer.

INTERNATIONAL TRANSFERPRICING

Dynamic business models enable business to spread their business across countries. In the recent decades, with the acceptance of a globalized environment, benefits of such business models are being enjoyed across countries. Business have benefitted from a multi-national business model. For multinationals considerations for such business models are driven by many factors:

- Demand for its final products
- Availability of raw materials in a specific country. To source such inputs, multi-national companies can have business set-up in the foreign country. Example DeBeers Group that sources diamonds from across the world or from India the Tata Group of companies.
- Availability of low-cost labor with specialized skills. India has been one of the major beneficiaries of this outsourcing model.

It can be concluded that transactions between divisions of these multi-national companies could involve transfer of goods, provision of services or even for intangibles for use of parents, copyrights, brands in the form of royalty payments.

In few cases, they could be inter-company loans to take advantage of excess funds lying with a company, meeting the needs of a company in another country.

Taxation, profit repatriation and transfer prices are critical considerations to the senior management of the multi-national companies. Multi-national organizations try to maximize profits by using transfer pricing as a tool to reduce the tax impact on earnings. Where, the supplying division is in a country with higher tax rate, the transfer price will be set lower in -order to reflect higher earnings (resulting from lower purchase cost) in the purchasing division, which has a lower tax rate. Likewise, supply from lower tax rate countries may be priced higher, in order to reflect higher earnings for that unit, thereby reducing the tax impact.

As explained in the beginning of the chapter, from a taxation perspective, transfer price is analyzed as to whether it is at an "arms-length" price. However, what is "arms-length" is a subjective question.

A recent case in point is the ruling on Starbucks UK subsidiary by the British authorities: Known for their world-famous coffee, that generate high margins for the company. Although management claimed that business was good, the tax records reported losses. Investigations revealed that the UK subsidiary paid its Netherlands unit 6% of sales as royalty for intellectual property such as its brand and business processes. This agreement "6% of sale" is the transfer price between the units. The question tax authorities raised was whether this was at arms-length, is it comparable with market terms for similar transactions.

In India such tax avoidance measures are being regulated by the government with the introduction of Section 92A to 92F in the Income Tax Act, 1961. This concept is covered in further detail in your taxation syllabus.

International Transfer Pricing and Currency Management

International firms are exposed to exchange fluctuation risks. These fluctuations create uncertain cash flows in corporate currency and also can misrepresent performance of subsidiaries. With inter-

divisional trading between subsidiaries in different countries, when one subsidiary makes a loss on a contrary exchange rate movement, the other will make a profit. The company as a whole should manage its exposures to currency risks. The management of currency risk is the responsibility of either the profit centre managers or a treasury department. A multinational company might be keen to set transfer prices in a currency such that any currency losses arise in the subsidiary in the high-tax country, and currency profits arise in the country with the lower tax rate if it is fairly-certain about exchange rate movement in the future.



CASE STUDY No:- 78

CASE STUDY No:- 2, Question 43 from Regular Book

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 workout 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:

Cost Particulars	Budget	Actual	Figures in ₹
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 sessions 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?

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:

Cost Particulars	Budget (₹)	Classification
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
Total Expenses	29,60,000	

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

$$= (\text{Standard Fixed Cost per session} \times \text{Budgeted Training Sessions}) + (\text{Standard Variable Cost per Session} \times \text{Actual Training Sessions})$$

$$= (\text{₹14,050} \times 100) + (\text{₹750} \times 100)$$

$$= ₹14,05,000 + ₹75,000 = ₹14,80,000.$$

Transfer price to the customer service department = lump-sum charge + marginal cost

$$= (\text{Standard Fixed Cost per session} \times \text{Budgeted Training Sessions}) + (\text{Standard Variable Cost per session} \times \text{Actual Training Sessions})$$

$$= (\text{₹14,050} \times 100) + (\text{₹750} \times 80)$$

$$= ₹14,05,000 + ₹60,000 = ₹14,65,000.$$

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 No:- 79

Case study No:- 3, Question 44 of Six Sigma & Transfer Price as per regular book

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%
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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 Saled 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 retunes 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 ate time specially 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 dressing 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 in significant. Currently 20% of company's sales are of products for mother manufacturers. There is no indication from the data given how many of the returns relate to the 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 ± 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



CASE STUDY No:- 80

CASE STUDY No:- 4 Relevant Cost Concept, Transfer Pricing & COQ as per regular book

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. Sometime you also assist Director Finance in analysing financial and non-financial information, drafting reports for board meetings, preparation of presentation and staff trainings.

Business Situation- 1

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 and asked you the following:

Required

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 P.M: 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 P.M: 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.

Solution

Statement Showing Relevant Cost

Type of Cost	Explanation	Amount (₹)
Material Dx ($40 \text{ tonnes} \times ₹380$)	1	15,200
Components	2	52,000
Direct labour ($2,000 \text{ hrs.} \times ₹11$)	3	22,000
Specialist machine	4	10,000
Machine operating cost	5	12,000
Supervision	6	5,000
Development time	7	Nil
General fixed overhead	8	Nil
Total relevant cost		1,16,200

Explanation

1. Material Dx is in regular use by AUS Ltd. and must be replaced. Consequently, its relevant value is its replacement cost. The historical cost is not relevant because it is a past cost and the resale value is not relevant because AUS Ltd. is not going to sell it because the material is in regular use.
2. AUS Ltd. would like to procure 4,000 components either from ANZ Ltd. or externally from the market. At the current production level, ANZ Ltd. (seller) has available capacity to accommodate part of AUS Ltd's request to the extent of 2,500 components. At this point, ANZ Ltd. would be operating at its maximum capacity. To cater to the remaining demand of 1,500 units from AUS Ltd., ANZ Ltd. has to forego external sales of ₹50,000 to its own customers. Given that the

contribution to sales ratio is 40%. Therefore, ANZ Ltd. has to forego contribution of ₹20,000 (40% of external sales foregone ₹50,000) in order to cater to AUS Ltd.'s request. Fixed cost at ANZ Ltd. is irrelevant, since it would be incurred irrespective of whether AUS Ltd.'s order to catered to or not.

Therefore, in spirit of goal congruence, the transfer price that ANZ Ltd. would charge AUS Ltd. would be the variable cost of ₹8 per unit and ₹20,000 towards lost contribution as explained above. Therefore, the transfer price

$$\begin{aligned} &= (\text{₹8 per unit} \times 4,000 \text{ components}) + \text{₹20,000} \\ &= \text{₹32,000} + \text{₹20,000} \\ &= \text{₹52,000 for 4,000 components} \end{aligned}$$

Therefore, per component, the price charged would be ₹52,000 / 4,000 = ₹13 per component. This is lower than the external market price of ₹15 per unit. Therefore, in the interest of goal congruence the cheaper option is preferred. AUS Ltd. should source its components from ANZ Ltd, for a total procurement cost of ₹52,000.

3. Skilled labour is in short supply and can only be obtained by reducing the production of product 'G', resulting in a loss of contribution of ₹24 (given) or ₹6 per hour of skilled labour. Hence the relevant labour cost will be ₹6 (contribution lost per hour) + ₹5 (hourly rate of skilled labour) i.e. ₹11 per hour.
4. AUS Ltd. has a number of options: (a) If the machine were to be hired it would have a cost of ₹15,000; (b) if the machine were bought and then sold at the end of the work it would have a net cost of ₹20,000; or (c) if the machine were bought and then modified to avoid the need to buy the other machine it would have a net cost of ₹10,000 (₹50,000 plus ₹5,000 modifications less ₹45,000 cost of another machine). Thus, the most economic approach is buy the machine and then modify it so the relevant cost is ₹10,000.
5. The machine operating costs are future costs of doing the work and therefore are relevant.
6. The supervisor's salary is irrelevant, but the bonus needs to be included because it is dependent on this work and therefore is relevant.
7. The development time has already been incurred. Therefore, it is a past cost and not relevant.
8. General fixed overhead costs and their absorption are not relevant because they will be incurred whether the work goes ahead or not. Depreciation is also not relevant because it is an accounting entry based on the historical purchase of assets. It is not affected by the work being considered.

- (i) Two main issues arise when pricing work based on relevant costs:

Profit reporting; and Pricing of future work.

With regard to profit reporting, the decision as to whether to proceed with the work will have been based on the use of relevant costs, but the routine reporting of the profit from the work will be based on the company's normal accounting system. Since this system will be based on total cost, it is probable that the costs of the work reported will be greater than its relevant cost. Consequently, the amount of profit reported to have been made on this order will be lower than expected and may even be a loss. This may cause difficulties for the manager who accepted the work as an explanation will be required of the reasons why there is such a difference in profit.

With regard to the pricing of future work the difficulty lies in increasing the price for similar items for the same customer in future. Once a price is set, customers tend to expect that any future items will be priced similarly. However, where a special price has been offered based on relevant cost because of the existence of spare capacity the supplier would not be able to continue to price on that basis as it does not recover its long term total costs.

There may also be difficulties created by this method of pricing as other customers are being charged on a full cost basis and if they were to discover that a lower price was offered to a new customer they would feel that their loyalty was being penalised.

(ii) **Prevention**

Operations: Preventative maintenance and checking of the calibration of machinery. This would reduce the number of potentially faulty products being produced and therefore reduce guarantee claims.

Appraisal

Inbound Logistics: Reduce costs of incoming inspections by building close links with suppliers and getting them to adopt TQM. If suppliers can guarantee their quality, then inbound inspections could be eliminated.

Internal Failure

Operations: Reduce costs of re-works by training employees on a continual basis e.g. quality circles. This would reduce failure costs and also improve quality.

External Failure

Service: Design quality into the product to try to prevent guarantee claims and therefore the cost of servicing/repairing the product.



CHAPTER 11

Budgetary Control

CASE STUDY No: - 81

CASE SCENARIO No:- 1 Real Petroleum as per regular book

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 computerized 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 organization to ensure that the organization 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 from 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 finalizing on whether the new system should be implemented or not.



CASE STUDY No: - 82

CASE STUDY No: - 2 Feedforward control and Feedback Control as per regular book

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

Feed forward control attempts to take corrective action before an event, whereas feedback control takes corrective action after the event.



CASE STUDY No:- 83

CASE STUDY No-3: Feedforward control and Feedback Control as per regular book

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:- 84

CASE STUDY No: - 4 as per regular book

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 realizer 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.



Behavioral Aspects of Budgetary Control:- Human Being in general don't like to be controlled by others. A manger won't like someone else to set the targets for him and then evaluate his performance to find out the deviations from the target set. The study of this psychological conflict in the implementation of budgetary control system is often termed as behavioral aspects of budgetary control.

In every commercial organization an employer would wish to get maximum output from his employees by paying them the lowest wages and salaries. On the other hand, every employee would wish that he should get highest salary without taking any efforts. Thus employer and employee work together with different motives in their mind. This conflict is required to be handled very skillfully.

Behavioral aspects explains that many of the goals of budgeting are contradictory. On the one side, we

want to be able to fairly evaluate the performance of managers. But we also want to motivate managers and therefore, even if managers are not involved in the process, managers may find the budget too challenging and therefore reduce their efforts. That in turn would distort any evaluation.

The participation of managers in setting targets for themselves tend to improve motivation and performance. But the budget themselves may distort the goals as they will be very short term, be focused on cost reduction rather than say quality aspects and they will solely focus on financial aspects of the organizations goals . There is therefore a conflict between aiming to achieve financial control and communicating the organisation's goals.

Moreover, the budget is framed to act as a plan for a manager, section or division. The manager may therefore pursue this plan at the cost of other critical success factors that emerge in the internal or external environment of the firm. For example a production manager may continue to use the planned materials mix even if the sales department are indicating that customers would desire a different product design and the purchasing department have accommodated their purchases accordingly. The production manager then has to choose between the production plan and inter department coordination.

Many of the conflicts arise due to the human nature of a budgetary control system. Managers do not always follow organizational goals, they do not always think long term, they may be cautious of moving away from the plan etc. This provides a conflict between many of the goals of a budgetary control system which needs to be considered at a strategic level when implementing such a system.

Budget Slack:

Budget Slack is the deliberate estimation of budgeted revenue or over estimation of budgeted expenses. This allows managers a much better chance of achieving their targets Managers are worried about achieving their targets because their incentives and bonuses are linked to the achievement of budgeted numbers.

Thus budget affects the approach and behavior of managers. Unrealistic demanding targets tend to affect managers performance adversely. Allowing managers to set their own targets will introduce slack targets. Managers working in an environment where they are expected to meet the budget targets often try to introduce slack into budget. It can have a detrimental impact on the evaluation of actual performance of managers incorporate slack into the budget in order to make it easier to achieve.

To sum up, if we go by participative style of preparation of budget (to motivate managers) then managers may introduce budget slack. If we go by autocratic style of preparation of budget (i.e. dictatorship style), then the managers will find it difficult to achieve the targets and loose the motivation and confidence to work. This paradoxical situation is discussed below.

Effect of the Budget Difficulty on Performance:-

Once budgets have been set as performance targets surely performance will be evaluated. This can be simply a comparison of actual with budgeted performance or alternatively can be a more detailed comparison of actual performance with flexed budget performance as is found in variance analysis and operating statements. The evaluation step is often one of the most argumentative as it is here that performance is likely to be criticised and employees will be sensitive. There are many potential difficulties:

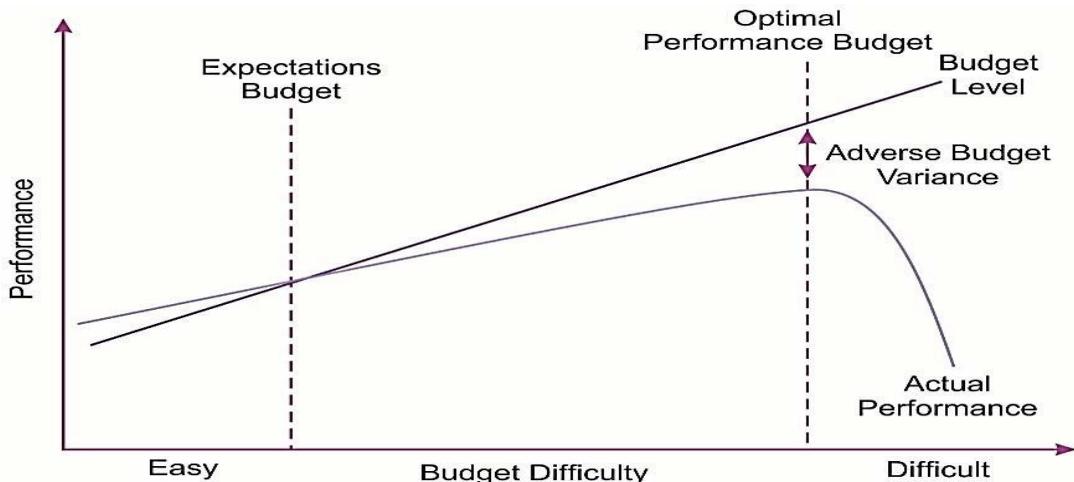
- Budgets have no motivational effect unless they are accepted by the managers involved as their own personal targets.
- Beyond a certain point, where the budget is no longer acceptable, the more demanding the target, the worst will be the results achieved.
- Demanding budgets are seen as more relevant than less difficult targets but negative attitudes result if they are seen as too difficult.

- Acceptance of budgets is facilitated when good upward communication exist. The use of departmental meeting was found helpful in encouraging managers to accept budget targets.
- Managers reactions to budget targets were found affected both by their own personality and by more general cultural and organizational norms.

The relationship between budget difficulty and the ensuring level of performance can be shown graphically and is illustrated as under:

The Effect of Budget Difficulty on Performance

The Effect of Budget Difficulty on Performance



“Budget level that motivates the best level of performance may not be achievable. In contrast, the budget that is expected to be achieved motivates a lower level of performance as managers no longer aspire to meet the budget target.

To sum up, the achievable performance is not the best performance of any employee. On the other hand, the best performance of an employee is below the target set. Beyond a certain point, the target becomes so difficult that the employee loses the motivation to achieve it. An employee feels that the targets are not achievable in spite of his best efforts, he stops working and the actual performance sharply goes down.



CASE STUDY No:- 85

CASE SCENARIO No: - 5 (Behavioral Aspect) as per regular book

“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

Top-down approach	Bottom-Up approach
Advantage	
I: - 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.
Dis-advantages	
I: - 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: - 86

CASE STUDY No: -6 (Participative Budget) as per regular book

Established in the year 1997, Excellent woodcraft Private Limited (EWPL) is one of the distinguished manufacturers 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

- 1: - 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 sale managers, 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

- I: - 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 planningprocess.

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.

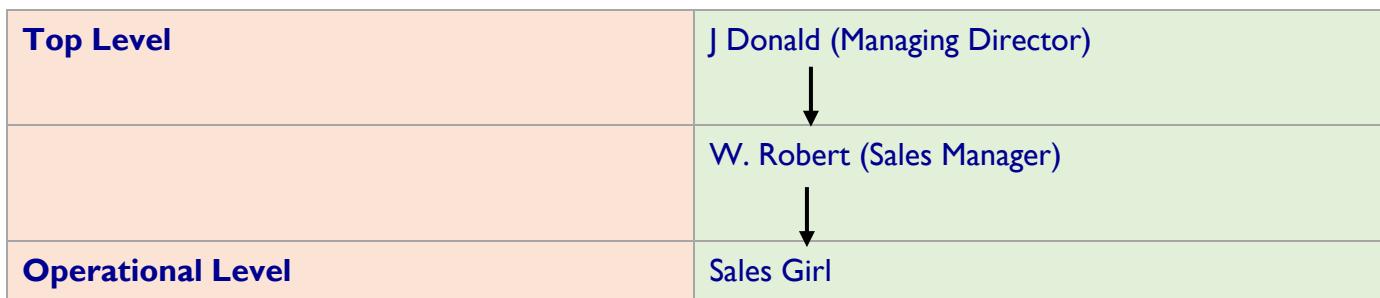
In top-down approach, budget figures will be imposed on sales personnel by senior management and sales personnel will have a very little participation in the budget process. Such budget will not interest them since it ignores their involvement altogether. While in bottom-up approach, each sales person 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 sales girls involved.



Summary:-

Organization Structure: -



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>
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Can be produced quickly	Subordinate managers prepare their budget themselves & reviewed by Senior management.
Less management time.	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.
<u>DIS - ADVANTAGES: -</u>	
	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.
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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:- 87

CASE STUDY No: -7 (Participative Budget) as per regular book

SPM, a leading school of management in the heart of India's financial center 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:- 88

CASE STUDY No: -8 (Great Bus Tours Co.)as per regular book

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, finalized 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)

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:- 89

CASE STUDY No: -9 (The Board of Directors) as per regular book

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 chance. 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- organization. This will also help the managers to close coordination with each other with motivation which in turn will beat the competition.



CASE STUDY No:- 90

CASE SCENARIO No: - 10 (Magical Stay) as per regular book

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 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 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.



CHAPTER 12

Standard Costing

CASE STUDY No:- 91

Case Scenario No:- 1, Question 63 as per Regular Book

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 ground 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".

Solution: -

- (i) Gourmet and high-end restaurants recognizes Natural spices on the basis of high quality of spices. Therefore, quality is most critical success factor of Natural spices. There are other factors which cannot be ignore such as price, delivery option, attractive packing etc. But all are secondary to the quality.
- (ii) Deliberate action of cutting price to increase sales volume indicates that firm is intending to expand its market to retail market and street shops which is price sensitive.

Purchase Price Variance is clearly indicating that firm has purchased raw material at lower price which may be due to buying of lower quality of material. Similarly, positive Efficiency Variance is indicating cost cutting and stretching resources.

It appears that firm is intending to expand its market to retail market and street shops by not only reducing the price but also compromising its quality which is opposing its current strategy of high quality.

Management should monitor the trends of variances on regular basis and take appropriate action in case of evidence of permanent decline in quality. Here, customer feedback is also very important.



CASE STUDY No:- 92

Case Study No:- 2, Question 67 as per Regular Book

'HAL' is a manufacturer, retailer, and installer of Cassette Type Split AC for industrial buyers. It started business in 2001 and its market segment has been low to medium level groups. Until recently, its business model has been based on selling high volumes of a standard AC, brand name 'Summer', with every limited degree of customer choice, at low profit margins. 'HAL' s current control system is focused exclusively on the efficiency of its manufacturing process and it reports monthly on the following variances: material price, material usage and manufacturing labour efficiency. 'HAL' uses standard costing for its manufacturing operations. In 2018, 'HAL' employs 20 teams, each of which is required to install one of its 'Summer' AC per day for 350 days a year. The average revenue per 'Summer' AC installed is ₹ 36,000. 'HAL' would like to maintain this side of its business at the current level. The 'Summer' installation teams are paid a basic wage which is supplemented by a bonus for every AC they install over the yearly target of 350. The teams make their own arrangements for each installation and some teams work seven days a week and up to 12 hours a day, to increase their earnings. 'HAL' usually receives one minor complaint each time a 'Summer' AC is installed and a major complaint for 10% of the 'Summer' AC installations.

In 2016, 'HAL' had launched a new AC, brand name 'Summer-Cool'. This AC is aimed at high level corporates and it offers a very large degree of choice for the customer and the use of the highest standards of materials, appliances, and installation. 'HAL' would like to grow this side of its business. A 'Summer-Cool' AC retails for a minimum of ₹1,00,000 to a maximum of ₹ 5,00,000. The retail price includes installation. In 2017 the average revenue for each 'Summer-Cool' AC installed was ₹ 3,00,000. Currently, 'HAL' has 7 teams of 'Summer-Cool' AC installers and they can install up to 240 AC a year per team. These teams are paid salaries without a bonus element. 'HAL' has never received a complaint about a 'Summer-Cool' AC installation. 'HAL' s business is generated from repeat orders, recommendations, and local press advertising. It employs three sales executive who earn an annual salary of ₹ 3,00,000 each. It offers a six-month money back guarantee and this has to be fulfilled for 1% of its installations. 'HAL' has always been in profits but was shocked to see that in its results in 2017 it only earned 0.2% net profit on its turnover.

Required

- (i) EVALUATE the appropriateness of 'HAL' s current control system.
- (ii) RECOMMEND four Critical Success Factors (CSFs) which could assist 'HAL' in achieving future success.
- (iii) ADVISE 'HAL' about the changes it could implement in its standard costing and reporting system to achieve improved control.

Solution: -

- **HAL's Control System:-** HAL's current control system is focused exclusive on manufacturing process and its efficiency even though HAL is also a retailer and industrial ACs.
- Only MPV , MUV , Leffv are considered while Other variances are ignored. LRV, MYU.
- A lack of product costs computation may be the reason that it was shocked about its 2017 profit margin.
- In the case of a Summer Cool AC where the highest standard of materials are used, It is pertinent that the quality of the finished product is not compromised. Therefore it might be proper to accept an unfavorable material price variance to maintain the products standard.
- Variance analysis should not be done in isolation but a holistic view needs to be taken about HAL's

operations and the current control system may not lead to this.

- HAL is not currently controlling and monitoring aspects which are important for competitive success . HAL's critical success Factors have not been identified yet.
- There is monthly reporting of variances but in addition to this. There should also be follow-up actions for outcome resulting from reports. However a month is not inventing the relevant reporting period for all aspects of HAL's business.
- If there is a production problem leading to excessive materials wastage a month is too long time to wait before remedial action are taken. Therefore real time or coexistent reporting may be more relevant for manufacturing operations. A major deficiency of HAL's control systems is that they do not extend to retailing and installation activities.
- The summer installation teams are incentivized to complete AC's which could be good for their productivity. However there is a high level of complaints associated with their work.
- As there is no evident means of monitoring the installation team's work, the reason of the complaints cannot be identified.

Critical Success Factors (CSF)are elements tied to the strategy of business and they represent objectives that business is trying to achieve as a corporation, as a department or as business unit. Critical success factors may vary over time and may include items like employee attitudes, manufacturing flexibility etc. There are a range of CSF's which could be appropriate for HAL. They include:

1:- CSF: Installation Quality:-There are different quality expectation for the two ACs and there have been different levels of quality achieved can be seen in the historic pattern of complaints . This strongly implies that the quality of installation should be tracked as a separate CSF for each AC.

- This CSF is important for HAL due to cost implications of rectifications and guarantee claims.
- It is also important to consider that because of the defect that poor quality will have adverse effect on HAL's future business.

2:- CSF: Customer SatisfactionLike Quality, this CSF also will need to be monitored separately for each AC, Customer satisfaction encompass the complete life of a transaction beginning with the initial enquiry about a purchase and continuing after installation for the life of the machine. Customer satisfaction will have an influence on HAL's future business which is dependent, in part on repeat orders and recommendations.

- This CSF will also show the market view of HAL's brand.

3:- CSF: Brand PerformanceHAL has two distinct brands. They are directed at different market segments and have different associated attributes.

- "Summer" ACs offer limited choice to the customer and retail, on average for ₹36,000.
- HAL would like to maintain this business at its present level (7,000 Acs a year minimum) ₹252 million revenue.
- HAL needs to ascertain where this brand is situated in its life-cycle and what marketing activities may be required to support it.
- The summer –cool brand is aimed at a different market segments and Hal would like to grow this aspect of its business which produces revenue of ₹504 million. The success of both brands is important for the continual success of HAL and this CSF indicate a complete view of performance.

4:- CSF Manufacturing ExcellenceHAL manufactures all the ACs which it sells and installs

- Manufacturing must be a substantial part of HAL's total cost and a significant contributor to profitability.

- Currently , HAL monitors some limited aspects of manufacturing though its control system.
- However there are many other aspects which have not been reported upon , For example- innovation, labour abseentism, manufacturing in technology. This CSF is much broader than the current control system. It also assists in searching for competitiveness.

Standard Costing and Reporting System:-HAL May be required to abandon or modify its standard costing and reporting system.

- The rationale behind this is that the current control system might lead to an inappropriate emphasis being placed on certain aspects of performance.
- The installation for summer AC is causing a substantial level of complaints whereas there has never been a complaint made about a “Summer Cool AC. IT could be that the different remuneration arrangements for the ACs installation teams have led to this and as the complaint level is an important aspect of the CSF i.e. Customer Satisfaction, HAL may need to modify its remuneration arrangements.
- It should also reckon whether it would be benefited from a broader range of variable reporting, for example, it may find reporting useful to report on labour rates and material yield. For all CSFs HAL will need to determine the appropriate reporting intervals. Although it is useful to synchronize this with the accounting reporting cycle. CSFs and KPLs do not necessarily coexist with accounting period ends. Some KPIs in real-time, for example material wastage, others may be of a longer duration like Customer Satisfaction.
- There is a strong argument for disassociation of the CSFs reporting from the financial reporting cycles.



CASE STUDY No:- 93

CASE Study No:- 3 from Case study Digest Question 71 from Regular Book

Bhatia Motor Works (BMW) is one of the renowned coach builders (fabricator) in North India, with a mission to design and fabricate high-quality buses that are innovative in style and engineering; whilst maintaining standards of reliability. BMW has market both locally and internationally.

Human resource at BMW is highly skilled and well versed with latest tools and techniques of respective functional area. BMW is innovative company and always try to improve its performance.

Till date standard costing at BMW is limited only up to calculation of variance. Analysis and classification of variances are never performed. But newly appointed cost controller is highly motivated. Recently, post his appointment, the budgetary system at BMW was revamped drastically as part of cost efficiency drive. Same was done to give best response to variance identified, if any. Not only this, but cost controller is also interested in incorporation of relevant costing and learning curve in standard costing and budgetary control system. With help of management accountant, he able to fetch following data, pertaining to different divisions–

Fabrication division of BMW manufactures two products seat handle (product code B-SH- 101) and seat cover (B-SC-102) with BMW logo imprint on both apart from fabrication. Product B-SH-101 takes 6 men hours to make while product B-SC-102 takes 12 hours. In a month of 25 actual working days of 8 hours each, 1,200 units of B-SH-101 and 750 units of B-SC-102 were produced. BMW employs 75 men in the department responsible for producing these two products. The budgeted hours are 1,86,000 per annum. No. of budgeted working days were 26 but due to break-down, production function actually remains in operation for 25 days only.

Painting Division

The budget was prepared by management accountant for painting division based upon performance report of last year, he assumes that workers learning curve rate will be 95%. But workers are skilled and specification of task is well known to them, so they assure their manager of 90% learning curve rate (learning index value will be -0.152). Since BMW believe in participatory budgeting, hence management accountant revised the budget estimate post feedback from worker's group.

In each month 15 buses are made ready for delivery after painting & fabrication. It is estimated that initial bus will take 20 hours for painting. It is estimated that learning will be terminated post 6th unit.

Extracts and Values from tables

$\log 2 = 0.3010$, $\log 3 = 0.4771$, $\log 5 = 0.6990$; Antilog of 1.1827 is 15.23, Antilog of 1.2808 is 19.08 and Antilog of 1.1948 is 15.66.

Required

- i. Is favourable variance being conclusive proof of efficiency, or investigation of variances is essential? ILLUSTRATE.
- ii. EXPLAIN planning and operating variance.
- iii. 'Standard cost used for variance analysis is not always relevant cost'. EXPLAIN the importance of relevant cost while determine standard cost for variance analysis.
- iv. 'Largely the standard yardsticks are static in nature, during a particular period for ease of variance analysis for said period; but not in case of labour related standard yardsticks; due to learning curve' ASSESS the validity of the statement, in light of need of recognition of learning curve, while establishing the standards.
- v. COMPUTE revised budgeted labour hours for management accountant incorporating learning curve.
- vi. EXPLAIN and INTERPRET control ratios.

Solution:

(i) Investigation of variances are essential

Variance identified post comparison of actual cost against standard cost are not a conclusive sign of performance. No doubt variances are strong indicator of the potential problem. However, investigation of root cause of the adverse variances is necessary. Some of variances are composite of in nature (for e.g., material usage variance can be further classified in material efficiency and material yield variance) hence break down them in part and investigation of each element becomes essential.

So even favourable variances need to be investigated. To understand this statement a suitable illustration can be of raw materials that too in competitive pricing environment. Suppose inferior quality good (whose price is comparatively less) is ordered, on the one side favourable price variance will arise; on the other side most likely there will be substantially more scrap & rework, and thus a higher usage variance.

(ii) Planning & Operating Variances

Planning Variance – These variances are arising due to revision of standards. In order to compute planning variance original standard needs to be compared with a revised standard. Revised standard is that standard, which may be used as yard stick, if what happen earlier known toppers on responsible for planning. These are also known as planning variance

Operating Variance—These variances are on account of variance of actual performance or results from revised standard.

(iii) Variance Analysis and Relevant cost

Traditional approach to variance analysis is to compute variance based on acquisition cost (incurred out of pocket) and standard price for the acquisition of such resources. This may be misleading when resources are scarce in nature, because if scarce resources are not effectively used; it will not only increase the purchase cost (because finance cost is also incurred in addition to acquisition cost) but also result in loss of contribution.

Hence it makes sense, if we incorporate relevant costing to variance analysis; in term of contribution lost on scarce resource/ bottleneck activities. To illustrate, while computing material usage variance, lost contribution should be embedded in standard price (to reflect how efficiently, scarce resources is being used) as follows—

$$(Standard\ Quantity - Actual\ Quantity) \times Relevant\ Standard\ Price$$

Where, relevant standard price is standard cost of acquisition of scarce resource (material) added by contribution lost (for else product, where this material; otherwise supposed to be used)

(iv) Recognition of learning curve while establishing the standards

Learning Curve recognises the progression of learning potential of people, it presumes worker become quicker if he repeats the process. Now this presumption has implication on standard setting process, in regard to computation of labour related variance and interpretation there to.

Due to learning curve, standard time established soon become outdated yard stick for performance evaluation, hence computing labour variance with such out-dated standard date is meaningless from prospective planning and control.

Hence in order to accommodate, rapid change in form of reduction of time required/taken producing further each unit of same product with identical specification; effect of learning curve should be considered while computing labour variance. Effect of learning curve should be embedded while setting the standard.

Even in case of material related variances, learning curve has critical implication; because while producing identical product for second time or there after; there is high probability of elimination of defect and wastage. Same may improve both the material price and usage variances. Variable production overhead, which are associated to labour hours may also impacted by learning curve. Hence considering the effect of learning curve is essential for material and overhead variances too.

(v) Revised budgeted hours

A learning curve is geometric with the general form $Y = ax^b$ Whereas—

Y = Cumulative average time per unit or batch. a = time taken to produce initial quantity.

X = the cumulative units of production or, if in batches, the cumulative number of batches b = the learning index or coefficient

Time taken to paint 6th unit is 13.08 hours i.e. (91.38 – 78.30) (See working note 1 & 2)

Time required to paint unit 6th onward = 13.08 hours (because learning curve will cease post 6th unit)

Revised budgeted time required to paint 15 buses = 78.3 hours (for first 5) + 13.08 hours × 10 units (next 10 – 6th to 15th) = 78.3 hours + 130.8 hours = 209.10 hours

Working note 1-Time required for painting first 6 buses

$$Y = 20 \times (6)^{-0.152}$$

$$\begin{aligned}
 \text{Log } Y &= \text{Log } 20 - 0.152 \times \text{Log } 6 \\
 \text{Log } Y &= \text{Log } 20 - 0.152 \times \text{Log } (2 \times 3) \\
 \text{Log } Y &= \text{Log } 20 - 0.152 \times (\text{Log } 2 + \text{Log } 3) \\
 \text{Log } Y &= 1.3010 - 0.152 \times (0.3010 + 0.4771) \\
 \text{Log } Y &= 1.3010 - 0.152 \times (0.7781) \\
 \text{Log } Y &= 1.3010 - 0.1183 \\
 \text{Log } Y &= 1.1827 \\
 Y &= \text{antilog of } 1.1827 \\
 Y &= 15.23 \text{ hours}
 \end{aligned}$$

Time required for painting first 6 buses is 91.38 hours ($15.23 \text{ hours} \times 6 \text{ buses}$)

Working note 2 - Time required for painting first 5 buses

$$Y = 20 \times (5) - 0.152$$

$$\text{Log } Y = \text{Log } 20 - 0.152 \times \text{Log } 5$$

$$\begin{aligned}
 \text{Log } Y &= 1.3010 - 0.152 \times (0.6990) \\
 \text{Log } Y &= 1.3010 - 0.1062 \\
 \text{Log } Y &= 1.1948 \\
 Y &= \text{antilog of } 1.1948 \\
 Y &= 15.66 \text{ hours}
 \end{aligned}$$

Time required for painting first 5 buses is 78.3 hours ($15.66 \text{ hours} \times 5 \text{ buses}$)

Control Ratios

- ❖ **Activity Ratio** measures the level of activity attained over a period by expressing number of standard hours required for actual production as percentage of the budgeted hours, as follows—

$$\frac{\text{Standard hours for actual production} \times 100}{\text{Budgeted hours}} \\
 = (16,200 / 15,500) \times 100 = 104.52\%$$

104.52% signify that BMW is need to work 4.52% extra than what it budgeted for to manufacture what actually it manufactured.

- ❖ **Capacity Ratio** indicates the actual utilisation of budgeted hours. It is a measure which express actual working hour as percentage of budget hours (or maximum possible number of working hours).

$$\frac{\text{Actual working hours} \times 100}{\text{Budgeted Hours}} \\
 =(15,000 / 15,500) \times 100 = 96.77\%$$

96.77% signify that BMW actually worked for 96.77 hours against every 100 possible hours.

Or Budgeted Capacity is utilized upto 96.77% and 3.23% capacity remains unutilised.

Note—

Instead of formula used above, Capacity Usage Ratio can also be measured using below mentioned formula—

$$\frac{\text{Actual hours worked} \times 100}{\text{Maximum possible working hours}}$$

- ❖ **Calendar Ratio** is a measure where actual number of working days are expressed as number of working days during budgeted period.

$$\frac{\text{Actual number of working days in a period} \times 100}{\text{Number of working days in related budgeted period}} = (25/26) \times 100 = 96.15\%$$

Efficiency ratio indicates the degree of efficiency attained in production. It is expressed in term of standard hours for actual production as a percentage of the actual hours spent in producing that work.

$$\frac{\text{Standard hours for actual production} \times 100}{\text{Actual hours worked}}$$

$$=(16,200/15,000) \times 100 = 108\%$$

108% signify that efficiency is 108% or task for which 108 hours is available finished in 100 hours.

Working Notes I - Calculation of standard hours for actual production

Sr. No.	Product	No. of Unit produced	No. of men hour required per unit	Total Standard Hours
1	Seat handle (B-SH-101)	1,200	6	7,200
2	Seat cover (B-SC-102)	750	12	9,000
Total standard hours for actual production				16,200

Working Notes 2 - Calculation of monthly budgeted hours

Annual budgeted hour=1,86,000

Monthly budgeted hour=1,86,000 hours/12 months=15,500

Working Notes 3 - Calculation of actual hours for actual production

Sr. No.	Particulars	Quantum in No.
1	No. of days production function worked	25
2	No. of hour in day	8
3	No. of worker in division	75
Total actual hours for month		15,000

Note – All calculations are on monthly basis.

