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CA FINAL – SCM & PE
(New Syllabus)

Case Study Digest (CSD)
Special Batch

(Notes for Private Circulation only)

-: INDEX :-

-: Compiled by :-

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About CA Rakesh Agrawal

- He passed his B. Com examination from Ness Wadia College of Commerce, Pune in 1989 with distinction.
- He was the Captain of his college Chess Team.
- He was adjudged as the Best Mountaineer of the College for 1988 – 89 year.
- He received the Gold Medal from University of Pune in the Special subject of Cost & Management Accountancy at B. Com level.
- He passed his M. Com. Exam also from University of Pune (external), with the specialization in Advanced Cost & Management Accounting. Of course, he again cleared this exam with distinction.
- He cleared his ICWA examination in the first attempt in December, 1990 and stood Third in the Pune Chapter of Cost Accountants.
- He started teaching the subject of Costing at Pune Chapter of Cost Accountants in the year 1991, as a visiting faculty.
- He completed his CA Final examination in November 1992 attempt with 32nd Rank in All India Merit.
- He has cleared Information Systems Auditor (ISA) exam of ICAI in the very first attempt.
- He has passed State Eligibility Test (SET) in Commerce in the very first attempt.
- He has also passed the Mutual Fund exam and Derivatives Core Module, conducted by National Stock Exchange.
- He is the Founder of Vidarbha Professional Academy (1996), Nagpur.
- He has launched a free mobile app titled as "Costing Dictionary by CA Rakesh Agrawal". You may download it from Google Playstore.
- He has an online store **www.carakeshagrawal.in** for e-commerce. Students can buy video lectures from this website and study anytime anywhere.
- He is a Teacher by Passion and Chartered Accountant by Profession.
- He is well known for Conceptual Coaching and Student Friendly nature. At the same time he maintains classroom discipline.
- He teaches you a subject for your life time. He also tries to co-relate the subject with day to day life.
- He believes that "Education is not merely getting a Degree, but it is gaining Knowledge".
- He enjoys teaching and he wants all of you to enjoy learning the subject also.

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Preface to Special Batch of CSD

Dear Student Friends,

You are aware that ICAI issued a Case Study Digest containing 49 new questions for practice. It is just like a Practice Manual. In this special batch, I will try to cover these questions to remove the fear of CSD from the minds of students. However, please note the changes made very carefully as follows :

- I noticed certain errors in the ICAI CSD like : (a) spelling errors (b) grammatical errors (c) errors in the construction of sentence (d) irrelevant matters (e) calculation mistakes (f) printing errors etc. Hence, I got it typed again and carried out the necessary corrections to the best of my ability. However, I have not altered the 'Core Contents' of ICAI.
- I have dropped the repeat questions, which we have already covered either in our Regular Batch notes or in Amendment Batch notes. This is done to avoid duplication of work. Suitable reference of Regular Batch notes or Amendment Batch notes is given at the respective places.
- Presentation of the answers of Practical Questions is modified by me, to make it easy for your understanding.
- If my views differ from ICAI views, then I will discuss it separately in the Video Lectures of this Special Batch.
- Those who are de-motivated after reading CSD, may listen to my YouTube Video Lecture titled as "Remove the Fear of Case Study". You may visit our YouTube channel and subscribe it for all future notifications.

I hope you will get benefited by this and will feel more confident to take up the Institute's Exam. Your suggestions and constructive comments are always welcome to make further improvement. You may use my email id for such suggestions.

TQM says - "There is always a scope for improvement".

Best of Luck and Happy Learning !

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Few Examples of Errors Corrected by me in this CSD

Errors in ICAI Case Study Digest	**Corrections done in our Notes**
Good	Goods
There	Their
Then	Than
Go green	Go ahead
Mr. 'X' was presented at the meeting	Mr. 'X' was present at the meeting
Sentence is written in 'Present Tense' for past happenings	Written in 'Past Tense' to give it a correct meaning
Seem-less	Seamless
Preciously	Precisely
Advantaged	Advantageous
Compute the will the amount to be make available as profit sharing pool	Compute the amount that will be available as a profit sharing pool
In ration of either score scored	In relation to performance score
Saving in move to JIT system	Saving in moving to JIT system
% to sales to profit	% of profit to sales
Canteen works around the clock	Canteen works round the clock
Subsidiary	Subsidy
Management may also give weight to qualitative and non-monetary quantitative factors.	Management may also give weightage to qualitative and non-monetary factors.

Friends the above is not a complete list of all the errors but just a few examples.

I had to go through the entire CSD of ICAI to understand it first. Get it typed and edited for your benefit. Hence, it took some time for me to come out with this Special Batch. In this process, if I have committed some additional errors in these notes, then you may please bring it to my notice through email, so that I will get it corrected at my end.

I wish the people at Board of Studies (BOS) of ICAI will take due care in future to avoid such mistakes. If these errors occur in the exam papers, then it may confuse the students and waste their valuable time. It may lead to multiple interpretations also.

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1 CASE STUDIES

Case Study 1

BA is the second largest airline in the Country 'X'. ....

It is already included in the Amendment Batch 4 Notes : Q. 1 of RTP Nov. 2020 Exam.

Case Study 2

Bhalla & Singh LLP (BS LLP) is an accounting firm in the 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 of 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 of 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) explains 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 LLP's existing performance management system from the 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 LLP's performance management system.

Solution 2 :

(i) Essential Components at 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 organisation's structure** along with determination the level of decentralization.
- Establish **responsibility centres** and identify the person responsible for performance of each such centre.
- Establishing the **system to identify KPI** against which performance will be measured 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 factors) – 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 indicators) – Second aspect of Building Block Model is to establish the standards or yardsticks for determination of performance 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 measures 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 organisation 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 it measure net profit and growth against standard established internally.

Reward System

Although **non-partners** of BS LLP are getting variable component of their remuneration / rewards based upon their rating by immediate boss and peers, but the criteria of rating are not clearly defined and weightage is also not mentioned for rating by boss and rating by peers. If such criteria's are not rational, it 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 is shared or the entity as a whole. It is obvious that, if partners are getting reward based upon measures, which they can't control they may be de-motivated. This may not improve the performance of bad performing divisions, because they are also getting reasonable amount as share in profit due to better performance by other departments.

(iv) Advise to Improve the Performance Management System :

First and foremost, BS LLP should consider all the **dimensions** of performance as per building block model to ensure 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 of delivery of service, the manner and timing of delivery.

Since staff is the key resource at BS LLP, hence it is essential to make optimum and effective **resource utilization.** In order to measure the productivity of the staff, hour charged as percentage of total available hours / total hours paid can be computed. This ratio will also signify the peak and off peak 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 parameters 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 standards, 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 BS LLP. Reward should be based upon those criteria for which staff is responsible or has control, so partners at BS LLP must get the share in divisional profitability and non-partner staff must get the variable share based upon their productivity.

Case Study 3

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 resources of BMW is highly skilled and well versed with latest tools and techniques of respective functional area. BMW is an innovative company and always tries to improve its performance.

Till date standard costing at BMW is limited only up to calculation of variances. 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 variances identified, if any. Not only this, but cost controller is also interested in incorporating relevant costing and learning curve in standard costing and budgetary control system. With the help of management accountant, he is 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 man-hours to make while product B-SC-102 takes 12 man-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 effect will be terminated post 6^{th} unit.

Extracts and Values from log tables are -

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 determining 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 standard labour hours of painting division for management accountant, incorporating learning curve.

(vi) CALCULATE and INTERPRET control ratios for Fabrication Division.

Solution 3 :

(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 mix and material yield variance). Hence breaking down them in parts and investigation of each element becomes essential.

So even favourable variances need to be investigated. To understand this statement a suitable illustration can be : Let's assume that we are buying raw materials in a price competitive environment. We purchased inferior quality material (whose price is comparatively less). On one side, it will lead to favourable price variance and on the other side there will be substantially more scrap and rework, and thus it will lead to unfavourable usage variance.

(ii) Planning & Operating Variances

Planning Variances – 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 yardstick for comparison with actuals. It arises due to error in planning for the unknown future. These are also known as 'Uncontrollable Variances'. These are the variances for which your operational team is not responsible.

Operating Variance - These variances arise due to variation in actual performance in comparison with revised standard. These are the variances for which your operational team is responsible. These are also known as 'Controllable Variances'.

(iii) Variance Analysis and Relevant Cost

Traditional approach to variance analysis is to compute variance based on acquisition cost (incurred out of pocket i.e. explicit cost) 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; then it will also result in loss of contribution. It is known as opportunity cost, which is an implicit cost and also relevant.

Hence it makes sense, if we incorporate relevant costing to variance analysis; in term of contribution lost on scarce resources / 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 -

Usage Variance = (Standard Quantity – Actual Quantity) x Relevant Standard Price

Where, relevant standard price is standard cost of acquisition of scarce resource (say material) and also contribution lost (for some other product, where this material; otherwise was 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 thereto.

Due to learning curve, standard time established soon becomes outdated yardstick for performance evaluation. Hence computing labour variance with such an out-dated standard is meaningless from the perspective of planning and control.

For example - we may assume standard time as 5 labour hours to produce 1 unit of output. Hence, to produce actual output of 1,000 units, we will need 5,000 standard labour hours. However, due to learning effect a worker may not actually require 5,000 hours but needs only 3,600 hours. Suppose actual time taken by the workers is 4,000 hours, then the labour efficiency variance would be favourable, if we compare it with original standard time of 5,000 hours. However, if we compare it with revised standard time of 3,600 hours (due to learning effect), then it turns out to be unfavourable. It means, our interpretation of variance may go wrong, if we ignore the learning curve effect. Hence, effect of learning curve should be in embedded while setting the standard.

Even in case of material related variances, learning curve may have some implication on consumption of material due to elimination of defect and wastage after the learning effect. Variable production overhead, which are associated to labour hours may also get impacted by learning curve. Hence considering the effect of learning curve is essential for material and overhead variances too.

(v) Revised standard hours for Painting Division

A learning curve equation is : $Y = ax^b$

Where -

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 learning coefficient

Average time for painting first 6 buses

$$
\begin{aligned}
Y &= 20 \times (6)^{-0.152} \\
\text{Log } Y &= \text{Log } 20 - 0.152 \times \text{Log } 6 \\
\text{Log } Y &= \text{Log } 20 - 0.152 \times \text{Log } (2 \times 3) \\
\text{Log } Y &= \text{Log } 20 - 0.152 \times (\text{Log } 2 + \text{Log } 3) \\
\text{Log } Y &= 1.3010 - 0.152 \times (0.3010 + 0.4771) \\
\text{Log } Y &= 1.3010 - (0.152 \times 0.7781) \\
\text{Log } Y &= 1.3010 - 0.1183 \\
\text{Log } Y &= 1.1827 \\
Y &= \text{antilog of } 1.1827 \\
Y &= 15.23 \text{ hours}
\end{aligned}
$$

Total time required for painting first 6 buses = 15.23 hours x 6 buses = 91.38 hours

Average time required for painting first 5 buses

$$
\begin{aligned}
Y &= 20 \times (5)^{-0.152} \\
\text{Log } Y &= \text{Log } 20 - 0.152 \times \text{Log } 5 \\
\text{Log } Y &= 1.3010 - 0.152 \times (0.6990) \\
\text{Log } Y &= 1.3010 - 0.1062 \\
\text{Log } Y &= 1.1948 \\
Y &= \text{antilog of } 1.1948 \\
Y &= 15.66 \text{ hours}
\end{aligned}
$$

Total time required for painting first 5 buses = 15.66 hours x 5 buses = 78.3 hours

Time taken to paint 6^{th} bus

= Total time taken by first 6 buses - total time taken by first 5 buses

= 91.38 – 78.30 = **13.08 hours**

Hence, time required to paint 6^{th} bus and onwards = **13.08 hours** each (because learning curve will cease post 6^{th} unit).

Revised standard time required to paint all the 15 buses = **78.3 hours** (for first 5) **+ (13.08 hours x 10 units)** (for next 10 buses) = 78.3 hours + 130.8 hours **= 209.10 hours**

(vi) Control Ratios for Fabrication Division :

WN 1 - Calculation of standard hours for actual production

Sr. No.	Product	No. of units produced	No. of man hours 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

WN 2 – Calculation of monthly budgeted hours

Annual budgeted hours = 1,86,000 (given in the question)

Monthly budgeted hours = 1,86,000 hours / 12 months = 15,500

WN 3 – Calculation of actual hours for actual production

Sr. No.	Particulars	Calculation
a	No. of days production function worked	25 days
b	No. of hours worked in a day	8 hrs / day
c	No. of workers in fabrication division	75 workers
	Total actual hours for the month (a x b x c)	15,000

Note - All calculations are on monthly basis.

- **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 -

$$\frac{\text{Standard hours for actual production x 100}}{\text{Budgeted hours}}$$

= (16,200 / 15,500) x 100 = **104.52%**
104.52% signify that BMW has worked 4.52% extra than what it budgeted. It means, actual output (i.e. activity) is more than budgeted output / activity.

- **Capacity Ratio** indicates the actual utilisation of budgeted capacity. It is a measure which express actual working hours as percentage of budget hours (or maximum possible number of working hours).

$$\frac{\text{Actual working hours x 100}}{\text{Budged hours}}$$

= (15,000 / 15,500) x 100 = **96.77%**
96.77% signify that BMW has used 96.77% of its budgeted capacity.
It also means that 3.23% capacity remains unutilised.

- **Calendar Ratio** is a measure where actual number of working days are expressed as number of working days during budgeted period.

$$\frac{\text{Actual number of working days in a period x 100}}{\text{Number of working days in related budgeted period}}$$

= (25 / 26) x 100 = **96.15%**

96.15% indicates that the number of actual working days are lesser than budgeted.

- **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.

$$\frac{\text{Standard hours for actual production x 100}}{\text{Actual hours worked}}$$

= (16,200 / 15,000) x 100 = **108%**

108% signify that labour efficiency is 108%. It means the workers are working more efficiency than expected.

Case Study 4 :

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

Management team at SFC 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 in age group from **40 to 60 years** and belongs to **price sensitive** income group. SFC in this way is able to reach to end customer through retailers by manufacturing cloth themselves. Acquisition of SDC by SFC is largely successful as it results in relatively high increase in sales and profits, both.

Problem Point

But the sales & profits are not growing at same old rate now, top line and bottom line witness the slowdown, which may be due to exhausting 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 acquisition of one of the **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 SFC's 'competitive ability and cost competency'.

(v) EVALUATE possible acquisition of cloth retail chain 'Paridhaan' by SFC.

Solution 4 :

(i) **Value Chain** (as suggested by Michael E Porter) describe activities of organisation, those add value to input before it becomes output. Value Chain can be expressed as a way of assessing and explaining competitive advantage while identifying cost drivers.
It split down company's activities between those which are 'primary' (i.e. those result in production of goods / rendering of services) and those which 'support' (i.e. assist in such production). These activities are shown in figure below :

Porter's value chain

<table>
<tr><td rowspan="4">Support or {
secondary {
value {
activities {</td><td colspan="5">Firm Infrastructure</td><td rowspan="4">M
A
R
G
I
N</td></tr>
<tr><td colspan="5">Human Resource Management</td></tr>
<tr><td colspan="5">Technology Development</td></tr>
<tr><td colspan="5">Procurement</td></tr>
<tr><td></td><td>Inbound Logistics</td><td>Operations</td><td>Outbound Logistics</td><td>Marketing and Sales</td><td>Service</td><td>M
A
R
G
I
N</td></tr>
</table>

Primary Value Activities

Concept of Value

Successful organisations are able to create value for its customers (i.e. for end users), either by offering differentiation (more utility through customized / unique product / services at same price) or cost competitiveness (same utility at par with competitor, but at lower price).

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

<table>
<tr><th colspan="2" rowspan="2">Scope / Scale of Strategy</th><th colspan="2">Competitive Advantage can be obtained through</th></tr>
<tr><th>Lower Cost</th><th>Uniqueness</th></tr>
<tr><td rowspan="2">Competitive Scope can be</td><td>Broad Target (Industry Wide)</td><td>Overall Low Cost Leadership</td><td>Differentiation</td></tr>
<tr><td>Narrow Target (Particular Segment)</td><td>Cost Focus</td><td>Differentiation Focus</td></tr>
</table>

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) Strategy at SDC

Since SDC is 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 in a narrow segment.**

(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 e.g. exporting.

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

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

Effects of forward integration on competitive ability and cost competency

a) Post integration SFC will operate two production lines. One being weaving the fabric i.e. cloth manufacturing and another being stitching i.e. manufacturing of readymade clothes. Resultantly, transfer pricing will be one cost aspect which needs 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 manufacturers, because due to diversion of management focus in two production line. SFC is now directly impacted by customer / consumer who has variety of options apart from SFC's clothes 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 require additional training.

(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 **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 it will reduce the competition from other brands. SFC may remove other products which are lying along with SFC products at selling shelves of retail outlets.

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 / retail shops of SFC (through acquisition of Paridhaan); so, it may not be able to attract requisite number of customers to cover the fixed cost.

c) In order to complete successfully, product range at SFC may have to be increased, so that it can complement its product with product of another manufacturers; this may not be possible in a cost effective manner.

Conclusion

SFC should acquire retain 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 retail outlets 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 is required. In addition, smooth integration of three different activities (i.e. value chains) and cultural / behavioural changes of employees of three different organisations are also essential for smooth functioning of business.

Overall, the benefits of acquiring retain chain needs to be compared to the financial cost and other qualitative factors.

Case Study 5 :

Marcus Neo-Fashion Limited (MNFL) is a leading brand in fashion world. Company is dealing in both fabric and readymade 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 centres 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, a 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 on 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 @ 14% and earning is growing at 12% which is 4% higher 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 add value by incorporating innovations. He quoted that presently average defect rate is 1.5% of total production.

On this VP-Marketing added, 'skilled employee means better process and better processes leads to competent value chain which can serve highly customised product, hence pre-conceived 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 products will meet and set the latest style statement in market; eventually help MNFL to acquire new customers within existing market, without incurring much on advertisement and sales 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 5 :

(i) Performance Management Indicators

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

- **Financial** Performance Indicators e.g., ROI, EPS and EBITDA
- **Non-Financial** Performance Indicators e.g. Balance Scorecard.

Performance indicator having **objectives** of

- Evaluating the achievements of organisation objective
- Compensate manager

(ii) Need of non-financial performance indicators

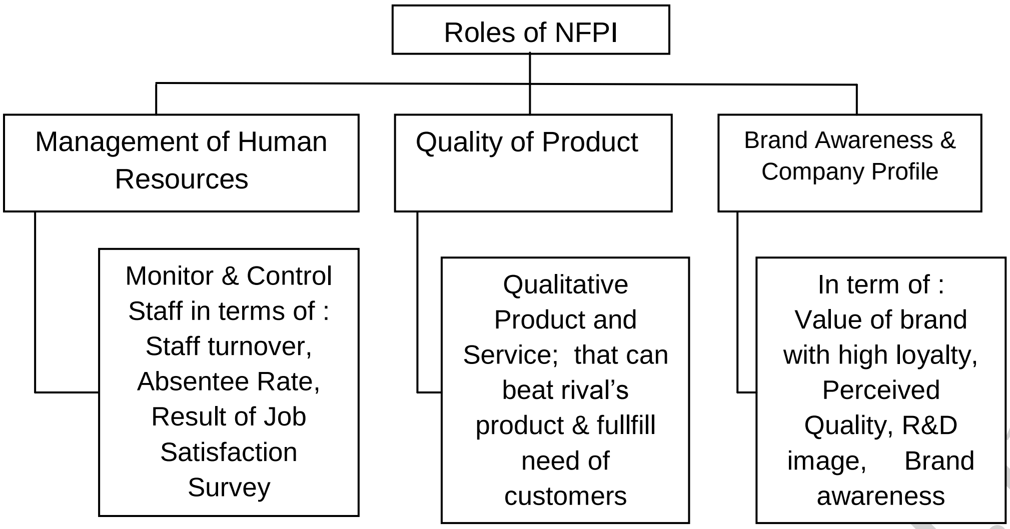
Since financial performance indicators are profit oriented only, but strategy needs to be sustainable apart from profitable. Hence in order to overcome the inadequacy and unjustifiable nature of financial performance indicators, non-financial performance indicators should also to be used. Hence **opinion 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 products will result in high brand image & high intellectual 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 Resources
- Quality of Product
- Brand Equity



(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-

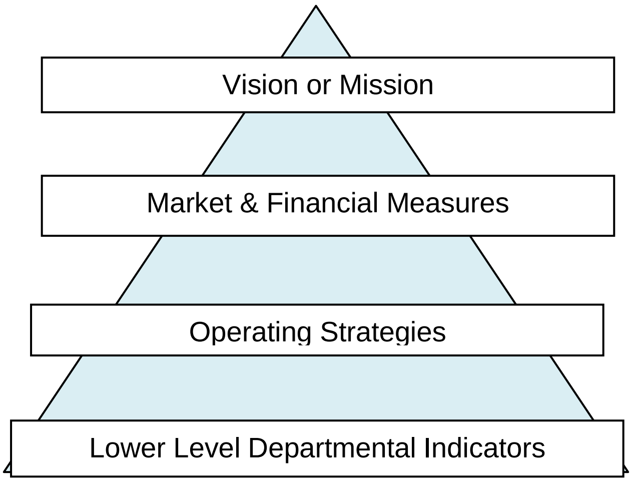
Balanced Scorecard (By Robert Kaplan and David Norton in 1990)

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 : i.e. how can we continue to improve and create value? – Suggested by VP – HR
- Internal Business Process Perspective : i.e. what we must excel at? – Suggested by VP – Operation and Planning.
- Customer Perspective : i.e. how do customers see us? – Suggested by VP – Marketing and Chief Information Officer.
- Financial Perspective – Already under consideration i.e. how do we look to shareholders?

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 achieve Corporate Vision and Mission the focus should be on –

- Market Related Measures and
- 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 a drawback of performance pyramid, that it tends to concentrate largely on shareholders and customers.

Building Block Model (By Fitzgerald and Moon)

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

- Dimensions are Critical Success Factors (CSFs). These are the goals set for measuring performance.
- Standards are Key Performance Indicators (KPIs). Standards should be achievable, fair and owned (i.e. acceptable) to the employee.
- Reward is essential in order to keep workforce energetic and motivated – hence should be performance related. It should be clear and controllable.

Performance Prism (By Andy Neely and Chris Adams)

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

Five Focus Area's

Stakeholder Satisfaction – Identify the stakeholder and understand their needs

Strategies – Should be drafted in order to fulfil stakeholder's needs

Process – Critical processes to fulfil such needs & strategies

Capabilities – it needs to operate our processes more effectively and efficiently

Stakeholder Contribution – Need from our stakeholders to maintain capabilities

Case Study 6 :

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, non-stick dishes, kitchen organizers, knifes, cardboards, countertop stickers, ice cream moulds, chocolate moulds 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 finished 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 WIP, 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 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 store 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 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 offer competitive prices accompanied with free shipping and on time delivery. That is all too much for a developing market like India.

The labour 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 6 :

(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 price 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 goals, myriad managerial techniques and tools like Value Chain Analysis / Value Engineering, Six Sigma, are used. These techniques are used keeping in mind the focus (i.e. to reduce 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 in intense specifically with regards to the prices of similar products. Since the products offered by Dream 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 offer low prices only if a commitment for long term purchases is made by the firm.

(ii) **Currently,** Dream Homes operates physical stores at which 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 the 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 / Flipkart 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 e-commerce, 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 on 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 centres. 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 firm 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 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 lesser will be the overall cost of product).

d) Most E Retailers maintain number of distribution centres 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 centres 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 multifaceted 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 skilful 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 7 :

Bread and Butter Company (BBC) started its business a couple of years ago 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 age 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 product 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 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 Take 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 pre-packed meals. The kitchen was out of space to accommodate the current staff comfortably. The myriad ideas took JTI in a mirage creating problem in collaboration 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 saviour that could prevent the demise of JTI.

One of the management person, 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 use 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 Take 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 items	33,455	28,727	24,727
Desserts purchased	46,920	40,290	34,680
Beverages purchased	39,048	42,857	46,667
Labour	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 mark-up of 10% on purchase cost. Georgian preferred frozen foods and fresh foods equally.
3. Desserts are all time favourite irrespective of seasonal variations.
4. Of the desserts and frozen revenue, 60% sale was dedicated to desserts.
5. 50% labour was identified towards meal preparation, 40% towards sandwich and breads and rest 10% for serving desserts. Beverages did not take labour hours since they could be refilled in self-servicing dispensers through which clients were served. Once they served themselves with their choice of beverages, 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 staff were paid on the basis of their recipes being approved.

Product / Service Wise Analysis (₹ 000)			
	Year Ended December 31,		
	2019	**2018**	**2017**
Revenue from breads and sandwiches	41,000	45,000	49,000
Less: Cost of food items (40%)	44,000	38,000	31,200
Less: Labour (40%)	16,000	14,000	12,400
Gross Profit	- 19,000	- 7,000	5,400
Revenue from desserts (60%)	55,200	47,400	40,800
Less: Cost of desserts purchased	46,920	40,290	34,680
Less: Labour cost (10%)	4,000	3,500	3,100
Gross Profit	4,280	3,610	3,020
Revenue from frozen food item (40%)	36,800	31,600	27,200
Less: Cost of frozen food item	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 purchased	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 (60%)	66,000	57,000	46,800
Labour (50%)	20,000	17,500	15,500
Other operating cost directly identified (i.e. rewards to staff + transportation)	9,000	9,500	8,400
Profit	- 18,000	36,000	63,300

Solution 7 :

(i) The idea to expand the business by diversification of product line and adding new products/services like frozen items, beverages, train meals, desserts, delivery of food to passengers at train were all directed towards growth and a better future of 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 focussed. 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 effect 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 hygiene 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 out 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 rewards paid to staff.** Currently, staff receives rewards 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 centre. 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 requisition from production department which has to be operated 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 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 favourable 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 that storage facilities of raw materials and food items are totally messed up. We need to introduce an effective housekeeping system such that warehouses are organised systematically with all raw materials arranged by employing specific techniques like 5S for storage and organization. This will lessen the time required to locate them when on demand thus removing the bottleneck developed due to time consumed for non-organization.

(ii) The current business situation appears to lack planning and systematic approach. With a strategized planning focussing 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 manufactures only two of those and they are breads & sandwiches and train meals. The three are just purchased and served at a margin.

It should be noted that sandwich business got a hit due to quality compromises 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 beverages business is good and requires a little amendment since beverages will have to be 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 resource 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 ₹ 6.33 Cr. back in year 2017 and ₹ 3.6 Cr. back in year 2018.

(iii) 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 favourable and ensure business success irrespective of what industry we choose to operate in.

For cost saving strategies, JTI needs be associate some direct cost to the revenue it earns. For example, rewards 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 8 :

Welcome Foodies (WF) was a small restaurant in and around the busy city of Newtown. The city was located on 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 in 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 out to have been straight forward. 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 a trouble since its credibility was questionable to lenders. WF could borrow just enough funds from its familiars to hire additional staff to serve the growing crowd. Albeit the new staff 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 (i.e. fear of getting in a tight place) having to dine among the proliferating (i.e. ever increasing) 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 the 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 equipments. 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, chillies, 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, but they 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 who 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 8 :

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 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 issues evidenced in the day to day businesses. Quality issue in physical product means compromise in the shape, size, colour, 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 / service 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 i.e. DMAIC. Now let us see how we can implement each phase to improve the WF's business situation.

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 misbehaviour.
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 lot of scope for 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 communication should be out rightly 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.

Financial requirements can be fulfilled by building up good credibility 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, standardise 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 use 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 centre, 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 start up items like sauces, pickles and serving them with starters will help eradicate in 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

The 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 9 :

Mrs. Kates is a retired dedicated mom taking care of her family and doing every bit to give the best 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 strained and brain at placidity (i.e. cool & calm). 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 respond after giving a deep thought.

Days changed, month 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 (i.e. superiority) 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 educational 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 her try 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. His efforts and legacy created successful businessmen and women, tax consultants and economics scholars. HCI College on the other hand was also down to earth and did not bias (i.e. differentiate) among lower and higher class. They charged relatively low fees compared to DCC and was popular among youths. It gave great professionals to the country, who after their graduation from the college pursued further studies.

From last few years, many students were complaining about the rapidly increasing tuition fees, for which they went on a strike demanding rate cut. College 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 the colleges were trying to come up with online courses and distance learning materials to assist their students in the event they failed to attend any lectures. In addition, HCI is also planning to hire additional freelancers to work with students during evening time to groom their skills and assist them to 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 depends 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 (i.e. strong friendship) 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 (i.e. to motivate) her son to value those and understand the sheer importance of his precious student life which once gone will never be back. To harness all the information she had, and relying on your omnipotent (i.e. powerful) knowledge, Kates came to you and provided you with facts (see 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 (i.e. luck or chance) 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 details. It was all her love and care for her son that transpired (i.e. revealed) 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 enquiries 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.

<u>Annexure</u>

DCC and HCI facts and figures for the most recent year 2019

	Dayawan College of Commerce (DCC)		**Hridyam Commerce Institute (HCI)**	
	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 teachings days in a year		250		250
Number of days lectures received		240		230
Students passing		5,700		7,500
Students getting jobs		5,100		7,000

Solution 9 :

(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 improvements or could start from scratch and build 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 : Dimensions, Standards and Rewards.

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 term 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.

Financial (Results) :

Competitive performance

Financial performance

Non-financial (Determinants) :

Quality

Flexibility

Resource Utilization

Innovation

Standards

Think standards as targets that are to be achieved based on which performance attributes as listed above will be measured. For the standards to be agreeable and acceptable by the concerned department or the responsible individuals, such standards must possess three features which are ownership, achievability, and equality.

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 system again should possess three qualities which are clarity, motivation and controllability.

(ii) Mrs. Kates wants us to evaluate two prominent colleges of Vilaspur 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 they have been doing.

Financial performance can be measured by percentage increase in revenue and net profit margin. DCC remains the best performance 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 lecturers / 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 in 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 Applications / No. of enquiries	70.00% (3,500 / 5,000)	75.00% (3,000 / 4,000)	7.14% (5 / 70)	83.33% (3,500 / 4,200)	95.00% (3,800 / 4,000)	14.00% (11.67 / 83.33)
Taxation	No. of Applications / No. of enquiries	80.00% (3,200 / 4,000)	78.95% (3,000 / 3,800)	-1.31% (1.05 / 80)	93.90% (3,850 / 4,100)	97.44% (3,800 / 3,900)	3.77% (3.54 / 93.90)
	Market Share (in Revenue)		36.00% (180/500)			22.00% (110/500)	
Financial performance	% increase in revenue		10.00% (given)			7.90% (given)	

	NP margin		27.78% (50/180)			24.55% (27/110)	
Non-financial (Determinants)							
Quality	Students Passing / total students		95.00% (5,700 / 6,000)			98.68% (7,500 / 7,600)	
	Students getting jobs / students passing		89.47% (5,100 / 5,700)			93.33% (7,000 / 7,500)	
Flexibility	See explanation						
Resource Utilization	Days served / Teaching days		96.00% (240/250)			92.00% (230/250)	
Innovation	See explanation						

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

Case Study 10 :

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 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 57 members in question paper preparation team. They were drafting new questions for every test.

Now we are having 22 members in this team, which is less than half of what we had. They are drafting lesser new questions and preparing papers with questions from past papers and other material of respective courses. In our student support and student counselling team we had, precisely, 68 members, 42 for face-to-face counselling and 26 available on phone calls. Now there are only 30 members, 12 for face-to-face counselling, and 18 available on phone calls 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 to 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 phones or tablet during test and other matters as told to you.

In that moment, your phone had buzzed, a notification from Newsgram, an application providing news across the world. Notification was about the contract between Abhyas Education Ltd., a 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 it to the CEO of Pariksha. Discussion and various meetings had been called and after that the 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 the 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.

Solution 10 :

(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 its improves the strategic position of a business apart from focussing 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, it was ignorance of competition. 'Enough students at the organisation' was just internal focus which leaded to ignorance of 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 of members of student counselling team may lead to heavy workload on remaining 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 (i.e. take away or reduce) the customers.

  Degraded quality of question papers and reduced student counselling team may lead to dissatisfaction in students. Further, question papers on mobile phones or tablet may be misused by students. Students may get higher marks in test series, due to mal-practice, however actual marks in the exam may be lesser. This may lead to dissatisfaction among students' parents, who are the ultimate customers of our 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 papers to the students of Delhi TSC, instead of 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 a situation instead of **proactive approach**.

- 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 to 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 problems, figure-out the main area which requires its service and finally comes out 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 value shop process is iterative (i.e. repetitive), 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 the primary activities are :

- Problem finding and acquisition (i.e. understanding of problem)
- Problem solving (i.e. developing alternate solutions)
- Choosing among solutions (i.e. identify best solution)
- Execution and control / evaluation (i.e. implementation of solution)

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 11 :

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 11 :

(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. The remaining processes are required to be re-engineered / re-structured, so that these 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, paperless 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. The 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 it is likely to increase their motivation 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 etc.

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 etc.

(iv) Staff Perception of BPR programme

Generally, people are not susceptible to change. Although the main aim of BPR programme 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 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 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's mind. This ingrained habit needs a change, which is not acceptable by the staff.

Case Study 12 :

"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 wax 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 product 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 be required 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 12 :

(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 mean that shareholder's returns may 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 may 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.

(ii) 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.

Case Study 13 :

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 went private), at that time it was one division business i.e. assurance brokerage business. Mr. Kaushal Jaiswal is a 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 wide presence across the nation in the form of 'sub-agency offices' equipped with professionally trained sales 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 provides 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 got 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 the country has tightened the registration criteria and hardened the norms.

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

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

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' called as 'Policy at your click' to sell the insurance products 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 below (in '000 Crores), analysts reached to a 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 terms of age of the client), is shown in table below for the 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 should 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% Long term debt	78	64	50
Current Liabilities	455	437	395
Current Assets	605	565	540

Applicable tax rate 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 ready to agree with 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 the next board meeting, the board is expected to pass a resolution on this agenda item in order to decide either to continue or sale the 'sub-agency office' division.

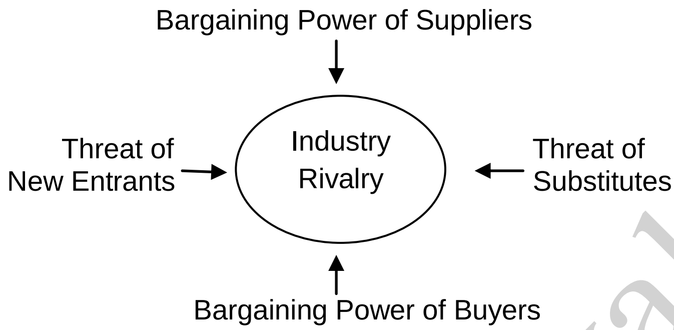
Required :

(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 13 :

(i) Michael E. Porter suggested **five forces 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 forces analysis. Since each of these five forces affect the competitiveness of business, hence can be used to assess the potential of any organisation 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 goods and services 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 are themselves getting into the direct sale 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 is not the only choice (business) available to SWAL. Hence, bargaining power of supplier is moderate.

Substitution among the brand – Life assurance products offer similar utility to client; hence can be easily substituted among the brands. It means, if insurance company 1 charges lesser premium than insurance company 2, client will buy policy of company 1. No doubt, switching is less viable once the policy is 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 as premises of 'sub-agency offices', which are largely on lease, has 30-year lease, this will reduce the lease cost as well as bargaining power of landlords apart from bringing stability.

The bargaining power of customers

Whether seller is a price taker or maker, is the outcome of bargaining power of customers. If the bargaining power of customer is high, the seller will become a 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 numbers of suppliers) and diversified, hence their bargaining power is low.

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

Switching – Once a policy is subscribed, then it cannot be easily switched with another policy, because the insurance contracts are long term in nature. Generally, a life insurance policy is issued for a person's age up to say 65 or 70 years. If a person wants to discontinue with an existing policy and wants to buy a similar policy of another insurance company, then the premium goes up substantially, due to increase in age. This high switching cost, reduces the bargaining power of customer considerably.

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 enhances the stiffness of competition; hence becomes a kind of threat. In case of 'sub-agency office' division, there are some major entry barriers -

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 the country has tightened 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 agents due to no new authorisation by insurance companies – As market is revamping, the agents are becoming competitors to the insurance companies and as mentioned insurance companies stopped authorising new insurance agents, hence this will act as an entry barrier for new insurance agents, which is a great positive of SWAL's 'sub-agency office' division and in fact the competitive advantage.

Learning curve and economies of scale – Since all the 23 insurance companies are dealing in life assurance and SWAL is a 20 year old organisation; hence learning curve and economies of scale are in favour of SWAL. The presence of SWAL in 580 cities, will act as a good entry barrier for new firms. Since new firms will require huge capital to be at 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 quiet 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; i.e. cutthroat competition. Presently SWAL's insurance business represent 14.55% (326/2240) of market share (in 2019-20) in comparison to 14.29% (280/1960) of market share five years ago. It means, there is no significant variation in the market share. The possibility of gaining new market share is limited that too at high cost (in form of advertisement and more after sales services).

Lack of differentiation – Standardise 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 moderate; because everyone has reasonable opportunity to grow. The moment growth stagnates, rivalry becomes stiffer because no one wish 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 life cycle. 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 and 2019-20 is 1.91%. The moment growth stagnated, rivalry becomes stiffer because no one wish to lose market share. Hence, there is intense competition in the market. In cases where market witnesses intense competition, operating efficiency is essential and reduction in cost becomes a 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 thinking to sale off the entire 'sub-agency office' division.

Now, let's 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 $1/3^{rd}$ of bottom line). Around 86% (280/326) of the revenue of assurance brokerage business 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 -

- Operating profit (EBIT / Revenue) – No doubt, operating profit has gone down from 12.4% (31/250) to 6.43% (18/280) in three years' time frame. But as earlier quoted, margin is positive and secondly, there is a sign of recovery as well. EBIT has increased in absolute terms (from 16 to 18).

- Return on capital employed (ROCE) [EBIT / (Equity + Long Term Debt)] – No doubt, ROCE has gone down from 15.5% (31/200) to 7.69% (18/234) 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 has 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 (540/395) to 1.33 times (605/455). 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 0.33 to 0.5, but under control.

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

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 becomes essential. Secondly, clients from all age group may not find it convenient to shift to 'E-platform' i.e. 'Policy at your click' and their resistance may result in losing business. Thirdly, they have easily available substitutes, because competitors may 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 your click', rest all are in 'sub-agency office' division. If SWAL re-structures itself fully as online solution for life assurance business, then it cannot absorb all the employees and many of them needs to be retrenched. Resistance will be there in both the cases because transferred employees may not have requisite skill set, resulting in poor quality of service and no job satisfaction to employees. Whereas in case of retrenched workers redundancy cost will become additional financial burden. This can be seen as exit barrier.

Legal aspect in terms of pre-closure of lease – SWAL has a practice to sign 30-year lease, while taking and 'sub-agency office' on lease, in order to reduce the lease cost and bring stability. It started the business 2 decades ago and expanded it 3 years ago and many of the 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, in the 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 is the USP of 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 resulted 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. We should continue with the 'sub-agency' offices.

Case Study 14 :

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 neighbouring 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 first, and then 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 is 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 x 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 kilometres (~ 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 (i.e. 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 m^3) of drinking water per day. 162 million gallons of drinking water for around 4 million people of the neighbouring 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 works 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 m^3/s) to a mere 220 cu ft/s (6.3 m^3/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 to 1,855 m above sea level, with better road network and district head quarter (shifted to NCT, earlier it was about 65 km. 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. As against 1 inter college in old Chapala, 5 inter-college established (one in NCT and 4 in nearby villages). This is 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 geological fault zone. This region was the site of a 6.7 magnitude earthquake in September 1992, with an epicentre 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 earthquake with a magnitude of 8.5 or more could occur in this region. If such a catastrophe occurs, then it will potentially result in dam-break, which would submerge numerous towns downstream, whose population totals nearly half a million.

In spite of concerns and protests, 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 Focussed Initiatives' is working with three objectives : Soil & Water Conservation, Green Energy Generation & Technology Promotions and Environment Protection and Promotion.

To conserve soil and water VHDCL is working on water harvesting and water harvesting tanks (capacity 3,000 litres each) were installed in the project affected villages for rainwater harvesting. Through this activity, beneficiaries were able to store almost 9 lakh litres 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 nearby towns and villages in year 2019-20. Moreover, to promote plantation of different fruit, fodder, and medicinal plant, 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

In addition to the above awards, VHDCL has also 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; then **ADVISE** the management regarding dimensions of TBL, and what are the perspectives composed by different dimensions of TBL. Also enumerate the challenges, expected benefits, and initiatives under each dimensions in the context of Vidyut Dam & Vidyut Hydroelectric Power Plant (1,000 MW).

Solution 14 :

British business author **John Brett Elkington** 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).

VHDCL, shows a strong commitment for CSR through the certification (regarding quality, environment and safety) which 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 behaviour.

The project has major concerns about the **displacement of town inhabitants,** followed by reduction in flow of Karaka River from the normal 1,000 cu ft/s (28 m^3/s) to a mere 220 cu ft/s (6.3 m^3/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 works 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 recognised as project affected. Even those officially recognised, allotted with land of poor quality or with multiple ownership claims. This concern substantiates an absence of a full-proof master plan.

It is not that the local residents were in complete distress. They are compensated with **alternative and better facilities** and **remedies** as well that too at **project cost,** which includes :

- Development of hill station to attract tourists – The New Chapala Town (NCT) is developed with semi-ultra-modern facility at the height of 1,555 to 1,855 m above sea level, as a pre-planned hill station which will attract the tourist. The creation of lake due to water reservoir of Vidyut Dam, scope of water sports is there. Hotels, Guides and Tour and travels will generate 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 km., hence life of locals will be further eased.

- Improved health facilities – NCT equipped with better health facilities. It got 80 bed modern hospital as against a 25 bed hospital situated in old Chapala town. Apart from this it also got 5 primary health centres with additional 75 beds in total.

- Improved Educational facilities in terms of hostel facility for 900 students and increase in number of inter-colleges.

Not only the local residents but **others too got benefited from the project,** such as 250 cusecs (~ 162 million gallons per day) of water supply to neighbouring state, which will meet drinking water need of around 4 million people, 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 Yogy as 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 geological fault zone. This region was the site of a 6.7 magnitude earthquake in September 1992, with an epicentre 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. If such a catastrophe to occur, will potentially result in dam-break and would submerge numerous towns downstream, whose population is nearly 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 Srrishti' is 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 fruits, 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 neighbouring 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 is 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.

This 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).

* * * * *

2 CASE SCENARIOS

Case Scenario 1 :

Corner is an online Pizza delivery business. Corner is one of the QSR (i.e. Quick Service Restaurant) that created its own system, website, and app. Corner's pizza baking points are having a home delivery system. Due to popularity of E Commerce awareness among the customers, online food order system came 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's 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 4 pm – 7 pm, 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 orders – 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 flavour 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 on 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

Required :

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

Solution 1 :

The performance pyramid covers not 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.

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 behaviour, engine's idle time etc. Using this data efficiently, money saving areas 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 will get translated into more business.

It can also assist Corner to reduce the fuel consumption and unnecessary overtime 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 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 the 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 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 flavour of pizzas, which is also related to the **quality** element of the performance pyramid and is a key driver of customer satisfaction.

Case Scenario 2 :

Surmount Cable Cars (SCC) is engaged in assembly of cabins used on ropeways. In order to assemble cabin, 3 major parts of different shapes and sizes are used. These parts are assembled with the 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 a set along with washer and all three spares collectively considered as set.

Since the plant facility of SCC is situated in a remote area, hence majority of the workers 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 need to re-order of such (Brass DIN 85) stores and spares items. Due to ignorance of workers towards understanding of the stock levels and their relevance, many a times we faced a situation of stock out. This further leads to stock out situation in some more cases, which results in contribution loss.

Reliable Hardware and Metal Works (RHMW) is a long standing supplier of Brass DIN 85 to SCC, hence reliable in term of both quality and delivery time. RHMW takes a single day as lead-time to deliver the re-ordered quantity. Despite the reliability of supplier, SCC wishes 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 to 4 months back. Employees are being trained to use the respective modules of SAP and integration among various functions / 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 are 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 2 :

(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 **reduces the cycle time and enhances the predictability,** in order to promote value to customer. Kanban system holds specific amount of material (divided in **Kanban Size).** Kanban system also maintains information regarding quantity, storage location, vendor and details of products and parts.

While calculating Kanban size and number of Kanban required, following **assumptions** are made –

- 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 terms of space to store number of Kanban is met.

Kanban in non-manufacturing facilities

Kanban is originally designed for manufacturing entities but **can** be applied to non-manufacturing concern as well, for smoothening of workflow rather than inventory management. In Kanban, signal based dashboard is used to **manage and improve the flow of work** to be followed and also categorises the work into **to do, on-going** and **done** (in some cases **backlog** category also can be added).

(ii) Kanban Size and Number of Kanban

Kanban Size can be calculated using formula i.e. **(C) x (LT) x (L) x (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 terms of weeks).

L stands for no. of locations of Kanban (Note – Whenever any entity implement the Kanban then keep one container of material at both the locations (i.e. entity itself 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 remains same, then smoothing factor can be one.

Calculation of Kanban Size

C – Consumption per day is **200 units** i.e. 1,200 per week / 6 days a week

LT - Lead time is **1** day

L – Locations are **2** (RHMW and SCC) and

SF – Smoothing Factor is **1**

Therefore, the **Kanban Size is** 200 x 1 x 2 x 1 = **400 Units** in each Kanban.

Note - EOQ can also be practiced 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 –

$$\text{Number of Kanban} = \frac{\text{Quantity of safety stock + consumption during lead period}}{\text{Kanban Size}}$$

Calculation of numbers of Kanban

Quantity of safety stock in given case is 3 days x 200 (daily consumption) i.e. 600.

Consumption/demand during lead period is 1 days x 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 'visualisation of the flow of the work, reducing WIP, managing process, making process policies explicit, incorporating feedback and using scientific techniques'. In order to do so, while applying Kanban system SCC need to consider following factors -

1. Is 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 on Kanban size as well.

Some specific precautions for SCC

1. 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.
2. **Demand/Consumption needs to be predicted with reasonable assurance** in order to implement Kanban, although one thing, which is in favour of SCC is that it knows the consumption of Brass DIN 85 is constant throughout the period.
3. SAP which is used as **ERP** system in SCC, **needs 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 Scenario 3

Shakti Automobiles Limited (SAL) is a leading battery operated e-rickshaw manufacturing firm, and sells it under brand name 'Shahi Sawari' with three models – Super, Star, and Speed. SAL started this business around 5 years back when it was the 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 cost in manufacturing of such e-rickshaw is variable in nature. Company was performing well, earning reasonable profits and enjoyed large market share up-till two years ago, majorly due to first mover advantage. But due to increasing competition as new entrants are coming into market and rough macro-economic conditions, market share has started shrinking. Resultantly profit has started declining. If no major steps are taken, then the company may run into red in years 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.

Mr. Swami, VP Marketing mentioned that it is difficult to maintain same level of sales in upcoming years because price of Shahi Sawari is much higher than price offered by all the competitors in the market. Quality and features of other competitors are also similar.

Mr. Dutta, Customer Relations 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's 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 workers are unskilled; secondly large amount and categories of raw materials are dumped by stores at production floor; that too well prior to need. These two reasons have caused worker's failure to differentiate among parts which look similar. He also mentioned entire business process, especially production process is quite old and it contains certain activities which are purely unnecessary. He also highlighted the importance of industry automation and gives 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 present at the meeting as deputy to Mr. Reddy. Post meeting you came back to your desk and started working. Mr. Reddy called you to his cabin and asked you to prepare a draft report (i.e. ADVISE) as asked by the CEO; and meet him with the copy of draft after half an hour from now.

Solution 3 :

Report

Addressed to :

The Office of CEO,

Shakti Automobiles Limited (SAL)

Dated – 19th Jan 2021

Report on underlying reasons behind current performance and application of Lean Management & Cost Management tools

(i) First reason behind weak financial performance is highlighted by Mr. Swami i.e. **Price** of SAL's Product 'Shahi Sawari' is much higher than the price offered by all the competitors in market. Quality and features of other products are also similar.

Target Costing as a cost management technique can be applied for cost reduction. Since market conditions are stiff and bargaining power of customers is high due to multiple competitors, we need to reduce the price without affecting our profit margin. The price offered by our competitors should be considered as a 'Target Price' and after reducing ‘Target Profit’ from the same, ‘Target Cost’ can be identified. We need to apply Value Analysis and Value Engineering to achieve such ‘Target Cost’.

(ii) Second reason is that SAL manufactures all assembly components themselves, irrespective of the fact that these components can be acquired from market at a cheaper rate.

Relevant cost of both, **‘Make or Buy’** needs to be compared. It is mentioned in the case, that major portion of total cost of production is variable in nature. It means, these are avoidable costs and can be easily compared with the cost of purchase of parts from outside. This way, we can buy majority of the parts and components from outside at a cheaper rate and our overall cost of production will get reduced.

Only those parts & components are required to be made in house whose variable cost of manufacturing is lesser than the purchase price.

(iii) Third and major reason is popularity of our product is declining, this is evident from declining market share and lot of complaints from buyers in e-mails and tele-calls for manufacturing defects.

These defects arise in product within a month's period of purchase. Hence, we should seriously look at our finished products. Further, in some of the cases, customer reported that assembled part is not belonging to the model they purchased and some customers say assembly is not as per specifications provided. Hence, quality is needed to be ensured in the product delivered.

One way to look at ‘**Quality**’ is conformance to the product specifications and needs of customer. To ensure quality, we may use Total Productive Maintenance (TPM), Total Quality Management (TQM), supported by Six Sigma needs to be applied.

Total Quality Management is management of entire process, including planning process, to meet customer’s requirements. **PRAISE** analysis may be used in order to improve quality. [PRAISE stands for : Problem identification, Ranking, Analysis, Innovation, Solution & Evaluation].

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.

(iv) Fourth reason being large percentage of workers are unskilled. Each worker should be provided with **requisite training.** Through **Kaizen costing,** workers should be involved into continuous improvement of existing processes, so that they are able to address small problems and resolve them to improve production process.

(v) Fifth reason is large amount and categories of raw materials, dumped by store at production floor, that too well prior to need. This reason may be a root cause of one of the complaint by customer that assembled part is not belong to model they purchased.

JIT can be implemented as a part of lean system. JIT is **pull system of production,** with **single piece flow** after considering **takt time** (explained ahead)**.** In JIT, production facility needs to be integrated with vendor system for automatic supply which depends upon demand based consumption. Under JIT system, inventory storage cost is at lowest level due to direct issue of material to production department as and when required and resultantly lesser / no material will be lying on production floor.

Note – Takt time is the maximum time to meet the demands of the customer, this will help us to decide the speed at manufacturing facility. Heijunka (it is a Japanese word, which means production levelling and smoothing) can be applied in order to reduce variation between takt time.

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' needs to be made.

(vi) Sixth reason for low performance is **old established business processes**, especially production processes and contains **certain activities which are purely unnecessary.**

Value Chain Analysis needs to be applied in order to ensure maximum value to customer by eliminating activities which are not adding value. This will help us in reduction of cost.

Process Innovation and **Business Process Re-engineering** can also be applied. Re-engineering is rethinking and radical re-design of business process in order to achieve improvement. It will help SAL to keep themselves at par with changing technology.

Further details can be tabled on requisition basis.

Closure of Report

Mr. Reddy,
Chief Management Accountant
(For Management Accounting Division)
Shakti Automobiles Limited.

Case Scenario 4 :

A-One Automobile is a manufacturer of Motor Bikes. A-One is based in a country which recently became liberal and global economy. Till now, the businesses were controlled by government, in order to maintain price and domestic demand. Government regulated the market to maintain the uniformity in the prices.

The country is large enough with widespread population with high density; and there is a high demand for motor bikes as large population of this country is in the age group of 18-24 years. A-one automobile enjoys reasonable market share. The new government in this country believes in deregulating markets and allowing the imports of foreign motor bikes.

Management team at A-one acknowledges 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 4 :

(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 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 concept 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 meeting the cost standards. On the other hand, Kaizen Costing believes in continuous improvement in manufacturing processes and hence, the goal is to achieve cost reduction targets. 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 A-One, standards are set semi-annually and based on these standards 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 variance reports should be generated for a shorter period.

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 is highly appreciated while setting standards. So, the current system of setting budgets and standards by the finance department should be changed. It should switch over to a participative style of budgeting.

(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 traditional system of costing, employees are seen as cost centre and cause of problem. But in Kaizen costing, employees are seen as solution providers.

- **Implementation aspects of Kaizen –** It may be possible that at the time of implementation of Kaizen costing, due to the change in role of employees, they may be not self-motivated to command, control and suggest possible improvement themselves. But it is sure that after a reasonable time, Kaizen system will increase staff motivation through empowerment.
- **Change in Culture –** From government regulated culture to employee self-empowered work-culture, will be dramatic change for A-One. Under Kaizen costing, employee groups will be assigned with power to make continuous changes rather than just executing the changes approved by management.

Case Scenario 5 :

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

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

The largest player in telecom industry is Voice Telecom. This company is resulted out of a corporate restructuring exercise of a state-owned telecom corporation. Voice Telecom still owns largest market share due infrastructural advantage over other players. SCT is also facing tough competition from Voice Telecom on pricing and customer volume.

Majority of the telecom operators, including SCT and Voice Telecom, are usually criticized by customers for poor customer services, miscalculation of call duration and call drop. However, majority of complaints are on account of –

a. Calculating wrong tariff, and

b. Dull and delayed response from customer care executives.

Hence by focussing 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 decided to practice Six Sigma initiative.

Required :

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

Solution 5 :

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) – It is used to improve existing business process (i.e. to remove defects) and

2) **DMADV** (Define, Measure, Analyse, Design and Verify) – It is used to create new business process (defect free).

DMAIC methodology of Six Sigma implementation at SCT

Define – Define the improvement areas

Define include definition of customer requirement or problem faced by customer.

First and foremost requirement is to ensure that the customers must be billed correctly. Wrong billing may lead to –

a. Delayed revenue – due to litigation for wrong billing or

b. Loss of revenue – due to porting to alternative telecom operator by customer

Secondly, 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 complaints.

Measure – Existing process for comparison

Existing performance need to be measured.

Since performance needs to be measured in two domains i.e. 'billing process' and 'customer complaint handling', hence SCT needs to have a system through which it can collect reliable information. Like - number of complaints as % of total customers, similarly wrong bills out of the total bills generated, is there any process to reissue the correct bill? – if yes – then in how many cases it is issued? and average time to solve complaints etc. in order to measure existing performance.

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

Analyse – Cause effect relationship between errors in the process & outcome

Existing processes 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, in order to reach to root causes of customer complaints and wrong billing. So that necessary preventive and corrective steps may be taken.

Improve – Plan improvement on the basis of analysis

Existing process need to be improved in order to mitigate the root causes.

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

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

Improvement can be done by calculating correct call duration, avoiding call drops, training of customer service executives etc. If the process of re-issue of a bill for wrongly issued bill earlier, is already process, then the wait time for reissue needs to be reduced.

Control – Continuous control to identify and correct the process variance

Improved processes needs to be controlled & monitored continuously in order to ensure that the enhanced performance is maintained.

For monitoring, KPI's (i.e. performance measures) can be established and reported on daily basis. Like - (a) number of unresolved complaints at day end (b) wrong billing cases etc. These KPI's will also act as an early signal to Line Managers and Senior Management.

In order to implement Six Sigma as per DMAIC method, SCT needs to form a team of line managers from different processes which needs to be improved (or critical from prospective of customer services). This team and implementation process should lead by some senior management person to ensure its success.

Case Scenario 6 :

Star Tiles Production Limited (STPL) is a large manufacturer of floor tiles and interlocking tiles. STPL enjoyed reasonable market share and brand reputation uptill 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 customers 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 cases task become monotonous; as learning curve exhausted. Management and operational decisions are centralised in nature, participation of workers is limited up to day end report only.

Remuneration at STPL are paid based on hourly rate. Hourly rate is fixed based upon number of years of working in STPL, irrespective of task allocated to such worker. Since payment are fixed in nature, hence workers at STPL are hardly concerned about quality. Some of the skilled workers are getting less pay in comparison to other staff. STPL recently retrenched some of the 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 are 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 is should be measured?

(ii) Productivity enhancement techniques, which can be applied at STPL in order to enhance productivity?

Solution 6 :

Report

Addressed to :
Office of CEO,
Star Tiles Production Limited (STPL)

Dated – 11th April 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 material etc.

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 is organising the work rather individual worker.

(ii) Productivity Improvement Techniques

a) Value Analysis / Engineering – Value engineering improves value of product at every stage of product life cycle. Since products of STPL are 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 a small group of employees, usually in size of 5 to 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 is facing criticism from worker class and about the methods of working, hence quality circle can be solution to these problematic aspects.

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 conditions, welfare facilities, worker participation in management etc.

Since the incentive scheme is not linked to employees' productivity and skill, hence redrafting of incentive schemes by 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 of 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 but weak in using the technology, they must be trained on technological part. Training is a process of knowledge & skill enhancement of employees and will result in increased efficiency of employees.

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 stock out situation, which results 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 and 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 Scenario 7

ABC Limited specializes in the manufacture of chemical intermediaries ....

It is already covered in Amendment Batch 4 Notes - Q.5 of RTP Nov. 2020

Case Scenario 8

Fashion industry prospered more than any other industry and it kept blooming with new trends, being bought weekly and almost all being sold in no time. The NextGen clothing (NGC) is 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 labourers and farmers, few of them aged under 14, from nearby locations enrolled into the program. They had no source of employment before the clothing plants. It gave boost to their living standards with all the 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 fabric clothes in humungous (i.e. very large) quantities. The citizens love the art and crafts 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 labourers. All were happy and no one complained about the sustainability aspect, the duty it owes to its surroundings and the greater environment.

The community focussed 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 that 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 dying the fabric to make the cloth. The chemical composed water then flows to the nearby rivers and hampers the life of water animals 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 impact 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 8 :

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 industry, 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 stakeholders 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 tripple 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 not catalogue some of the sustainable efforts that are recommended in the situation of NGC and they are :

Producing quality materials

Now a days firms are resorting to producing cheap materials that cost them less to produce and sell. Bearing the come and go fashion in mind, their products 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, thoughtfully 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 overwhelming quantities of second hand clothing and footwears. 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 who 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 resorting 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 labourers 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 eke out their living.

Channelizing efforts towards recycling

NGC can introduce innovative recycling channels to ensure that customers are enticed to return 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 landfill 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 manufacturers or other textile manufacturers.

Compliance to local labour 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 labour. 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 labour laws to hire child labour 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 sportswear 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 a switch over. Poly clothes 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 adopt the policy of taking customized orders made to manufacture what is ordered for. This will also ensure limited flow of hazardous chemically composed water to the nearby rivers, thus managing the risk of commoners' lives.

Overall

Considering the above approaches, it is perceived that NGC can bring a 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, 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.

Case Scenario 9

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 and

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 km 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 materials 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 Lean Management and integrate 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 9 :

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 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 and sustaining the new order. The 5S lean management system comprises of the five S's that is : 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 aspects 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 though 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 a 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 Scenario 10

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 through 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 Accountant 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 (₹ 36 x 1,600 hrs)	57,600
Internal Failure Costs	
Down Time	15,40,000
Manufacturing Rework (₹ 456 x 3,200 bikes)	14,59,200
External Failure Costs	
Customer Complaints (₹ 70 x 2,000 hrs)	1,40,000
Warranty Repair (₹ 3,120 x 2,600 bikes)	81,12,000
Total Quality Costs	**1,15,58,800**

Solution 10 :

Report

Addressed to :
Office of CEO,
Dewar Bikes

Dated – 06th May, 2020

Analysis of Quality Costs

The reporting of quality costs highlights the cost of quality activities at DB. The total quality costs statement clearly displays the relationship between conformance costs (prevention and appraisal costs) and non-conformance costs (internal failure and external failure costs). Statement indicates that only 2.16% of the total quality cost is the cost of preventing quality problems while 0.50% is the cost of appraisal activities. Thus, prevention and appraisal costs make up only 2.66% of total quality costs. In contrast, 97.34% of quality control costs are incurred for internal and external failure costs.

Two measures to reduce non-conformance cost

Total Productive Maintenance (TPM) is a system of maintaining and improving the integrity of production and quality system through keeping all equipment in top working condition so as to avoid breakdown and delays in manufacturing processes. It involves identifying machines in every division and then planning & executing a maintenance programme covering their entire useful life.

In this case, TPM will help in reducing internal failure cost (i.e. downtime and manufacturing rework cost), which constitutes 25.95% of total quality cost, by keeping all equipment in good working conditions so that there is no downtime or machine breakdown and ensuring that all equipments run smoothly. If machines work properly, the chances of rework will reduce, ultimately will also reduce chances of warranty repair and customer complaints (comprising 71.39% of total quality cost which is a major part of total quality cost).

Total Quality Management (TQM) aims at improving the quality of organisational output, including goods and services, through continual improvement of internal practices. Its objective is to eradicate waste and increase efficiency without compromising with the quality. It requires maintaining quality standards in all aspects of business by ensuring that things are done right at the first time itself, so that defects and waste are eliminated from operations.

It appears that DB is not a TQM company at present, due to huge disparity between conformance costs and non-conformance costs. In order to make DB to be successful, all staff at DB must be engaged in the continuous improvement process. In order to establish a reputation as a high-quality bike manufacturer DB must ensure that staff is having a right attitude towards the importance of conformance activities. DB can also conduct a third party inspection of components at supplier's workplace, which will ensure maintenance of quality standards of inputs.

Overall, while applying the above two measures in DB, consideration must be given to the optimum balance between the costs of conformance and the costs of non-conformance.

Implementation of Just in Time

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 components and production of bikes will be based on customer demands and DB will have to accordingly coordinate with its suppliers to supply the right quantity of components required at the right time. JIT inventory management calls for having the inventory as and when needed. It will take care of massive holding cost suffered related to large inventory build ups. In this environment, DB will also be able to reduce the manufacturing time by around 3 hours by streamlining the flow of information in entire supply chain.

Dewar is assessing alternative suppliers on continuous basis to improve capacity and performance. It means it is changing sources of material regularly or using multiple-suppliers. In contrast, JIT is based on reduced number of suppliers and move towards single sourcing. It is easier to develop long term cooperative relationships with a smaller number of suppliers. The quality of internal services and an organisation's ability to provide quality products or services to its customers depends upon this relationship. However, this relationship is missing in DB. Dewar has a close relationship with the retainers but relationship with suppliers is equally important.

It appears that firm is also importing its requirements from abroad. In JIT environment, it is important that suppliers are, to the extent practical, located in close proximity to the manufacturing plant. Carefully selected suppliers are capable of delivering high quality materials in a timely manner, directly at the shopfloor, reducing the material receipt time. Therefore, selection of right suppliers located in close proximity to the manufacturing plant is vital for the proper implementation of JIT.

It is also important to note that every supplier is different, but DB should be able to view each supplier as one of its part only. The supplier's network must be able to call up and communicate directly with the DB's network, obtaining manufacturing schedules and product specification in real time. ERP and other sources of electronic data interchange between supplier and DB will act as backbone in supporting the JIT activity. On the whole, DB's management has to treat suppliers as partners with significant influence on the success of the organization.

The functional division is less appropriate in JIT environment. JIT production requires multi-skilled teams. In DB, teams need to be formed to work by product i.e. type of bike rather than by the type of work performed. In addition, staff will need training to work in the new teams. DB should also measure the amount and effectiveness of training required. A JIT system works best when employees pitch in with suggestions for improvements. The performance can be measured by computing the number of ideas per worker, the number of ideas suggested in total, the number of ideas implemented, or the proportion of ideas suggested that are implemented.

DB 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. However, in case of DB, demand is unstable. In this case, in order to prevent stock-outs, inventory managers can only increase the Kanban numbers of each product.

Conclusion

The Board desires to improve the quality as well as financial position which can be achieved through successful implementation of quality control and lean system. However, the factors discussed above should be taken care of. It is worthwhile to note that any return on investment in proposed system must be viewed from long term perspective rather than short term, since optimum results may not be realized until the system has been in place for some time.

Further details can be tabled on requisition basis.

Closure of Report

Chief Management Accountant
(For Management Accounting Department)
Dewar Bikes

Case Scenario 11

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 year end closing meeting with all working partners, has given the following vision statement for the next year :

‘In the next financial year, ABC should use results and determinants based framework for each revenue segment and the current rewards scheme to be remodelled 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 11 :

(i) The management strategy that the founder partner of the firm is 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 to manufacturing field to evaluate business performance. The model requires the establishment of results and determinants based framework. Wherein ‘determinants’ are the performance areas and the ‘results’ reflect the success or failure of the determinants. This model also requires setting up 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 market share and position are some of the measures of **competitiveness**.

Statutory compliances segment will be having 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 hours / total hours paid can be computed. This ratio will also signify the peak and off period. Number of errors / defects to the number of compliances submitted can be taken as KPI for quality of service.

Consulting Services segment will be having 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 can be taken as KPI for quality of service.

Flexibility is important from the perspective of delivery of services, the manner and timing 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 within the previous three years can be a performance measure of innovation.

Case Scenario 12

'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 and unwilling to adapt product specifications to the requirements of the customer. Also, one of company's big customer 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 Lakhs		
	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 12 :

(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 measures of Digital Computers are :

- 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 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 which are 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 organisation 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 orders it can complete in a year and hence achieving its sales target and thereby its profit.

* * * * *

3 SKILL ASSESSMENT BASED QUESTIONS (SABQ)

Question 1

First Source (FS) is a firm engaged in making glass based high value exotic artefacts targeting premium segment market. Its major supplies thus go to retail shops in shopping malls in cities like New Delhi, Mumbai, and Chennai where such artefacts are put on a display with a premium price tag.

FS sources most of its glassware components from a local supplier in Delhi and assembles the same in a small structure within its shop floor. Later these artefacts are given exotic designs, and embedded with glitter stones, fritter (i.e. small waste pieces of glass) and such other items by five well trained artisans in the shop floor.

The sales in the past six months have not shown an encouraging trend and working capital is in crunch position. The management of FS has received the feedback from most of the mall owners that this demand crisis is due to reduced footfalls.

The current position of FS is provided as follows :

Particulars	**Artefact 1** ₹	**Artefact 2** ₹
Maximum retail price per unit (MRP)	3,000	6,000
Rent to be paid to malls per unit	50	55
Facilitation costs to be paid to malls per unit	10	15
Present lower selling price per unit	2,350	4,800
Cost of glassware per unit	900	1,120
Cost of assembly per unit	500	650
Artisan costs per unit	700	1,000
Variable overhead per unit	200	240
Fixed overhead per unit	600	900
Inventories in malls (in number of units)	621 units	121 units

Good artisans are hard to find, and the artisans that are employed with FS are associated on long term basis, so giving any temporary layoff is also not possible.

Required :

ADVISE the management on profitability in the current scenario.

Answer 1 :

W.N. 1 : **Computation of Contribution in the Current Scenario -**

Particulars	**Artefact 1**	**Artefact 2**
Cost of glassware per unit	900	1,120
Cost of assembly per unit	500	650
Artisan costs per unit	700	1,000
Variable overhead per unit	200	240
Rent to be paid to malls per unit	50	55
Facilitation costs to be paid to malls per unit	10	15
Total Variable Cost per unit - (a)	₹ 2,360	₹ 3,080
Present Lower Selling Price per unit - (b)	2,350	4,800
Contribution margin per unit - (b - a)	(10)	1,720

From the circumstances in the present scenario, it is clear that FS is facing a muted demand for its products, due to reduced footfalls. This may be primarily due to a slowdown in the associated market for premium products that have only exotic (as opposed to actual) value.

Artefact 2 is having a positive contribution margin even at lower selling price. Artefact 1 is having a negative contribution margin. Therefore, the management of FS should consider the following points :

To renegotiate with the mall owners on rental costs. If that is not possible, then the management has no choice but to sell the Artefact 1 at present price at the earliest.

To promote Artefact 1 by making a combination offer with Artefact 2 at a discounted price, taking advantage of the fact that Artefact 2 is still able to generate profit on a standalone basis. Hence a combined offer may help to boost its sagging sales.

Discontinuance of further production of Artefact 1 should be done only for a temporary period. The work in progress (if any) should be put on hold, and the management should rigorously find out cost cutting methods in its assembly shop. In striving to reach the cost goal, various managerial techniques and tools like Value Chain Analysis, Kaizen Costing, Six Sigma etc. can be used. These techniques are being used to control cost in order to meet the target without compromising the quality and value to be derived from the product.

Question 2

The Soup Ltd. offers a range of beauty parlour services like ....

It is already covered in Amendment Batch 4 Notes - Q.3 of MTP October, 2020

Question 3

Micro Lite Limited (MLL) engaged in manufacturing of casting and capping of PVC pipes used for electronic fittings, which they supplied to various parts of country using a well-diversified network of distributors. MLL was established by Mr. Raheja around 10 years back. Since then, the competition is continuously increasing in the market as new players entered in market who are ready to sell similar products at relatively lower prices. Mr. Raheja is actively participating in business and holds the position of CEO and being a CA by profession; he conducts regular meetings with management accounting department.

In order to beat the competition, MLL decided to reduce the cost and enhance the efficiency by implementing the strategic cost management techniques, such as cellular manufacturing i.e. a lean manufacturing technique.

Mr. Rastogi who joined the company recently as management accountant, is very enthusiastic about cellular manufacturing and he considers it as scientific way of production. He believes that it will enhance the value creation over value chain. Accounting to him, cellular manufacturing is a significant tool to achieve process cycle efficiency.

Mr. Rastogi makes a plan of rearranging the existing machine and human resources who are working on these machines. He tenders such a plan (of implementing cellular manufacturing) to Mr. Raheja. Process is also reengineered along with restructuring of production layout. Mr. Rastogi is of the belief that with minimal cost (including loss of contribution on account of down time) on rearranging existing resources, the processing cycle efficiency can be enhanced.

Mr. Raheja is sceptical in respect of the expected benefits. Hence, Mr. Rastogi agreed to rearrangement plan, but in a phased manner rather than full implementation. Mr. Rastogi was asked to implement his plan (on test run basis) in one of the production departments, which is tiny in comparison to other 3 production departments. Such a selected department is contributing around 12% of total production capacity of MLL.

Mr. Raheja (CEO) also quoted that go ahead for next phase will be granted only if during testing phase processing cycle efficiency is improved by minimum of 15%.

Mr. Rastogi and his team implemented the rearrangement plan on such selected department and practiced the reengineered process and rearrangement of machines along with men for 30 days. Record keeper provide the following PCE data before and after rearrangement.

Activity (part of process)	Before (in minutes)	After (in minutes)
Moving	70	25
Inspection	40	15
Storage	60	10
Processing	80	40

Required :

(i) EXPLAIN why Mr. Rastogi considers cellular manufacturing as scientific way of production?

(ii) ASSESS, whether the outcome of testing phase of MLL is sufficient or not as per the expectation of Mr. Raheja, for implementing similar arrangement (cellular manufacturing) to remaining production departments.

Answer 3 :

(i) Cellular manufacturing as scientific way of production

In cellular manufacturing, production workstations and machines are queued in specified sequence to ensure seamless (i.e. uninterrupted) flow of material over entire production line. The production flow may be in a Straight Line or U-Shaped or Inverted U-Shaped etc. It eliminates delay **(Time)** in production and also eliminates the transportation **(Motion)** of various parts of single product from one production facility to another.

Hence, Mr. Rastogi is right in equating 'cellular manufacturing' as a 'scientific way of production' because, it largely rests upon principles of scientific management, suggested by Fredric Winslow Taylor based upon 'Time Study' and 'Motion Study'.

Since in cellular manufacturing **one-piece at a time moves across production line,** hence provides the scope for customisation to product features on the production line in view of specific customer demand. Thus cellular manufacturing adds value to customer over value chain.

(ii) Assessment of Mr. Rastogi's plan (cellular manufacturing) for further implementation (to remaining production departments)

Mr. Raheja seeks 15% improvement in PCE during testing phase, in order to implement the same for remaining production departments. It means if PCE is 10% in existing layout, then it should increase to 11.5% or beyond in cellular manufacturing environment.

There is an improvement in Process Cycle Efficiency by shifting to cellular manufacturing system from existing system by 12.44% in absolute terms. If we measure percentage increase (relative measure), it will be 38.87% (i.e. 12.44% / 32.00%).

Since relative improvement in PCE is by 38.87% against the yardstick of 15%, **hence it is advantageous to implement cellular manufacturing to remaining production departments also.**

Workings : Computation of the PCE (Time in minutes)

Sr. No.	Activity Category	Before Rearrangement	After Rearrangement
A.	Moving	70	25
B.	Inspection	40	15
C.	Storage	60	10
D.	Processing	80	40
E.	Value added time (i.e. D)	80	40
F.	Total Cycle time (A + B + C + D)	250	90
G.	Process Cycle Efficiency (E/F)	**32%**	**44.44%**

Question 4

Cona Precise Solutions (CPS) manufactures switchgear and specifically designed the electricity boards, which are sold to customer through wide-spread retailers and distributors network across the country.

CPS enjoys the high reputation among the stakeholders, specifically workers. The attrition rate (i.e. labour turnover rate) at CPS is relatively lower than of other players in the industry. Reasons for low attrition rate is employee friendly policies, specifically in regard to sharing of profit and employee participation in decision making. Cona Precise Solution applied a profit-sharing plan around three years ago. The terms of profit share plan of CPS can be read as follows -

1. The CPS will be responsible to make available the profit share pool, which will be equivalent to the **minimum** of following of three limits –
   a. 30% of Earnings before taxes, to the extent it is in excess of the minimum acceptable target profit margin, or
   b. 0.75% of Gross Revenue, or
   c. Absolute amount of ₹ 2.5 crores
2. Minimum acceptable target profit margin will be equivalent to the average of last three year's net operating profit of industry group.
3. The individual employee will be participated in profit share pool in proportion to the ratio of that employee's salary to the total salary of all employees of that division.

Additional Information for the year just closed are –

1. CPS's earning before tax is ₹ 40 Crores.
2. Net operating assets employed by CPS are ₹ 120 Crores.
3. During the year, CPS records the revenue of ₹ 360 Crores.
4. Total relevant payment of salary for the year was ₹ 42 Crores.
5. Industry's average last three year's net operating profit rate is 8% of net operating assets.

Required :

(i) EXPLAIN profit sharing plan, as performance management tool and group incentive plan.

(ii) COMPUTE the amount that will be available as a profit sharing pool by CPS.

(iii) Mr. Vineet Shukla, who is one of the employee of CPS and eligible to participate in profit share plan. If his annual salary is ₹ 36 lakhs, then COMPUTE the amount of his share in profit.

(iv) Analyse the profit sharing plan of CPS, in order to highlight major limitations.

Answer 4 :

(i) Profit Sharing Plan

Profit Sharing is a group incentive arrangement where cash bonus is paid to workers or employees, calculated based upon the reported profit of concerned division (i.e. responsibility centre) of the entity. Since profit sharing is based upon the profit, hence can be said as an incentive plan based upon short term performance.

Profit share plan must define the percentage of profit to be shared and who are eligible employees for participation and what will be the ratio of participation by each employee / worker in the bonus pool and formula for computing each of these percentage or ratio. The criteria for participation in share may be performance score or salary & wages.

Profit share plan may be used to boost the motivation among the employees to enhance and promote their performance. Hence profit-sharing plan can be considered as performance management tool. Profit sharing plan can also be considered as pre-stage of Kaizen Costing.

(ii) **Amount of profit sharing** will be equivalent to the **minimum of following of three limits -**

(a) 30% of Earning before taxes, which is in excess of the minimum acceptable target profit margin,

(30% of ₹ 40 Crores) – (8% of ₹ 120 Crores)

= ₹ 12 Crores - ₹ 9.6 Crores

= ₹ 2.4 Crores

Or

(b) 0.75% of Gross Revenue

= 0.75% of ₹ 360 Crores = ₹ 2.7 Crores

Or

(c) Absolute amount = ₹ 2.5 Crores

Minimum of the above amount for profit-sharing pool will be **₹ 2.4 Crores.**

(iii) **Share in profit pool of Mr. Vineet Shukla**

The individual employee will get share in proportion to his salary to the total salary of all employee of that division.

$$\text{Profit Sharing pool} \times \frac{\text{Individual Employee's Salary}}{\text{Total Gross Salary}}$$

$$2{,}40{,}00{,}000 \times \frac{36 \text{ Lakhs}}{4{,}200 \text{ Lakhs}}$$

= ₹ 2,05,714

(iv) **Major Limitation in Profit Sharing Plan of CPS :**

Profit Sharing is a group incentive arrangement, where each member of the group will participate in profit sharing pool. However, if it is based on performance score of an employee, then it is valid. But if the share of profit is calculated based upon salary & wages, (like in case of CPS), then a worker who has underperformed will also get a share. Similarly, an efficient worker may not get rewarded properly for his efficiency and performance. It may de-motivate the efficient workers to continue doing good work. CPS should evolve some better basis for profit sharing, based on the performance of each employee.

Question 5 :

Delight Engineering Solutions (DES) is manufacturing product CAF-5 from use of single raw material CAI-100. The two major departments operational in DES are purchase and production. DES is facing high competition due to large number of competitors in the market. Demand of CAF-5 is fluctuating, therefore high storage cost is prime cause of low financial performance. DES Company decided to move from traditional system to JIT system.

From purchase and stores, the following data is collected. Annual consumption is of 1,800 units of CAI-100. List Price of each unit of CAI-100 is ₹ 4,000. The cost of placing an order is ₹ 2,000 and cost of carrying one unit of CAI-100 for a year is 2%. Company presently uses EOQ model of ordering.

Purchase Manager further estimated that, if JIT system of inventory is implemented, ordering cost will increase by 50% from current level, whereas carrying cost can be avoided up-to 90%. But there is a prospective order of 5 units of CAF-5 which can't be served, due to non-availability of stock and failure of delivery of supplier. Contribution from each unit of CAF-5 is ₹ 1,200. Stock insurance cost will reduce by ₹ 400 on annual basis. There will also be a reduction in working capital requirement, which will result in interest saving of ₹ 500 on annual basis.

Further, Production and Engineering department supported by marketing department provide details that presently average production of CAF-5 is 150 units per month, although for next 4 months expected demand will be 120, 160, 140, 180 units. Maximum capacity from man-hours perspective is 150 units. 20 man-hours are required for producing each unit and labour rate per hour is ₹ 3. Casual labour is not available in market. Overtime rate will be 200%. Average monthly cost of storage of each item of CAF-5 is ₹ 65.

Required :

(i) EXPLAIN the JIT purchasing and JIT production and the effect of its introduction.

(ii) COMPUTE cost savings if it moves to JIT Purchasing.

(iii) COMPUTE cost savings if it moves to JIT Production.

Answer 5 :

(i) **Just-in-time** (JIT) is a collection of ideas that streamline a company's production process activities to such an extent that wastage of all kinds viz. time, material and labour is systematically driven out of the process.

JIT purchasing suggests that materials should only be purchased as and when required. While JIT production shows that finished products should only be produced as and when required by customers. Whereas in traditional manufacturing system, to meet forecasted demand, materials and finished goods are stored in advance.

JIT Purchasing reduces the inventory level which will result in reduction of carrying cost of inventory, as well as reduces the level of working capital which will save the opportunity cost in the form of interest expenditure.

On the other hand, JIT Production gives opportunity to customize the product as per customers' needs, conformance to customers' need is essential to quality. It also reduces the level of working capital which saves the opportunity cost in form of interest expenditure.

Prerequisites of JIT purchasing and production is integration with vendor. If vendor is not integrated properly or is unreliable, then situation of stock out can arise and it may result into loss of contribution.

Multitasking by employee is another key feature of JIT, group of employees should be made based upon product instead based upon function. Hence, functional allocations of cost becomes less appropriate.

Overall, JIT entrances the quality of product by eliminating the waste and continuous improvement in productivity.

(ii) Cost Savings in JIT Purchasing

Reorder Size (EOQ) under present regime :

$$EOQ = \sqrt{\frac{2 \times A \times O}{C}}$$

Where :

A = Annual Consumption i.e. 1,800 units of CAI-100

O = Ordering Cost per order i.e. ₹ 2,000 per order

C = Carrying Cost per unit per annum i.e. ₹ 80 (2% of ₹ 4,000)

$$EOQ = \sqrt{\frac{2 \times 1,800 \times 2,000}{80}}$$

EOQ = 300 units.

Cost Comparison under Present and JIT regime (annual basis) :

Particulars	**Present System ₹**	**JIT System ₹**
Ordering Cost (1,800 units / 300 units) x ₹ 2,000 JIT System - (12,000 + 50%)	12,000	 18,000
Carrying Cost (300 units / 2 x ₹ 80) JIT System – (12,000 - 90%)	12,000	 1,200
Stock-out cost i.e. loss of contribution (5 units x ₹ 1,200)	-	6,000
JIT- Reduction in stock Insurance cost on annual basis	-	(400)
Interest saved p.a. on reduced amount of working capital	-	(500)
Net Cost of Inventory Management p.a.	**24,000**	**24,300**
Incremental cost of shifting to JIT	**(300)**	

Since implementation of JIT Purchasing results in **incremental cost of ₹ 300** per annum, hence it is **not economically worth** to move to JIT system of inventory purchase.

(iii) Cost Savings in JIT Production :

Carrying Cost in Present Scenario (for next four months)

Month	**I**	**II**	**III**	**IV**
Opening Stock	-	30	20	30
Add: Production	150	150	150	150
Less: Demand	120	160	140	180
Closing Stock	30	20	30	-
Average Stock*	15	25	25	15
Storage cost @ ₹ 65 p.u. x av. stock	975	1,625	1,625	975
Total Carrying Cost for 4 months	**₹ 5,200**			

*Average Stock = (Opening Stock + Closing Stock) / 2

Overtime Cost in JIT Scenario (for next four months)

Month	**I**	**II**	**III**	**IV**
Demand (in units)	120	160	140	180
Production (same as demand)	120	160	140	180
Maximum capacity (in units)	150	150	150	150
Shortfall* (production - max. cap.)	-	10	-	30
Overtime labour hrs. required (20 hours for each unit of CAF-5)	-	200	-	600
*Overtime cost @ 200% of wages (Payment @ ₹ 6 per hour)	-	₹ 1,200	-	₹ 3,600
Total overtime cost for 4 months	**₹ 4,800**			

*Shortfall goods will be produced in overtime, due to limited man-hours available. As casual labour (i.e. temporary workers) are not available in the market, the entire overtimes wages paid to existing workers shall be an incremental cost.

Decision : Based upon the comparative cost for upcoming four month under present and JIT scenario, there is **cost saving of ₹ 400** (₹ 5,200 v/s. ₹ 4,800) in moving to JIT system production. Hence it is economically **worth** to move to JIT Production.

Question 6

XEE Ltd. is a company which manufactures two types of material for engineering applications. It makes these two types of materials in two production lines: Line 1 and Line 2. Line 2 has a different process and is easier in terms of 'getting this fixed at the customer end' and has longer life (1.5 times the life of Line 1 product).

These materials are sold in kg. Line 1 has a capacity to produce 6,50,000 kg. per annum and Line 2 has a capacity to produce 2,40,000 kg. per annum.

The company's management has given a directive to the CEO, CFO and the Sales Head that in no circumstances the Contribution Margin to Sales shall fall below 40%.

Currently, Line 1 is running at about 92% capacity (3 shifts) and Line 2 at about 33% capacity (1 shift).

The capacity, costs and profitability data for the year 2018-19 are as follows :

Particulars	**Line 1**	**Line 2**	**Total**
Capacity (kg.)	6,50,000	2,40,000	
Production & Sales (kg.)	6,00,000	80,000	
Unit Price / Costs per Kg. in ₹			
Selling Price	180	315	
Variable Cost	(108)	(189)	
Contribution	72	125	
Contribution % to Sales	40%	40%	
	₹ Lacs	**₹ Lacs**	**₹ Lacs**
Sales Revenue	1,080.00	252.00	1,332.00
Less : Variable Cost	(648.00)	(151.20)	(799.20)
Contribution	432.00	100.80	532.80
Overheads			(240.00)
Depreciation			(93.00)
Profit			199.80
Profit % to Sales			15%

Scenario 1

At a meeting of the CEO, Sales Head and the CFO; the Sales Head informs the team that there is a potential of a one-time 80,000 kg. of Line 2 product order from a large customer who can commit on delivery schedules for the whole year 2019-20 at a price of ₹ 250 per kg.

The Sales Head also informs that the new customer is aware of the price of product from Line one, and the fact that the line one capacity is almost full. He also knows that the Line 2 product has a life which is 1.5 times of the Line 1 product.

The Sales Head also informs that he may have to reduce price by ₹ 5 per kg. for the existing customers i.e. from ₹ 315 per kg. to ₹ 310 per kg.

To a question from the CEO that this would involve additional overheads, the CFO checks on his laptop and informs that for an additional shift of operation of line 2, the incremental overheads would be 6.20 Lacs p.a. per shift (shift supervisors, lighting etc.) and depreciation will increase by ₹ 16.00 Lacs p.a. per shift.

The CEO poses following questions to both the CFO and the Sales Head :

1. Given that the order is one time, what will happen to the fixed overheads committed in 2019-20 and the loss of profits due to reduction in price for existing customers which cannot be increased in the subsequent years?

2. The CEO is also concerned about the reduction in contribution % from the management stipulated 40%. To address the issue, the CEO asks both the CFO and the Sales Head to come up with an acceptable pricing for Line 2 for the new one-time customer. He indicates to them that the price should be such that the % of Profit to Sales achieved in 2018-19 is maintained.

3. Further, the CEO mentions that the new customer should also be convinced of the price to be quoted. He also mentions that the sales from Line 1 for 2019-20 will be at the same level (6,00,000 kg.) and at the same price. There are no changes in costs (both variable and fixed) too.

Required :

You are the deputy to the CFO and you are requested to come up with RECOMMENDATIONS on :

(i) Ideal Price to be quoted for the new customer with reasons to be proposed by Sales Head to the new customer to convince him to accept the price so quoted.

(ii) Reasons to be mentioned to the management on why the price to be so quoted is acceptable despite the fact that it would result in a lower contribution margin % than that prescribed by the management.

(iii) Recommend a strategy in consultation with the Sales Manager to make up for the fixed overheads and loss of profits due to reduction in price for the existing customers of Line 2 product for subsequent years.

(iv) Also arrive at a price for the new customer at or below which it does not make any financial sense to quote and get the order from the new customer with explanations.

Scenario 2

In a different scenario where volumes for the year 2019-20 are assumed to be exactly same as in 2018-19 but price of raw material has increased by ₹ 12 per kg for both products manufactured out of Line 1 and Line 2. A price increase by ₹ 12 kg for each of the products will result in a drop in contribution % below 40% for both the products. Calculations indicates that the contribution margin can be retained at 40% if he prices are increased by ₹ 20 per kg.

Required :

You are requested to indicate which price increase; ₹ 12 per kg. or ₹ 20 per kg has to be obtained from the customer and why?

Answer 6 :

Scenario 1

(i) Let's calculate the ideal price for new customer, keeping in mind that % Profit to Sales as achieved in 2018-19 is maintained i.e. 15% profit.

Let's assume such selling price per unit for new customer is ₹ 'X' per kg.

Let's prepare a profit statement for 2019-20 with the above assumption :

Particulars	**₹ Lacs**
(a) Revised Sales Revenue :	
Line 1 product (₹ 180 x 6 lac kg.)	1,080.00
Line 2 product for existing customer (₹ 310 x 0.8 lac kg.)	248.00
Line 2 product for new customer (₹ X x 0.8 lac kg.)	0.8X
Total Sales revenue (a)	1,328 + 0.8X
(b) Revised Variable Costs :	
Line 1 product (₹ 108 x 6 lac kg.)	648.00
Line 2 product for existing customer (₹ 189 x 0.8 lac kg.)	151.20
Line 2 product for new customer (₹ 189 x 0.8 lac kg.)	151.20
Total variable cost (b)	950.40
(c) Contribution [a - b]	377.60 + 0.8X
(d) Overheads [240 + 6.20]	246.20
(e) Depreciation [93 + 16]	109.00
(f) Profit [c - d - e]	22.40 + 0.8X
(g) Profit desired at 15% to Sales [15% x (1,328 + 0.8X)]	199.20 + 0.12X

If we equate the above two figures of (f) & (g), we get -

22.40 + 0.8X = 199.20 + 0.12X

Hence, 0.68X = 176.80

Hence, X = 176.80 / 0.68 = ₹ 260 per kg.

Hence, the ideal price would be ₹ 260 per kg to be quoted to the customer. While the customer has asked for a price of ₹ 250 per kg. the price of ₹ 260 per kg. is still beneficial to the customer because the life of Line 2 product is 1.5 times of Line 1 product priced at ₹ 180 per kg.

1.5 times of 180 is 270 and the customer is getting a good bargain at ₹ 260 per kg. This has to be explained to the customer to get him accept the price of ₹ 260 per kg. as against ₹ 250 per kg sought by him.

(ii) The reduction in sales price of Line 2 products will surely lead to reduction in contribution to sales ratio i.e. P/V Ratio. However, overall Profitability is maintained at 15% of sales, even after the reduction in sales price.

Let's check the overall profit for the year 2019-20 :

In the working (i) above, the total profit was = 22.40 + 0.8X lacs

i.e. = 22.40 + (0.8 x 260) = ₹ 230.40 lacs

Overall profit for the year 2018-19 as given in the question is ₹ 199.80 lacs

It leads to an incremental profit of ₹ 30.60 lacs (i.e. 230.40 - 199.80).

This has to be explained to the management, to accept the proposal.

(iii) As this is a one-time order, the company would be saddled (i.e. stuck) with ₹ 6.20 lacs of additional overheads (predominantly manpower & supervision cost) and a loss of contribution of ₹ 4.00 lacs (₹ 5 x 80,000 kg.) due to sale of Line 2 product at ₹ 5 less per kg. in subsequently years too. Also, a price once reduced cannot be increased easily.

To make up for this loss, the Sales Head should sell at least 15,000 kg. of Line 1 product. This is arrived at by dividing ₹ 10.20 lacs (₹ 6.20 lacs + ₹ 4.00 lacs) by contribution per unit of Line 1 product which is ₹ 72. It works out to 14,167 kg. (10.20 lacs/72), rounded off to 15,000 kgs for which capacity is available in Line 1 (50,000 kgs) within the 3rd shift. Depreciation cost for the 2nd shift will not be incurred as Line 2 will be back to single shift operation after 2019-20.

(iv) The lowest sales price is the one where our entire incremental cost is fully recovered. The incremental costs are : variable costs plus loss of margin on existing customers plus the incremental overheads and depreciation. It works out to be = 151.20 + 4 + 6.20 + 16 = ₹ 177.40 lacs. If these are recovered, then there is no loss. The minimum price to be obtained shall be = ₹ 177.40 lacs / 80,000 kg. = ₹ 221.75 per kg.

At this price there is no loss or gain but it is not worth the effort of running the 2nd shift. If the customer is a hard negotiator and has alternatives, the price to be accepted for reasons other than profits (for example gaining a big customer where there is a possibility of big orders in future) cannot be less than ₹ 221.75 per kg.

Scenario 2

If we want to maintain the same P/V Ratio of 40%, then the increase in sales price should be (₹ 12 / 60%) = ₹ 20 per kg.

If the competition is tough and the customers are not willing to pay the higher price, then we will have to increase the sales price by atleast ₹ 12 per kg. It will help us to maintain the same overall profit as before.

Question 7

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
Reserves (Opening)	1,000	2,250
Transfer (Current year's 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 Divided Distribution Tax	360	1,440
Transfer to Reserves	**1,250**	**730**

Assumptions / Objectives drawn up in 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 Defence 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. As increase of 20% in Sales has been assumed over 2018. This includes an expected market growth of 12% and 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 is 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 is 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 savings in cost. 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 is 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 shareholders value.

(ii) The CFO also wants you to clearly EXPLAIN the inclusion of the objectives in each perspective of the balance score card.

(iii) You are therefore been entrusted with the additional 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 7 :

(i) Balanced Score Card

Perspective	**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 Productivity	Increase output per man per day	As agreed under the long-term settlement	From XX to YY	Training of employees 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 (production for defence, aerospace)	To keep pace with changing technologies and to de-risk exposure to few sectors	Timeline	By MMYY (e.g. Dec.2020)	Specific training Participation in seminars on new technologies
Explore possibilities for tie-ups on products for Electric Vehicles	Future growth though products for Electric Vehicles	Timeline	By MMYY (e.g. Jun.2020)	Appoint a consultant To look at possible partner Prepare a road map to achieve the objective

(ii) Rationale for each of the above perspective :

a. EVA has been included under "Financial Perspective" as this is what the company intends to achieve. It is a good measure of shareholders 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.

b. New products and improvement in on time delivery 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.

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

d. As the balanced score card is not just 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.

(iii) EVA Calculations

Particulars	**2018 (Est.) ₹ Million**	**Budget 2019 ₹ Million**
PAT	1,610	2,170
Add: Interest adjusted for tax [Interest x (1-0.3)]	140	140
NOPAT	**1,750**	**2,310**
Opening Capital Employed : (see assumptions below)		
Equity (14%)	3,000	3,000
Opening bal. of Reserves	1,000	2,250
Opening bal. of 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, Capital Employed is opening equity, reserves and debt. Similarly, for 2019, Capital Employed is opening equity, reserves and debt have been considered.

Economic and accounting depreciation were assumed to be the same.

Question 8

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 will have a significant impact on 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 is facing the challenge of finding new customers, offering new products, and collection of dues. It is facing 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, textiles and wastewater treatment and a few other industries.

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 double the turnover by 2024 with 2019 as the base. He wanted the CFO to make out a draft Balance 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

Particulars	**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 :

1. PPM has deteriorated to 115 to 2019 from the best of 25 achieved in 2017.
2. Working Capital turnover ratio (Sales/ Working Capital) has deteriorated to 34 times from 67 times in 2017.
3. The company also lost three of its customers who cited quality and price considerations.
4. 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 8 :

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 :

1. 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.
2. Top-line (sales) related: Declining sales growth, slowdown in economy, dependence on auto industry, lack of new products, new customers, and loss of existing customers.
3. Operations including procurement: Increasing PPM levels, input cost increases.

Balanced Score Card :

Perspective	Measures / Targets
Financial Perspective	▪ Grow Sales by 10% (over 2019) by December 2020. ▪ PBT Margin for 2020 not to be less than 10%. ▪ WC turnover ratio to be 60 by December 2020.
Customer Perspective	▪ Bring down PPM levels to 50 by March 2020. ▪ Bring down Cost of Production by 5% and share 50% savings with customer. ▪ Carrying out a Customer Satisfaction Survey by March 2020 and implement actions by December 2020.
Internal Perspective	▪ Launch and adopt Total Productive Maintenance 1. Complete training by April 2020. 2. Launch and adoption from May 2020 ▪ Form a cross functional team for working on, monitoring and improving WC T/O ratio; through reduction of inventory (reduce number of days FG is held from xx to yy), speedy collections (reduce number of days the receivables are outstanding 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 redesign 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

1. 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.

2. Including Total Production Maintenance will help the company address quality issues and productivity of machines. This initiative will not only improve customer satisfaction but also improve bottom line.

3. Inclusion of PPM, cost and customer surveys will improve Customer satisfaction, customer retention, bring in new customers and will stop the loss of existing customers.

4. 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

Question 9 :

Mother Co. Ltd has two business units, viz. a BPO unit engaged into telemarketing, and a KPO unit focussing on business analytics. Recently the CEO was reviewing the half yearly financial data which had the following key indices :

Turnover of BPO unit at 90% capacity utilization	₹ 250 Lakhs
Turnover of KPO unit at 60% capacity utilization	₹ 550 Lakhs
Profit Margin of BPO and KPO units respectively	18% and 15% respectively
Present number of shared employees from the BPO unit to the KPO unit on requirement basis	10 employees
Number of hours required on cross training of one employee and the rate per hour	Approx. 10 hours at ₹ 3,000 per hour

The CEO's next half year's overall target for the company is ₹ 1,200 Lakhs with a profit margin of 18% for the company as a whole. However, the BPO unit head has told categorically to the CEO that he cannot spare any additional employee as the BPO is working at optimum capacity. The KPO unit head, on the other hand, finds it cost effective to cross train employees of the BPO for specific tasks instead of hiring directly from the market.

Required :

(i) Analyze the strategic problem that Mother Co Ltd. is facing.

(ii) LIST few suggestions in brief.

Answer 9 :

(i) The present position of the company is as under :

Particulars	**BPO**	**KPO**	**Combined**
(a) Turnover (in ₹ Lakhs)	250	550	800
(b) Capacity used (given)	90%	60%	--
(c) Turnover at full capacity (in ₹ Lakhs) [a / b]	277.78	916.67	1,194.45
(d) Profit Margin (given)	18%	15%	--
(e) Present Profit (in ₹ Lakhs) [a x d]	45	82.5	127.50
(f) Profit at full capacity (in ₹ Lakhs) [e/b]	50	137.5	187.50

In Mother Co. Ltd., both unit heads are focussing only on their respective unit's performances rather than strategizing on the company's performance growth as a whole.

Calculations revealed that the BPO unit generates higher profit margin on sales and KPO unit generates lower profit margin on sales. However, BPO contributes around 35% of the combined profit of the company (i.e. 45/127.50) and KPO contributes around 65% of the combined profit of the company (i.e. 82.5/127.50).

It is clear that the strategic problem being faced by Mother Co. Ltd. is concerned with the divisional performance measures versus **goal congruence.** The CEO's target for the next half yearly is really ambitious, and this can be achieved only if goal congruence is met by the heads of both units.

(ii) Few brief suggestions are given below :

- Overall revenue target of 1,200 lakhs can be achieved if the capacity utilization for both the divisions is at 100%. Calculations above shows that the combined sales shall be 1,194.45 lakhs at 100% capacity utilisation. It is just short of 1,200 lakhs.
- Company's target profit margin is 18%. BPO is already generating this profit margin. We need to improve the profit margin of KPO by 3% through means of cost reduction techniques.
- Cross training can be helpful in optimum utilization of work force. However, KPO division should first try to utilise its 40% idle capacity in the optimum manner.

Question 10 :

An apparel manufacturing company has a factory in Ahmedabad, making denim ....

It is already covered in Amendment Batch 4 Notes - Q.2 of RTP Nov. 2020 Exam.

Question 11 :

Kristin LLP sells wide range of household products. The firm has recently ....

It is already covered in Amendment Batch 4 Notes - Q.8 of RTP Nov. 2020 Exam.

Question 12 :

Olderhelp India is a leading charity working with and for the disadvantaged ....

It is already covered in Amendment Batch 4 Notes - Q.9 of RTP Nov. 2020 Exam.

Question 13 :

Innovation Ltd. has entered into a contract to supply a component ....

For Version 3 students : It is already covered in your Regular Batch - Volume I - Q.6 - Page 73

For Version 2 students : It is already covered in your Regular Batch - Volume I - Q.6 - Page 83 with the name Revolution Ltd.

Question 14

Venice Light Works (VLW) manufactures multicolour glow bulb (MCG-10) used for lighting and decoration. MCG-10 considered as reliable product in market due to zero-defect. VLW sells MCG-10 through retail-chains and individual shopkeepers apart from factory outlet. MCG-10 has demand throughout the year but there is high demand during festival seasons especially ahead of Diwali. Company follows the lot purchase system and manufactures the product ahead of peak season of festivals. Presently the VLW is working at 80% of capacity and manufactures 4,00,000 bulbs annually, at following **per unit cost** :

Particulars	**Behaviour**	**Amount (in ₹)**
Direct Material	Variable	22
Direct Labour	Variable	6
Factory Overheads : 1. Engineering Cost 2. Machining Cost 3. Inspection Cost	 Fixed Fixed Variable	 10 5 5
Administration Overheads	Fixed	12
Selling and Distribution Overheads	Fixed	12
Total cost per unit		**72**

Recently the competition in decorative lights & electronics market has escalated, due to goods imported from Chinese manufactures at cheaper rates. Such imported light bulbs are also sold through same shops at which MCG-10 is available for sale. Due to cheaper rates, customer prefer imported light bulb rather MCG-10.

To be competitive in the market, the marketing department of VLW conducted research and suggested that price should be 12.5% lower than the current prices. VLW during last three financial years and during current year records the pre-tax profit @ 10% of sales. Management of VLW wish to earn the same rate of profit margin in upcoming years too.

Production and Operations manager is of the opinion that cost reduction in order to be competitive in market may result in reduction in quality, whereas Manager – Quality control suggest, if number of inspection staff increased, then inspection can be performed at each stage and defect can be curtailed at the earliest stage to eliminate rework cost.

Management accountant is of the opinion that since MCG-10 is a mature product, hence majority of cost associated in production of MCG-10 are committed in nature. Price cutting seems difficult and it may hit the top line and bottom line adversely. In response to him, Chief Engineer suggests that product (MCG-10) can be redesigned. However, marketing manager has shown his resistance on the suggestion of redesigning of product because according to him 'existing product appearance and features are key reasons for popularity of product in market and leads to sale'.

Required :

(i) CALCULATE then price suggested by marketing department.

(ii) COMPUTE the target cost and new margin, appraise percentage decline in margin.

(iii) If proportionate cost reduction plan is applied, then

a. CALCULATE planned cost reduction for each cost category.

b. EXPLAIN proportionate cost reduction plan.

(iv) Based upon discussion taken place among the functional managers, EVALUATE the possibility of cost reduction in order to analyse the possibility of application of target costing. Also suggest course of action to adopt.

Answer 14 :

(i) Price suggested by marketing department (i.e. Target Price)

Current cost per unit = ₹ 72 per unit

Profit (margin) @ 10% of sale price i.e. 1/9th of cost

Hence, Current Sale Price = ₹ 72 + (1/9th of 72) = ₹ 80 per unit

New price suggested by Marketing Dept. is 12.5% less than the current price

= ₹ 80 – 12.5% of 80

= ₹ 80 - ₹ 10 = ₹ 70 per unit

(ii) Target cost and new margin

Target sales price – Profit margin (i.e. 10% of sale price) = Target Cost

Hence, Target Cost = ₹ 70 – 10% = ₹ 63

New Margin (under target costing) is ₹ 7 per unit

Percentage decline in margin

$$\frac{\text{Existing Margin – New Margin (under target costing)}}{\text{Existing Margin}} \times 100$$

$$= \frac{8 - 7}{8} \times 100$$

= 12.5%

Note : There is a decline in margin in absolute terms i.e. by ₹ 1 per unit, whereas in relative terms, the margin remains same i.e. 10% of sale price.

(iii) Planned cost reduction for each cost category under proportionate reduction plan

The cost should be reduced from 72 to 63 per unit i.e. by 12.5% (9/72).

Amount in ₹

Particulars	**Existing Cost**	**Target Cost**
Direct Material	22	19.25
Direct Labour	6	5.25
Factory Overheads :		
1. Engineering Cost	10	8.75
2. Machining Cost	5	4.375
3. Inspection Cost	5	4.375

Administration Overheads	12	10.50
Selling and Distribution Overheads	12	10.50
Total Cost	**72**	**63**

Under proportionate cost reduction plan, cost for each category is proportionately reduced by 12.5%. Hence, a presumption is needed to be taken that all the cost are avoidable in nature. Whereas in case of every business; there are some cost categories which are unavoidable and committed in such a way that, these continue to occur even in shut down situation (e.g. salary to guard, minimum rental for electricity and water meter etc.). Same is pointed by Management Accountant, that product is matured in nature (means not in designing or research phase) hence committed cost may be unavoidable in nature.

Note : Students must note that all fixed costs are not unavoidable costs. Some fixed costs may be avoidable in nature.

(iv) Possibility of cost reduction & Suggested course of active for VLW

Target costing comprises four stages. First being determining the product's target price, quality, and functionality; second determine the target cost; thirdly designing the product and production process to achieve the target cost, and fourth use pilot project to evaluate feasibility. Based upon discussion taken place among the functional managers, it is evidential that VLW is presently moving towards third stage.

As stated by management accountant that product MCG-10 is of mature nature, hence majority of the costs are of committed nature, hence may be unavoidable. Product MCG-10 is material-oriented product and raw material cost is around 30% (22/72) of total cost. So, if gain sharing arrangement can be entered with vendor then surely VLW can save some portion of material cost.

As said by production and operation manager, cost reduction may lead to compromise with quality. He may be right, but he needs to look for scientific way to reduce the cost of operations like change in batch size (if required can shift to JIT) or outsource some part of operations; scientific management can also be applied in order to curtail motion time and reduction in labour cost.

Quality Manager is of the opinion that with extra inspection staff, quality can be assured, but appointment of additional inspector and supervisor will also lead to increase in cost; hence effective way to ensure quality while reducing cost lies in the application of TQM and Kaizen. Kaizen costing will be of great help to management of VLW to cut the cost, with support and participation from workers.

Chief Engineer's suggestion is appreciable, because target costing is most beneficial in those case where the product is in designing and planning phase. As per research around 70-80% of cost is committed at the stage of designing of product. It is important to note that the word ‘committed’ is used as ‘not incurred’. Therefore, cost being committed (i.e. not incurred cost) will be incurred when it becomes due in course of production. But redesigning is not feasible from the prospects of marketing of product as per the statement made by marketing manager.

Marketing manager can conduct research in order to develop understanding of the temperament of customers of MCG-10, whether they are price sensitive or conformance to need is their priority. If customers are found to be price sensitive (existing recommendation of marketing team shows high possibility of this, because marketing team feels customers can be retained if price is reduced by 12.5%), then product redesign may be opted. But if conformance to need is their (customers) priority, then value chain analysis can be used to identify the activities which creates value to customer and non value added activities can be eliminated in order to reduce the cost.

So, there are possibilities to reduce the cost, even if not in all the cost category then surely in some of the categories; so that target cost can be achieved.

Question 15

Impax Electronic Limited (IEL) is manufacturing wide varieties of torches operated on power batteries, specially designed for trekking and travellers, apart from domestic use. For which they purchase bulbs from Glow Lights and Bulbs (GLB), mostly G3 1M Screw 7.5V bulb is used in torches. Due to lockdown and outbreak of COVID the demand of torch falls significantly, and factories allowed to work at 1/3rd of capacity. Considering the same production department slows down the production, causing a huge piled-up inventory of raw material. This will be expected to result in high storage costs. Hence to attain cost-effectiveness; IEL needed to move from tradition system to Just-in-Time (JIT) system in a phased manner. There are two major departments operating in IEL i.e. Purchase, and Production. In the first phase, the purchase department is considering the adoption of JIT purchasing.

The annual demand for G3 1M Screw 7.5V bulb (bulb) is 24,000 units at IEL. Presently, the purchase price is ₹ 80 per bulb. Currently, the annual demand is ordered in 24 orders of equal size and the cost of placing an order is ₹ 10 which is expected to remain same in JIT regime too. Material handling, insurance, and other carrying costs is ₹ 2, ₹ 1, and ₹ 1.5 respectively per unit per annum.

Under the JIT system, the price is expected to increase to ₹ 80.05 per bulb. GLB is a reputed company for the quality of its products and timely delivery. As a result of frequent orders, the number of orders increased to 120 under the JIT regime and order size decrease proportionally. Material handling cost is expected to reduce to ₹ 1.2, whereas other carrying costs will reduce by ₹ 0.5 and insurance cost remain at the same level. Lower inventory level will cause a stock-out cost of ₹ 5 per unit on 0.25% of annual demand.

The required rate of return for IEL is 16%.

Required :

(i) (a) Is the JIT process is different for the purchase and production department? STATE the reason to support your opinion.

(b) STATE any three areas in which JIT purchasing may reduce cost significantly to bring the cost efficiency.

(ii) COMMENT, whether purchase department of IEL should move to JIT purchasing, presuming the same annual demand.

Answer 15 :

(i) **(a)** **Just-in-time** (JIT) is the management philosophy based upon demand pull system rather than supply-push system. It helps us to reduce inventory management cost, with a single piece production flow.

JIT process is different for purchase and production department, due inherent nature of the function they render, despite the purpose of both is to de-clutter store/assembly line at the production floor and reduce the cost.

JIT if applied in purchases by purchase department then known as **JIT purchasing**, which means materials should only be purchased, when required for production.

Whereas if JIT is applied by the production department, it will be termed as **JIT production** and meant that finished products should only be produced, as needed to meet actual customer demand.

(b) The areas, where JIT purchasing is expected to reduce cost significantly :

1. **Interest cost of working capital** - JIT purchasing will reduce the level of raw materials, which causes a reduction in the amount blocked as working capital, hence interest cost (either actual or opportunity) will reduce too.

2. **Reduction in storage cost** – As we know JIT purchasing reduces the level of raw material stored, hence storage cost is expected to reduce.

3. Since JIT purchasing reduces the inventory levels of raw materials, hence **sorting** (first S out of 5S) become easy and **motions** (as per motion study) also reduced, which reduces labour and overhead cost as well.

4. Material is purchased as and when required hence **wastage and scrap** will be less due to a relative reduction in evaporation and tendency to obsolete.

(ii) **Chart of cost comparison under present and JIT regime (annual basis) :**

(Amount in ₹)

Particulars	**Present**	**JIT system**
Purchase Costs = 24,000 units x ₹ 80 = 24,000 units x ₹ 80.05	19,20,000	19,21,200
Ordering Costs (number of orders x ordering cost per order) = 24 orders x ₹ 10 = 120 orders x ₹ 10	240	1,200
Opportunity Carrying Costs (i.e. interest cost) = Average inventory x (purchasing cost per unit x 16% per year) = 500 units x ₹ 80 x 0.16 = 100 units x ₹ 80.05 x 0.16	6,400	1,280.80

Other Carrying Costs (insurance, material handling etc.) = Average inventory x carrying costs per unit p.a. = 500 units x ₹ 4.50 = 100 units x ₹ 3.20	2,250	320
Stockout Cost under JIT system = ₹ 5 x (0.25% of 24,000)	-	300
Total Cost of Inventory Management p.a.	**19,28,890**	**19,24,300.80**
Incremental savings in shifting to JIT	**4,589.20**	

Decision : Since the implementation of JIT purchasing results in an **incremental savings of ₹ 4,589.20** on a per annum basis, hence it is **economically viable** to move to JIT system of inventory purchase.

Working Note 1 – Average Inventory

Particulars	**Present**	**JIT system**
(a) Annual Consumption	24,000	24,000
(b) Number of orders placed	24	120
(c) Order Size [a / b]	1,000	200
(d) Average Inventory [c / 2]	500	100

Working Note 2 – Carrying Cost per unit p.a.

Particulars	**Present**	**JIT system**
Material handling (given)	2	1.2
Insurance (same)	1	1
Other carrying cost (reduction by 0.5)	1.5	1
Carrying Cost per unit per annum	4.5	3.2

Question 16

Royal Bakers is famous for cakes and cookies. Mr. Das the owner at Royal Bakers is interested in offering affordable products to their customers, hence keen to capture the small scope of cost-effectiveness. Royal Bakers located in the centre of the city where space has a huge cost and royal baker is running out of space during peak hour causing a loss of sale. Most of the customers are regular to Royal Bakers. Royal Baker is known for fast service. Mr. Das wish to be true to the tagline ‘Close your eyes to wish and open them to find it cooked for you’. The hurdle rate is 12% (i.e. minimum expected rate of return).

Non-availability of skilled worker and high attrition rate of worker including chef is the cause of worry for Mr. Das. In order to retain workers, Royal Baker is paying a higher salary than industry standards. The raw material is easily available as and when it is required. Royal Bakers is considering two different models of baking oven machine to replace its old oven. The baking capacity of both machines are the same and both will occupy a similar amount of space.

The first model is the automatic oven which will cost about ₹ 10,00,000. Another model is the semi-automatic oven which will cost ₹ 5,60,000. The annual operating cost (including depreciation) is 40% of the acquisition cost, in case of automatic machine. The annual operating cost (including depreciation) is ₹ 4,20,000 for semi-automatic oven. After 3 years of use, the automatic oven can be salvaged at ₹ 70,000, whereas semi-automatic oven will fetch ₹ 20,000 only. The automatic oven is more advanced and equipped with latest technologies to speed up the baking, because only ingredients need to be inserted in right proportion and mix. Whereas in semi-automatic machine, some part of the process needs to be performed manually by the workers.

Required :

ADVISE which oven shall royal baker acquire.

Note :- You can ignore taxes but need to consider the time value of money; decimal accuracy up-to two digits is expected.

Answer 16 :

Student Note : These type of questions are covered in the subject of Financial Management (FM) at CA Intermediate level. When two options give equal performance or generate equal revenue, then these are compared using costs.

The annual cash outflow of the two options is discounted using time value of money and it is added with initial cash outflow. The option where total cash outflow is lowest is chosen, subject to non-financial considerations.

Statement of the Comparable Life Cycle Cost :

Particulars	**Automatic**	**Semi-Automatic**
(a) Acquisition Cost	10,00,000	5,60,000
(b) Salvage Value	70,000	20,000
(c) Annual Depreciation [(a - b) / 3 years]	3,10,000	1,80,000
(d) Annual Operating Cost *(40% of 10,00,000)	*4,00,000	4,20,000
(e) Annual Cash Operating Cost [d - c]	90,000	2,40,000
(f) Annuity factor @ 12% for 3 years	2.40	2.40
(g) PV of Cash Operating Cost for 3 years [e x f]	2,16,000	5,76,000
(h) PV of total cash outflow [a + g]	12,16,000	11,36,000
(i) PV of Salvage [b x 0.71]	(49,700)	(14,200)
(j) Total Cost of the Oven over the life cycle [h - i]	11,66,300	11,21,800

Advise :

Based upon life cycle cost, Royal Bakers are advised to acquire semi-automatic oven, because it causes a **saving of ₹ 44,500**. However, management decision is also impacted by qualitative and non-monetary factors. Hence, decision may differ if Royal Bakers consider -

Finishing of baked products – the look and taste

It is obvious that the look, taste and deliciousness may be different for the two machines. It is critical from the prospective of customer retention because a large number of the customers are regular to the royal baker. These factors may go in favour of any of version of oven. If look goes in favour of automatic oven, then taste may be in semi-automatic due to corrections by the worker during baking and relatively authentic preparation.

Manpower

Availability of skilled worker and retention of worker is the cause of worry presently. In order to operate an automatic oven obviously fewer workers are required; hence money can be saved by cutting down recruitment cost and excess salary paid to the workers in order to retain them. On other hand, skilled workers are already in scarcity, automatic machine obviously requires a more technically competent operator. But largely this factor moves in favour of automatic machine.

Space

Royal Bakers located in the centre of the city where space has a huge cost and royal baker is running out of space during peak hours causing loss of sale. Although the size of both the ovens are same, the number of workers and space required for them surely be less in case of the automatic oven. Hence this factor again moves in favour of automatic oven.

Power consumption & availability

Although the power consumption cost is presumed to be already included in annual operating cost hence considered as a monetary factor but need and availability of power is a very important factor. In absence of stand-by power back-up, power cut may lead to downtime. It will lead to complete downtime for the automatic oven and to a certain extent in the case of semi-automatic (because the manual process will keep going on). Stand-by power back-up will also have an additional cost.

Customisation

In case of cookies, it may be okay to produce the standard product; but the cake needs to baked as per the order of the customer, who may seek customisation. Scope of customisation needs to evaluated. In the case of the semi-automatic oven, the scope of customisation will be relatively high.

Speed

Royal Baker is known for fast service, and Mr. Das wish to be true to tagline 'Close your eyes to wish and open them to find it cooked for you'. The automatic oven is more advanced and equipped with latest technologies to speed up the production. Hence this factor moves in favour of automatic oven.

Detection of the defect

If speed thrills, then it kills too. In case of the bakery, rework and reprocessing is hardly possible, even if possible then at a huge cost. Hence it is essential to keep vigil control over quality and detection of defect at the earliest stage. In the semi-automatic oven, there is the scope of reviewing the material after stage/s and improvisation can be done.

Overall, Royal Bakers should take the decision only after due and careful consideration of the above factors.

Question 17

Sacred Heart Hospital (SHH), a renowned multispecialty hospital offering affordable healthcare service to one and all. Despite charging reasonable prices SHH is offering the best possible services to its clients. Hence SHH is the undisputed choice among the residents for healthcare services. Since SHH is charging a reasonable fee, hence controlling and managing cost becomes critical for them, especially the cost involved in non-value activities or activities which are not of principle nature. SHH has a core team of 32 specialist doctors and some among them are resident doctors. The staff comprises an administration team of 15 members, apart from around 120 nurses supported by 40-50 grade-four employees, some of these support staff are casual workers and some are the resident staff.

SHH is running an in-house subsidised canteen for Doctors and Staffs exclusively. It operates on all calendar days. This canteen was established during initial days of SHH because then the nearby areas were not fully developed. Only a few eateries were there and either they were un-hygienic or excessively costly. Due to extending urban municipal limits, scenario has changed now. Management at SHH is considering the two alternatives - first being 'downsize the operation by cutting-down the choices to eat and reduction in subsidy' or 'outsource canteen to some external caterer'. Patients' food is prepared by the dietary department and there is a separate canteen for attendants and visitors of patients.

Current scenario

On daily basis around 160 coupons for meal @ ₹ 40 and 120 coupons for snacks (accompanied with either tea or cold drink) @ ₹ 20 are sold apart from the sale of ₹ 2,000 for juices and biscuits etc. These supplies costs 70% of sale price. Canteen also incurs ₹ 25,000 for utilities and maintenance each month. Canteen works round the clock, with mutual rotation among the staff. The meal is served during specified hours, whereas snacks, juices and biscuit are available throughout the day.

Presently canteen has a staff of 7 members, including a chef, helpers, and cleaners. The monthly salary of these 7 staff members is ₹ 1,40,000. SHH also contributes ₹ 9,120 per month, as statutory labour benefits. Only those employees are registered for such benefits, whose salary are below to threshold limit prescribed under respective labour legislation.

Downsize the operation by cutting-down the choices to eat and reduction in subsidy

With the aim to reduce the subsidy by at-least 50%, the operation can be downsized by cutting-down the snacks from menu. The price of Meal will also be increased by 5%. Cut down will reduce the staff requirement, resultantly monthly salary expenditure is expected to reduce by ₹ 63,500. Whereas SHH contribution to statutory labour benefits also reduced to ₹ 5,420. The average cost of supplies is increased by 3% of the sale price. There is an increase in the sale of meal coupon by 30 coupons, largely due to the absence of alternate choice. The sale of juice and biscuit will also increase by 10%. Other aspects of operations will remain the same.

Outsource canteen to some external caterer

Against the advertisement of expression of interest, 4 proposals are received. Out of which only one was found suitable by the screening committee, which also meets all the established criteria. Such a proposal is from 'Annapurna Caterers'. They offered an annual lease value of ₹ 1,68,000 and share of 2% in revenue. Only 20% of monthly utility and maintenance expenditure pertaining to canteen will be recovered from Annapurna Caterers. It is expected by Annapurna Caterers that it will be able to sale 150 meals @ ₹ 50 each; 100 snacks @ ₹ 30 each apart from juice and biscuits of ₹ 2,500 on daily basis.

Required :

(i) ADVISE the management of SHH on downsizing the operations, supported with following points –

a) Whether downsizing operation by cutting-down menu is acceptable or not?

b) Whether SHH will be able to reduce the subsidy by 50%?

c) What **qualitative factors** SHH need to consider?

(ii) ADVISE the management of SHH on outsourcing option, supported with following points -

a) Does proposal from Annapurna Caterers is beneficial than downsizing or not?

b) Highlight any two non-monetary factors which SHH need to consider prior to outsourcing (in brief).

Assume it is a non-leap year; comprising 365 days.

Answer 17 :

i) a) Considering the statement of comparative costs and benefits mentioned below as table 1, from monetary aspects it is **strongly advisable for SHH to downsize the operation by cutting-down the menu; because it will result in saving of ₹ 6,27,039** (by reducing loss from ₹ 9,06,840 to ₹ 2,79,801)

Table 1- Statement of comparative costs and benefits :
(on yearly basis, the amount is in ₹)

Particulars	**Current**	**After cut-down**
(a) Daily sale of Meals	6,400 (160 @ ₹ 40)	7,980 (190 @ ₹ 42)
(b) Daily sale of Snacks	2,400 (120 @ ₹ 20)	--
(c) Daily sale of Juices & Biscuits	2,000	2,200
(d) Daily Total Revenue [a + b + c]	10,800	10,180
(e) Annual Revenue [d x 365]	**39,42,000**	**37,15,700**
(f) Material / Supplies [70% / 73% of revenue (e)]	27,59,400	27,12,461
(g) Labour / Salaries : Monthly Salary Statutory Contributions Total Monthly Labour Cost Annual Labour Cost	 1,40,000 9,120 1,49,120 17,89,440	 76,500 5,420 81,920 9,83,040
(h) Utilities and maintenance [25,000 p.m. x 12 months]	3,00,000	3,00,000
(i) Total Annual Cost [f + g + h]	**48,48,840**	**39,95,501**
(j) Loss (Subsidy by SHH) [e - i]	**(9,06,840)**	**(2,79,801)**

b) Considering the table 1, it is observed that loss (which is in the form of subsidy) is currently ₹ 9,06,840. If SHH downsizes the operation by cutting down the menu then such loss is also reduced to ₹ 2,79,801; hence saving in cost/subsidy is ₹ 6,27,039; which amounts to 69.15% of current subsidy.

Hence, SHH is able to reduce the subsidy by 69.15% against the target of 50%.

c) Management's decision will have qualitative implications also apart from monetary implications. Hence management needs to consider these non-monetary factors too. In the present case, SHH must consider the following factors -

Retrenchment of employees may have severe consequences – Cut-down will reduce the staff requirement, the question arises here whether such staff members are regular or casual. Based upon this fact, they will be either absorbed in some other department or retrenched. If transferred to some other department then the cost impact on such department (responsibly centre) needs to be considered. If retrenched then, whether the byelaws of SHH allow for the same? Does any compensation needs to be given? Even motivation of other employees may be jolted, because job-security is one of the major factors.

Even minor price increase has an impact on the pocket – Subsidised food and food coupons are usually part of employment benefits. The price of meal will also be increased by 5%. Such a change of 5% may not bother doctors and nurses, but Grade-four staff surely will be impacted by such change. Staff may reach to the conclusion that management is not employee-oriented and they are concerned with their profits only. This may lead to less participation and support from employees.

Resident doctors and resident Staff – Resident doctors and staff are key to any hospital. In the service industry, the employee has a direct impact on the value chain. The meal is available only during specified hours. Currently beyond those specified hours, snacks are available. However, if snacks are cut down from menu then it will be unjust for resident doctors and staff.

ii) a) As per the statement of cost and benefit mentioned in table 2 below, the gain out of outsourcing canteen facility is ₹ 22,900; whereas downsizing operation by cutting-down menu is causing a loss of ₹ 2,79,801. Hence, by outsourcing canteen facility, SHH will have a net monetary gain of ₹ 3,02,701.

Table 2 – Statement of cost and benefit of outsourcing canteen facility

Particulars	**₹**
(a) Daily sale of Meals (150 meals @ ₹ 50 each)	7,500
(b) Daily sale of Snacks (100 snacks @ ₹ 30 each)	3,000
(c) Daily sale of Juice and biscuits (₹ 2,500 on daily basis)	2,500
(d) Daily Revenue [a + b + c]	13,000
(e) Annual Revenue of Annapurna [d x 365 days]	47,45,000
(f) Lease Rental Income to SHH	1,68,000
(g) Share in Revenue for SHH (2% of 47,45,000)	94,900
(h) Utility and maintenance cost [3,00,000 x 80%]	2,40,000
(i) Gain out of outsourcing canteen facility [f + g - h]	22,900

Conclusion : Outsourcing offer from Annapurna Caterers is more beneficial than downsizing operations, hence management at SHH is advised to accept outsourcing proposal. Management may also give weightage to qualitative and non-monetary factors.

b) Major non-monetary factors which SHH must consider prior to outsourcing the canteen facility are -

- Quality of food / eatables provided by Annapurna Caterers.
- Price-increase by Annapurna will be a burden for staff and doctors.
- Whether the staff, which is presently engaged in canteen facility will be retrenched or transferred to another department.
- Legal implication and aspects of out-sourcing agreement.

Note – It is important to note that non-value-added functions can be easily outsourced based upon monetary aspects only, because they are not value generating. However, it does not mean they are not strategic. Here, in the present case, canteen facility is non-value adding activity but seems strategic in nature. Management of SHH can pay more attention on running the hospital and quality of treatment to patients, than running a canteen.

Question 18

Ajanta Digital Solutions (ADS) is a renowned name for manufacturing a wide variety of digital products for office and academic use. The 'Abacus division' of ADS is engaged in the production of basic calculators, capable of academic and commercial use. Presently Abacus is manufacturing only three models, named C-100, C-125, and C-500. These calculators are sold to customers through wide-spread retailers and distributors' network across the country.

During manufacturing process, each calculator needs to pass through various steps, before it gets ready. PC-IA is the essential step and performed manually, where processing chip is being installed, activated, and tested. The production capacity of Abacus is constraint by PC-IA. The basic information pertaining to top-line and the prime cost is as follows (Amount in ₹) -

Particulars	**C-100**	**C-125**	**C-500**
Sales price per unit	140	200	450
Material cost per unit	72	104	200
Labour cost per unit	30	52.5	75

All the process and division at ADS are operating for a single shift of 8 hours in a day. Conversion cost per hour (including labour cost) is ₹ 5,600. The standard output for PC-IA during a day is the processing of either 800 units of C-100 or 560 units of C-125, or 320 units of C-500. ADS is capable of selling more than, what they are presently capable to produce in all range of models. The CEO of ADS recently attended a science fair, 'Robo-tech 4.0'; where he saw a Robot developed by Synergy Robotics Limited, capable of assembly including installation of processing chip to any sort of device.

Required :

Management hired you as cost consultant, to advise on following aspects –

(i) On a random day, if 480 units, 140 units and 120 units of C-100, C-125 and C-500 respectively are produced and sold, CALCULATE at what efficiency level current constraint (bottleneck) is operational. INTERPRET the same. COMPUTE profit earned during such day.

(ii) FIND production of which model is more beneficial, considering the ranking (based upon throughput performance ratio).

(iii) APPLY Goldratt's five steps to remove the bottleneck at Abacus.

Answer 18 :

(i) Efficiency level can be measured with help of Efficiency Ratio. 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.

$$\frac{\text{Standard hours for actual production x 100}}{\text{Actual hours worked}}$$

= (9.8 hrs. / 8 hrs.) x 100

= **122.5%**

Working Note – Standard hour required for actual production

Product	Actual Output / day (Units) (a)	Standard Daily Output (Units) in 8 hours (b)	Standard Hourly Output (Units) (c) = (b) / 8	Standard Hours required (a) / (c)
C-100	480	800	100	4.8
C-125	140	560	70	2.0
C-500	120	320	40	3.0
Total Standard Time Required (in hours)				**9.8**

Interpretation – 122.5% signifies that efficiency (usage) of exploiting bottleneck activity is 22.5% better than the standard use. PC-IA is producing output which require 9.8 hours, in 8 hours.

Profit earned during the day

Particulars	**₹**
Revenue [(480 x 140) + (140 x 200) + (120 x 450)]	1,49,200
Less: Material Cost [(480 x 72) + (140 x 104) + (120 x 200)]	73,120
Less: Conversion Cost (including labour cost) [5,600 x 8 hrs.]	44,800
Profit	**31,280**

(ii) Statement of ranking, based upon throughput performance ratio (using throughput contribution)

Particulars	C-100	C-125	C-500
(a) Sale price per unit	140	200	450
(b) Material cost per unit	72	104	200
(c) Throughput contribution per unit [a - b]	68	96	250
(d) Maximum possible production in 8 hours (units)	800	500	320
(e) Maximum possible contribution per day [c x d]	54,400	53,760	80,000
(f) Conversion cost per day (5,600 x 8hrs)	44,800	44,800	44,800
(g) Throughput performance ratio [e / f]	1.21	1.20	1.78
(h) Ranking	II	III	I

Considering the throughput performance ratio (or TA ratio) and ranking above, most beneficial model to produce is C-500 followed by C-100 and C-125.

$$\textbf{TA Ratio} = \frac{\text{Throughput contribution}}{\text{Conversion cost}}$$

(iii) Application of Goldratt's five steps to remove the bottleneck at Abacus

Goldratt's theory of constraints describes the following five steps of identifying and removing the bottlenecks that restrict output.

1. **Identifying the System Bottlenecks** – At Abacus division of ADS, PC-IA is a bottleneck.

2. **Exploit the Bottlenecks** – Bottleneck capacity must be fully utilized. Although the efficiency of bottleneck activity is already 122.5%, but further attention on the optimum us of bottleneck activity is needed.

3. **Non-bottleneck activities are subordinate** – Bottleneck activity should be given priority over the non-bottleneck activities. Abacus should plan its production keeping PC-IA at the centre point, because even if the efficiency of other activities which are non-bottleneck, is enhanced beyond the current level; the output shall be restricted by PC-IA.

4. **Elevate the bottleneck** – Eliminate the bottleneck by enhancing the capacity and efficiency of bottleneck operation. Major changes (business re-engineering) or continuous minor changes (Kaizen) may be of some help. In the case of Abacus, introduction of Robot may be a way to elevate the bottleneck.

   Note – There will always be one bottleneck in the system, if such bottleneck is eliminated then a new constraint emerges as a bottleneck. Hence this process is continues. Ultimately improvement is a never ending continuous process.

5. **Repeat the process** – Apply step 1 to 4, for new bottleneck activity which emerges at Abacus and repeat the process.

Question 19

'Pristine Makers' is one of the largest laundry service provider for Suits. The firm has set a price of ₹ 510 for cleaning the 'suit set'. 'Pristine Makers' derived this price as follows : cleaning materials ₹ 35, labour (3 hrs. @ ₹ 50 per hr.) ₹ 150, variable overheads ₹ 70, fixed overheads (3 hrs. @ ₹ 15 per hr.) ₹ 45 plus mark-up 70% on total cost. 'Pristine Makers' is known for its quality work and timely delivery; hence, customers are willing to pay this premium price. Firm's employees receive a fixed salary. The "hourly rate" ₹ 50 is arrived by dividing the total salary by the total number of hours available. Variable overheads depend on the number of suits cleaned whereas fixed overhead rate is derived by dividing the total fixed cost by the number of labour hours available. Fixed overheads generally include office rent and administrative salary.

A local hotel approached 'Pristine Makers' as the regular cleaners of these suits are on strike. They enquired about the possibility of cleaning 130 suits in the coming week and they need the work to be done on a rush basis. 'Pristine Makers' has sufficient quantity of required cleaning material in stock for special order. It perceives that it could complete 60% of the special order during normal working hours. However, to complete the remaining 40%, some employees will have to work overtime. Overtime hours are paid at premium. Overtime rate would be one and half times the normal hourly rate.

Required :

(i) ADVISE the price it shall quote for the special order?

(ii) Does special order decision deal with excess supply or excess demand? ANALYSE

(iii) Whether such special order be accepted on rush basis? COMMENT

Answer 19 :

(i) Firms can face situations where they are confronted with the opportunity of offering for a one-time special order. In this situation only the incremental costs of undertaking the order should be taken into consideration. Quote should be made at prices that exceeds incremental costs. Any excess of revenues over incremental costs will provide a contribution to committed fixed cost. Incremental cost may be calculated in the following manner :

Particulars	**Amount (₹)**
Cleaning materials (130 suits x ₹ 35)	4,550
Overtime Labour (130 x 3 hrs. x ₹ 50/hr. x 40% x 1.5)	11,700
Variable overheads (130 Suits x ₹ 70)	9,100
Total Incremental cost	25,350
Incremental cost per suit [25,350 / 130 suits]	195

Thus, the **minimum price** that firm would charge is ₹ 195 per suit. This price is well below normal price of ₹ 510. Anything above ₹ 195 per suit is welcome.

However, in decision making, other conditions are equally important. For instance, if this is a one-time deal with **no prospect of repeat business**, then 'Pristine Makers' might well charge a premium over the normal price. Long-term implications also matter. The prospect of "getting a foot in the door" to quote for future business would push the price downward. Therefore, ‘Pristine Makers’ can price based on both the short-run benefits from accepting the order and the long-run consequences. Such special order definitely gives ‘Pristine Makers’ an opportunity to earn extra profits, however, other aspects also need to be analysed.

(ii) There is sufficient cleaning material for special order. If the current special order does not use up available stock, the firm could store the cleaning material for later use. It is most likely that ‘Pristine Makers’ fixed overhead costs will not change due to the special order which mainly consists of rent and administrative salaries. If 60% of the special order could be completed during normal working hours, then the firm clearly has some excess capacity in terms of labour hours. However, for the remaining 40% of the special order, labour will have to work overtime and will be paid 1.5 times. This clearly indicates that different resources in the ‘Pristine Makers’ have differing capacity levels. For labour resource, it is a case of excess demand. It is necessary to consider the opportunity cost of a resource, if it is in short supply, while computing the total cost of a special order.

(iii) There are two sides in this scenario. On the one side, firm can earn extra profits by accepting the special order. On the other side, the order received needs to be delivered urgently. Therefore, accepting such rush orders may affect the quality of service to regular customers and also timely delivery may not be complied with. Hence, the goodwill and brand name will be affected which in turn will affect the future profitability. Though immediate monetary benefits are seen, long time consequences also need to be analysed before accepting such rush orders. The firm's manager would need to consider both the short-run benefits from accepting the order and the long-run consequence on profitability.

Question 20

During September 2020, **Sandy** offers bundling and item packing facilities (for standard size 24”x12”x10”) to give best facility to satisfy its industrial customers’ need at the Great Ocean Warehouse. Sandy plans to pack 93,750 items at the rate of ₹ 4.50 per item. Sandy estimates that variable cost (all resources) will be equal to ₹ 1.50 per item packed and that fixed costs (i.e. rent, electricity, and maintenance charges) will be equal to ₹ 58,000 p.m.

In September 2020, Sandy packed 1,12,500 items and received ₹ 5,06,250 as total revenue. However, Sandy paid ₹1,80,000 on resources (including urgent purchase of tape at retail price). In addition, Sandy paid ₹ 70,000 to the warehouse administration for rent, electricity, and maintenance charges. (This past September was unusually hot, and Sandy is charged a percentage of the warehouse’s actual electricity bill.)

Required :

PREPARE a budget reconciliation report along with suitable analysis, reconciling budgeted profit with actual profit.

Answer 20 :

Workings

Following table shows Sandy's budgeted profit and actual profit for the month of Sept. 2020.

Particulars	**Budget**	**Actual**
(a) Items packed (units)	93,750	1,12,500
(b) Revenue (₹) [a x ₹ 4.50]	4,21,875	5,06,250
(c) Variable Cost (₹)	1,40,625 (93,750 x 1.50)	1,80,000 (given)
(d) Contribution Margin (₹) [b - c]	2,81,250	3,26,250
(e) Fixed Costs (₹)	58,000	70,000
(f) Profit (₹) [d - e]	**2,23,250**	**2,56,250**

Analysis of Variances :

Student Note : ICAI has used **Marginal Costing Approach** for reconciliation of profit. However, ICAI answer is presented in a paragraph format. I have presented the answer in standard costing format below :

(a) Sales Price Variance :

As there is no change in sales price, the Sales Price Variance = NIL

(b) Contribution Volume Variance :

= Std. contribution per unit x (Bud. Qty. - Actual Qty.)

= (4.50 - 1.50) x (93,750 - 1,12,500)

= ₹ 3.00 x 18,750 units = **₹ 56,250 (F)**

Note : This variance arises, because Sandy packed 18,750 more items than budgeted.

(c) Variable Cost Variance :

= Std. Variable cost of actual output - Actual variable cost

= (1.50 x 1,12,500) - 1,80,000

= ₹ 1,68,750 - 1,80,000 = **₹ 11,250 (A)**

Note : There is no adequate data to segregate Sandy's variable cost variance into price and quantity elements. To compute these variances, we would require the amount of resources Sandy budgets to use per item packed and the actual & budgeted price of each resource. Hence, we are unable to comment whether the quantity consumed is higher than expected or prices of input resources has gone up.

While the issue appears to suggest that Sandy's adverse variable cost variance arose mainly due to spending more on urgent purchase of tapes than planned. However, it is not clear that the entire ₹ 11,250 (A) variance is attributable to this. In fact, it is likely that the tape price variance was greater than ₹ 11,250 (A) and that Sandy had a favourable resource quantity variance to offset this.

(d) Fixed Cost Expenditure Variance :

= Budgeted fixed cost - Actual fixed cost

= 58,000 - 70,000 = **₹ 12,000 (A)**

Note : Fixed cost includes electricity expenses. Due to unusually hot September, Sandy had to bear a % of actual electricity bill of the warehouse. Thus it seems that this variance is uncontrollable in nature.

We can now prepare the following budget reconciliation report :

Particulars	**(₹)**
Budgeted Profit	2,23,250
Add : Contribution Volume Variance (F)	56,250
Less : Variable Cost Variance (A)	11,250
Less : Fixed Cost Expenditure Variance (A)	12,000
∴ Actual Profit	2,56,250

Conclusion : From the table, we can identify that Sandy's actual profit for September 2020 was ₹ 33,000 higher than the budgeted profit (₹ 2,56,250 - ₹ 2,23,250) i.e. Sandy's total profit variance is ₹ 33,000 (F).

Question 21 :

Heathcare hospital provides medical care to patients to all strata of the ....

For Version 3 students : It is already covered in your Regular Batch - Volume III - Q.5 - Page 194

For Version 2 students : It is covered in Amendment Batch 2 - Q.6 - Page 103

Question 22 :

Learning Horizons is an educational institute that conducts courses for ....

For Version 3 students : It is already covered in your Regular Batch - Volume III - Q.2 - Page 177

For Version 2 students : It is covered in Amendment Batch 2 - Q.4 - Page 9

Question 23 :

NEC Ltd. forms a Committee consisting of its Production, Marketing and ....

For Version 3 students : It is already covered in your Regular Batch - Volume I - Q.7 - Page 115

For Version 2 students : It is covered in Amendment Batch 2 - Q.2 - Page 37 with the name as Zen Ltd.

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