PAPER – 5: STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

×××CASE STUDY ×××

Ethical and Non- Financial Considerations

Food & Beverage

1. **Nutty Bites** produces many edible snacks that are very popular especially among children. Peanuts, Peanut oil are essential ingredients in many of its products. They are currently facing this ethical issue –

   "Medical studies have indicated peanut allergic reactions are on the rise. The prevalence is more profound among children. Reactions can range from hives around the mouth to potentially life threatening reactions when exposed even to the slightest trace of peanuts. There is growing media campaign to force companies like Nutty Bites to make disclosure about the presence of peanut on its package labelling"

   Nutty Bites is a mid-size company that has a growing market. Risk to peanut exposure can come not just from the presence of peanuts in its products. Some of its bought-in ingredients (raw material input) are cooked in peanut oil. There are risks of "cross-contamination" amongst products. Let us say, an equipment has been used produce cookies that has peanuts. Next, the equipment is used, without being cleaned, to produce chips that does not have peanuts as an ingredient. Some portion of the peanuts / peanut oil could contaminate that specific batch of chips produced. Since labels of chips would not mention "peanuts" as an ingredient, it poses a potential risk of causing allergic reaction to a customer unaware of this contamination.

   Management of Nutty Bites has called for a meeting to discuss this issue. *"The issue need not be addressed at all. After-all Nutty Bites is doing nothing against the law"* is the opinion of many members on the board of the company.

   Required

   (i) EXPLAIN why Nutty Bites should attempt to address this issue.

   (ii) STATE potential benefits that business can garner by addressing this issue.

   (iii) RECOMMEND, with reasons, the avenues available to Nutty Bites to address this ethical issue.

   (iv) EVALUATE the recommended solutions.

Outsourcing

Hotel Industry

2. **Staywell Hotels** was established 10 years ago as a budget hotel in the vicinity of Mumbai airport. It provides accommodation for cost-conscious travelers visiting the city for short stay lasting a day or two. Typically, a room would provide comfortable beds, high speed internet connection, air conditioning facility, coffee machine, fridge and free television service. Food service based on a limited menu is provided on the premises. It has few conference rooms that provide space for guests to hold business meetings. This saves them precious time otherwise wasted in travelling on congested city roads. The hotel provides free shuttle service to and from the airport at specific times during the entire day. Hotel's proximity to the airport, the free shuttle service and convenience of conducting work at the conference rooms have been marketed to attract guests to stay here. The guests also comprise of people who are in transit between airports. Also, when there are long-duration delays in flight operations due to which passengers need to be provided overnight accommodation, few airline operators host their guests here. Like all other guests, these airline operators are also interested in Staywell for its location and low-cost room rental.

   Over the past decade, management of Staywell has ploughed in profits from this establishment to acquire similar properties in other major cities. They function based on business model similar to the original establishment in Mumbai. All of them are now functioning as well-established budget hotels near city airports for cost-conscious business travelers. In all, Staywell hotels have 18 properties spread over 15 cities. To keep its costs of operations within control, Staywell hotels has outsourced its cleaning and food service to specialized vendors. Cleaning service includes cleaning of kitchen crockery, bedding, laundry and housekeeping of premises. The entire set of activities related to preparation of food has been outsourced. Vendor service has been satisfactory, barring few instances where guests have complained of unhygienic rooms or non-palatable food service. However, due to high guest volume and quick turnover of guests due to short stay periods, this has never been a hindrance to business.

   This business model has been profitable since its establishment. Staywell Hotels has a sizeable market share in this segment. Competition has increased in the recent past. Price wars have put pressure on profit margins in this segment. The management plans to continue to operate in this segment to maintain its market presence. At the same time, to sustain business in the long term, the management of Staywell Hotels now wants to foray into developing properties for luxury resorts. Target guest segment are vacationing tourists interested in an enjoying a laid-back time in scenic places. These guests would not mind paying premium for availing good quality service.

Required

(i) IDENTIFY and EXPLAIN the various primary activities of Staywell in its value chain.

(ii) IDENTIFY and EXPLAIN the stage of product life-cycle.

(iii) EVALUATE the risks of outsourcing cleaning and food services for the luxury resort properties.

××× CASE SCENARIO×××

Ethical and Non- Financial Considerations

Clothing Industry

3. **Sprinter Sportswear** is a multi-national company with that has a market presence in 23 countries. Yet, the company does not own even a single factory. Production has been entirely outsourced to 175 factories located in places where cost of operations is low. Factories cater entirely to Sprinter's procurement demands. These factories operate independently, Sprinter plays no role in their operations. Procurement from this supplier network is the stored at distribution centers from where dispatches are made to wholesalers of sportswear and apparel.

Recent news reports from some of the Third World foreign countries have indicated that high child labor employment. Child labor although against the law in these countries is resorted in order to keep cost of operations low. Factories in these countries do not directly employ children. Instead they subcontract the work to contractors. These contractors in turn hire children illegally without the local knowledge of local law enforcement authorities. In addition, working conditions in these factories are very unhygienic and oppressive.

Sprinter initially turned a blind eye to this problem, since it only acts as a customer of these factories. Sprinter, as a company, has done nothing illegal as part of company operations. However, increased focus given to corporate social responsibility, has forced the Board members to consider taking action against such factories.

Required

(i) DISCUSS why Sprinter sportswear should attempt to address this issue.

(ii) SUGGEST some of the actions that the company can take to address this issue.

×××QUESTIONS×××

Performance Measurement

Fast Food Company

4. Established in the year 1999, **FF Company** is the pioneer of fast food in Southampton. It delivers a truly fresh, affordable, made to order sandwiches, burger, and other meal in a friendly and relaxed environment. The popularity of the sandwiches, burger etc. continued to grow over the decades but one thing remained the same and that was its core values and principles:

- Always provide exceptional service to valued guests;
- Provide the highest quality menu items at a price everyone can afford and enjoy; and
- Keep operating costs low and ensure to have great systems in place and never stop improving.

It provides a comfortable place for people to unwind over interesting conversations. From the beginning, as it continues to grow, it is guided by passion for delighting customers by serving fresh, delicious food right in front of customer.

The performance report* for FY 2018-19 was presented at the management committee meeting as follows:

Particulars	**Budget**	**Actual**	**Variance**
Sales / Production (no. of burgers)	2,00,000	1,65,000	(35,000)
Sales (£)	10,50,000	8,46,450	(2,03,550)
Less: Variable Costs (£)	6,33,000	5,37,075	95,925
Less: Fixed Costs (£)	1,57,500	1,65,000	(7,500)
Profit	2,59,500	1,44,375	(1,15,125)

* *burger segment*

The Management Accountant of FF believed that the size of the fast-food market deriving the budget number of burgers to be sold is over-estimated. He has computed the value of the sales volume contribution planning variance to be 26,062.50 adverse.

Further, the report also included customer's feedback and the majority of comments were regarding delay in service time. One of feedback was as follows:

"I ordered two burgers at 2:10 pm. After half an hour (30 minutes) of waiting I called the waiter and asked him what happened? he told me that he will check with kitchen. I got the order after 45 minutes of waiting, this cafe is not good in delivery time"

The budgeted data shown in the table is based on the assumption that total market size would be 4,00,000 units.

Required

(i) PREPARE a reconciliation statement of budgeted profit to actual profit through marginal costing approach in as much detail as possible.

(ii) EXPLAIN the implications of the reconciliation statement.

(iii) Management is worried about customer's feedback. ADVISE measures to improve delivery service time.

Transfer Pricing

5. A manufacturer has two divisions, Division A and Division B. Division B produces components that are used by both Division A as well as external customers. Division A gets its entire requirement for the component from Division B.

The annual production capacity of Division B is 100,000 units. The division operates at full capacity, with no inventory at the beginning and end of the year. It sells its components to external customers at ₹4,000 per unit. Variable cost of production for the component is ₹2,750. Internally, it transfers it components to Division A factoring any opportunity cost in the form of lost sales. Total sales of Division B were ₹36 crores, of which sales to external customers was ₹20 crores.

As per company policy, demand from Division A has priority over external customers. This year, there was an additional demand from external customers for 18,000 components. However, since Division B operated at full capacity, this demand was not catered to.

Required

(i) ANALYZE the Sales in terms of ₹ and units made by Division B to both external and internal customers.

(ii) RECOMMEND the transfer pricing range that would promote goal congruence between Divisions A and B.

(iii) DISCUSS the effect of changes in external demand on the transfer price for the company, assuming the current policy continues.

Cost of Quality

6. **H Automobile Group** is among top 20 business houses in India. It has been founded in the year 1930, at the height of India's movement for independence from the British, the group has an illustrious history. H's footprint stretches over a wide range of industries, spanning automobiles (two wheelers manufacturer and three wheelers manufacturer). H's headquarter is located at Hyderabad. Bike Production is one of segment of H Group. Management of H wants to analyse the following actual information for the April:

Cost Data

Customer Complaints Centre Cost	35 per hr.
Equipment Testing Cost	18 per hr.
Warranty Repair Cost	1,560 per bike
Manufacturing Rework Cost	228 per bike

Volume and Activity Data

Bikes Requiring Manufacturing Rework	3,200 bikes
Bikes Requiring Warranty Repair	2,600 bikes
Production Line Equipment Testing Time	1,600 hrs.
Customer Complaints Centre Time	2,000 hrs.

Additional Information

Due to the quality issues in the month, the bike production line experienced unproductive 'down time' which cost ₹ 7,70,000. H carried out a quality review of its existing suppliers to enhance quality levels during the month at a cost of ₹1,25,000.

Required

(i) PREPARE a statement showing 'Total Quality Costs'.

(ii) ADVISE any TWO measures to reduce the non- conformance cost.

Special Order Decision

Fire Extinguisher Supplier

7. **N2 Co.** is the manufacturer and supplier of firefighting and safety equipment for industrial use and follows the international quality standards and uses the high grade raw material. It is a

fast-growing brand that protects millions of people across the India, every single day. N2 has been offered a bid on a prospective export contract for 20,000 commercial fire extinguishers with following specification from USA buyer and the delivery terms is FOB.

"two-gallon cylinder holding 10 pounds of multi-purpose dry chemical at 380 PSI"

N2 is exporting first time. The price computation per fire extinguisher is as follows:

	₹	₹
Direct Material		
Circle Part Cost	620	
Necking Part	30	
Bottom Part	50	
Fire Extinguisher Powder	590	
Heat Process	50	
Nozzle	60	
Meter	20	
Pipe	50	
Nitrogen	30	1,500
Direct Labor (2 hrs. × ₹40)		80
Leakage Testing		50
Variable Overheads (including packing)		214
Export Clearance Charges on FOB term		36
Fixed Overhead		100
Total		1,980
Add: Markup @ 10%		198
Price		2,178
USD to INR		67
Price in USD		**32.51**

After quotation of USD 32.51, the buyer is negotiating the price and ready to pay only USD 28.50.

Required

ADVISE whether it is worth accepting at USD 28.50 considering other factors.

Life Cycle Costing

8. **Mould & Dies (M&D)** was established in 1980 and has enormous wealth of experience in the mould manufacturing industry and serves wide range of plastic moulds all over nation. Over the past decade, M&D has developed the reputation for quality products & services for customer focused approach. It deals in injection moulds, blow moulds, die sets, moulds base etc.

With a state-of-the-art infrastructure facility, M&D is able to meet the qualitative and quantitative demands of its clients. Its vision & mission is to provide high class manufactured products by using best quality raw materials.

M&D has developed a new product "M" which is about to be launched into the market and anticipates to sell 80,000 of these units at a sales price of ₹300 over the product's life cycle of four years. Data pertaining to product "M" are as follows:

Costs of Design and Development of Molds, Dies, and Other Tools	₹8,25,000
Manufacturing Costs	₹125 per unit
Selling Costs	₹12,500 per year + ₹100 per unit
Administration Costs	₹50,000 per year
Warranty Expenses	5 Replacement Parts per 25 units at ₹10 per part; 1 Visit per 500 units (Cost ₹500 per visit)

Required

(i) COMPUTE the product "M"'s 'Life Cycle Cost'.

(ii) SUGGEST two ways to maximize "M''s lifecycle return.

Note: Ignore time value of money

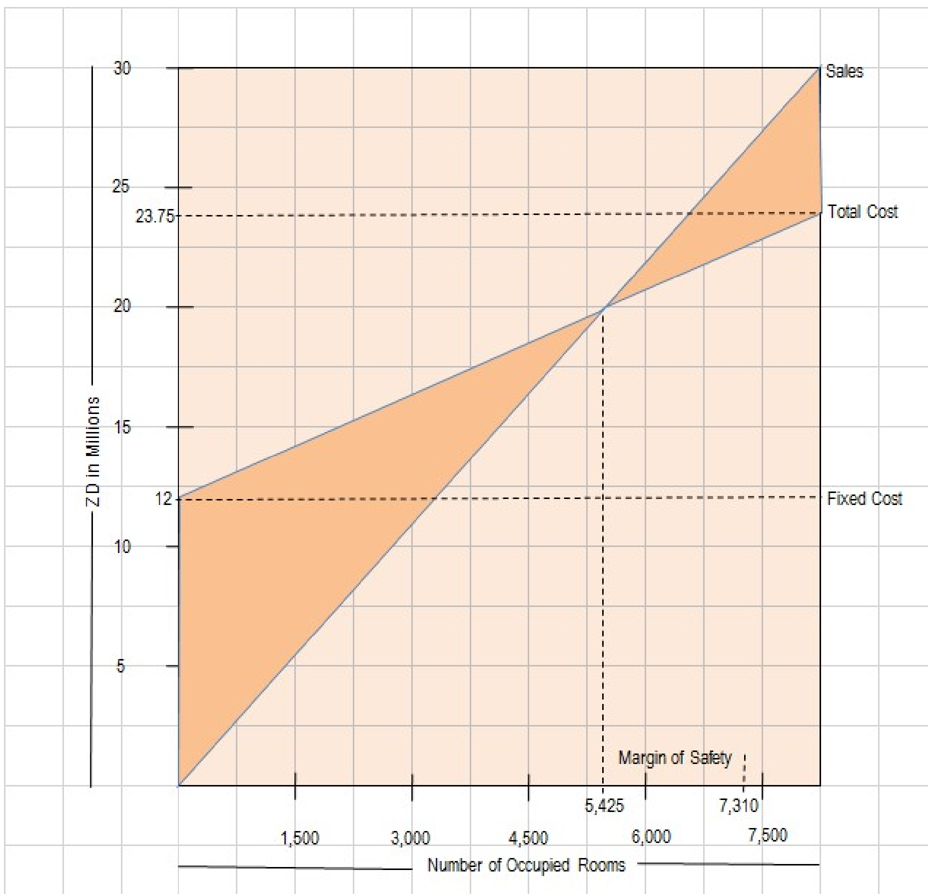
CVP Analysis

9. **Hotel Nikko**, Zeeland, an affordable leisure hotel resort is an ideal retreat to escape, unwind and enjoy peace of mind. Set amid expansive tropical greenery in the enclave of Zeeland, Hotel Nikko is designed for pleasure, where services reign supreme and Italian-style architecture of its 25 classic rooms harmonize with nature. Hotel Nikko, Zeeland is a beachfront resort that features a good choice of swim-up pool bar, gym, and variety of restaurants. A wide array of water sport activities like surfing, sailing, jet skiing etc. are available from beach operators at walking distance. The hotel is synonymous with enjoyment and value for money, with a large choice of very attractive "All Inclusive" packages.

Nikko charges guests ZD 2,700 per room per night, irrespective of single or double occupancy. The variable cost is ZD 900 per occupied room per night. The Nikko is available throughout 365 days a year and has a 75% budgeted occupancy rate. Fixed costs are budgeted at ZD 9 million and are incurred evenly during the year.

During the second quarter (Q2) of the year, usually the room occupancy rates remains substantially below the levels expected at other quarters of the year. Nikko is expecting to sell 900 occupied room nights during Q2. Management is considering strategy to improve profitability, including closing the Nikko for the duration of Q2 or adopting one possible option as follows –

There is scope to extend the Nikko by creating enough space to run a Rustic Chic, Italian Style restaurant to serve its guests. The annual revenues, costs and sales volumes for the combined operations are given in the following graph–



Note

Zeeland's home currency is the ZD.

Required

ANALYZE the profit improvement plan.

Balanced Scorecard

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

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

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

Key Performance Indicator	Goal	Actual
Average replacement time (number of days)	2	1.5
Gross margin growth percentage	15%	16%
Number of customers	15,000	15,600
Number of plant accidents	0	2
Percentage of repeat customers	83%	81%
Core product line profit as a percentage of core-product line sales	5%	4.4%
Employee turnover rate (number of employees leaving/ Average number of total employees)	2%	3%
Employees satisfaction rating (1-5, with 1 being the most satisfied)	1	1.2

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

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

Required

(i) PREPARE a balanced scorecard report using the above-mentioned format. Place objective under the appropriate perspective heading in the report. Select a KPI from the list of KPIs that would be appropriate to measure progress towards each objective.

(ii) B. Steels desires to integrate sustainability and corporate social responsibility related KPIs in their balance scorecard to adhere vision and values. ADVISE B. Steels, using TBL framework.

SUGGESTED ANSWERS/HINTS

1. (i) Modern organizations have a moral duty of care to a *wider range of stakeholders* not just its owners / investors. In this case, it owes a duty of care to anybody who consumes its products. The presence of peanuts or peanut oil makes it a potential "health hazard" to some consumers. Food safety is a fiduciary duty that Nutty Bites owes to the society. Corporate Social Responsibility (CSR) is the duty an organization has towards a wider community.

(ii) Addressing this ethical issue will help Nutty Bites to become a *morally responsible organization*. The long- term benefits to its business could be as follows:

(a) Avoid bad publicity that could potentially damage its *reputation* and *brand image*.

(b) Avoid potential *legal action* for tort, committing a civil wrong.

(c) Operating environment within the business is more ethical, giving a *sense of well-being* to its employees.

(iii) Following could be some of the responses that Nutty Bites could take to address the issue:

(a) A *clear warning in the ingredients box* that the factory uses peanuts while manufacturing some of its products. This should be included even in products that do not contain peanuts, to avoid any harm due to risk of cross-contamination. Customers who suffer this allergy, would then be aware of the potential risk of consuming products of Nutty Bites. Protection from potential lawsuits counters any loss of business for Nutty Bites.

(b) Segregate areas to have *separate processing lines* for products with peanuts / peanut oil and those without it. If possible, have segregated staff for the two production lines in order to avoid the risk of cross-contamination. If this is not possible, staff have to be well trained on the risks of cross-contamination. Gloves need to be provided while handling material during production of food products. This should be changed each time staff handle production changes from "peanut variety" to the "non-peanut variety".

(c) Equipment should be *thoroughly cleaned* while switching production from one variety to another. *Fewer changeovers* in the production cycle, that is producing products in larger batches, reduces the number of switches during production of different varieties of food products.

(d) *Storage of peanut material* should be well segregated *and* monitored to avoid contamination.

(e) If Nutty Bites has the resources, it could *invest in pharma companies* that are finding a medical solution to this problem. The food industry could benefit from research and development of treatments to address this life-threatening allergy. A break-through would address a societal problem, while also having a positive impact for growth of Nutty Bites.

(iv) Risk of product safety is an important issue that needs constant review. Review would be of the production process, storage, material handling as well as ingredient of purchased raw materials. The benefit of constant review is that Nutty Bites can *immediately identify danger of contamination*. For example, is a supplier of raw material changes the production of the ingredients to include peanut / peanut oil, then Nutty Bites can be immediately aware of the change due to its review process. In case of any future litigation, Nutty Bites could defend itself by proving that it had a robust review process in place.

On the other hand, constant review requires *time* and *money*, with an ever-present possibility of contamination. It is not feasible to ensure complete safety. Reviewers / quality inspectors could become negligent once the process is well established. This could lead to instances of contamination, even with a review process in place.

To conclude, Nutty Bites is morally responsible to *spread awareness* that some of its products may contain allergy causing peanuts / peanut oil. It should streamline its storage and production process to avoid risk of cross-contamination.

2. (i) The five Primary Activities of Michael Porter's Value Chain Model

Inbound Logistics

Activities related to *receiving*, *handling of materials* from the supplier and their *storage* until further use later in operations. In the case of Staywell Hotels, materials would include food service received from the vendor. This needs to be stored and maintained properly until the item is ordered by the guest. Similarly, the vendor delivering freshly laundered crockery, bedding and laundry would be materials that need to be stored until their use to serve the guests. These are inbound logistics for the hotel.

Operations

Activities related to *converting inputs* into production of output or service. In the case of Staywell Hotels, operations would include maintenance of hotel premises including guest rooms, conference rooms and common area. Activities related to ensuring cleanliness and safety of rooms, working order of facilities offered like TV and internet service, coffee machines, shuttle service are part of hotels operations.

Outbound Logistics

Storage and *movement* of the *end product* from the production line to the customer. In the case of Staywell Hotels, it includes activities such as maintaining "non-smoking" rooms as such, so that when the customer finally uses it comes across as a "non-smoking" room. Likewise, the food should be prepared in a professional manner, stored in such a way that it ensures customer satisfaction and safety. Therefore, the review of food items to remove the ones past expiry would be part of Outbound Logistics. Therefore, any activity relating to making sure that the *guests get what they have ordered for*, would be part of outbound logistics.

Marketing and Sales

The activities related to *communicating*, *selling*, and *delivering* the product or service to the customer. In the case of Staywell Hotels, advertising its properties to the cost and time conscious traveller would be a marketing activity. Free shuttle service is a promotional activity to attract guests. Any agreement with airline companies to accommodate guests would also form part of this activity.

Service

All types of service such as *after sale service*, *handling customer complaints*, *customer support*, *training* etc. In the case of Staywell, service is one of the most *important activities* in their value chain model. Good service ensures happy guests. Therefore, all activities from front-desk, room service, catering, repair services, shuttle service would be included here. All employees have to trained to *handle needs of the guests* in an effective and efficient manner.

(ii) Product Life-cycle Stage of Staywell Hotels

"Budget Accommodation" to the cost and time conscious traveller is the *current product offering* of Staywell Hotels. Starting out with a single establishment, Staywell Hotels ploughed in profits to expand its business offering to other cities as well. The product has been *well established* in the past decade. *Competition is intense* indicating similar offering by rivals. Price wars have put pressure on profit margins. Staywell Hotels plans to continue in this segment due to its *sizeable market share*. This information indicates that Staywell Hotels is in the *maturity stage* of its product lifecycle. It has a well-established product, with a sizeable market share at the same time it is now facing competition. Business has hit a plateau. Hence, Staywell Hotels needs to improve its product offering to beat competition. The management's plans to foray into luxury resort business is an indication of its future plans to sustain business.

(iii) Risks of Outsourcing Cleaning and Food Service under the Luxury Resort Model

Staywell Hotels is a budget accommodation provider to the cost and time conscious traveller. Primary feature of this model is *"value for money"*. To remain profitable the cleaning and food service has been outsourced, which enables Staywell Hotels to keep the *costs of operation low*. There have been instances of *dis-satisfaction* among guests as regards quality of cleaning and food service. However, since the turnover of guests is quick due to *high volume* and *short stay* period, it has *not negatively impacted* business.

In the luxury resort business, the target guests are travellers on leisure. The primary feature of this model would be *"good quality of service"*. Maintaining cleanliness of premises and food service are *critical activities* in the operation of luxury hotels. Therefore, *customer satisfaction* on these metrics is *paramount* to sustain and grow business. With the ability to post reviews online on booking portals, any negative review (whether justified or not) can reach very easily to a large number of potential guests. This can negatively impact future business. Hence, Staywell Hotels has to ensure that the *quality of service* that it provides in terms of cleanliness and food should meet and beat the *guest's expectation*.

Outsourcing these services to *well established vendors* is advantageous since the focus can remain on improving guest experience. It may also be *cost advantageous* in many cases. However, there a number of risks in this model. Detailed ***service level agreements*** need to be drawn up to ensure that the required *quality of service* is being provided. Staywell Hotels should be able to monitor the performance of these vendors. In cases of non-delivery of the required level of service, the agreement should provide for means of redressal. This could vary from compensation for any loss in business to immediate termination of service. Staywell Hotels should ensure that it can easily and economically switch service providers if required. For this it has to identify alternate vendors who can provide the same level of service as the current ones. The other risk in outsourcing could be of instances where well performing *vendors could go bankrupt* and shut shop. In such cases, Staywell Hotel's operations could be immediately impacted since such services can no longer be availed from these vendors. Again, list of *alternate service providers* is a necessary back-up that the hotel should have.

Alternatively, since these are very critical activities to business operations, Staywell Hotels may choose to have complete control over them. This can be achieved by having *in-house departments* that cater to cleanliness and food service. *Control over factors* such as input material used, the performance of service, equipment used, training of staff and other essential activities can ensure that the *required service quality can be achieved*. Better service *enhances guest experience*. Compared to outsourcing, this might be a *costlier option*. <u>However, since the guests are ready to pay a premium for service quality, within reasonable limits cost need not be a primary concern for Staywell Hotels for this business model.</u>

3. (i) Work can be outsourced to locations to countries on the other side of the globe, in order to achieve *low cost advantage*. A company *may not be directly responsible* for faulty practices of its suppliers. However, modern organizations have a *moral duty* of care to a *wider range of stakeholders* who may not directly be related to the company. In this case, it owes a duty of care towards employees hired by factories within its *supply chain*. The issue it is dealing with relates to exploitation of child workers by factories, perpetrated by sub-contracting work to third party workers. While Sprinter sportswear has *not done anything illegal*, it owes *moral responsibility* towards these children. Children have a right to education, because of which child labor is illegal in most countries. Since children are employed directly on account of the work that has been outsourced, Sprinter should attempt to address this issue. Also, any negative news about how its products are made, could *impact its business*.

(ii) Sprinter should aim to make its products responsibly. Some actions it can take are:

- Sprinter can develop a *Code of Conduct* that details the acceptable standards of conducting business. These standards could relate to hiring practices, of which it can specify that workers should be above a particular age to be employed for manufacturing a product. Others could relate to workplace environment, safety, and environment sustainability. Sprinter should *insist that suppliers implement these Codes of Conduct* along with other complying with laws. It should insist that the supplier be open to *periodic inspection* by Sprinter to ensure compliance with standards as per its Code.

- Sprinter can set up an *audit team* that regularly audits factories on the pre-sourcing and follow-up stages. Sprinter should do business only with those factories are complying with its standards. Any offenders to the Code of Conduct in the follow-up stages, should be appropriately be liable to *penalty* or *termination of contract* for serious offenses.

- Sprinter can *list on its website* location wise suppliers from whom it procures its products. It can even give information about products made by each of its suppliers, average age, worker diversity etc. This will enable watch groups to know who the suppliers are and warn the company if there are any labor issues within these factories.

4. (i) Statement of Reconciliation - Budgeted Vs Actual Profit

Particulars	£
Budgeted Profit	2,59,500
Less: Sales Volume Contribution - Planning Variance (Adverse)	26,062.50
Less: Sales Volume Contribution - Operational Variance (Adverse)	46,912.50
Less: Sales Price Variance (Adverse)	19,800
Less: Variable Cost Variance (Adverse)	14,850
Less: Fixed Cost Variance (Adverse)	7,500
Actual Profit	1,44,375

Workings

Basic Workings

Budgeted Market Share (in %) = $\frac{2,00,000\text{units}}{4,00,000\text{units}}$ = 50%

Budgeted Contribution = £10,50,000 – £6,33,000 = £4,17,000

Average Budgeted Contribution (*per unit)*

= $\frac{£4,17,000}{2,00,000}$ = £2.085

Volume Contribution Planning = Budgeted Market Share % × (Actual Industry Sales Quantity *in units* – Budgeted Industry Sales Quantity *in units*) × (Average Budgeted Contribution *per unit*)

⇒ £26,062.50 (A) = 50% × (Actual Industry Sales Quantity *in units* – 4,00,000 units) × £2.085

⇒ Actual Industry Sales Quantity = 3,75,000 units

Actual Market Share (in %) = $\frac{1,65,000\text{units}}{3,75,000\text{units}}$ = 44%

Standard Sales Price *per unit* = $\frac{£10,50,000}{2,00,000}$ = £5.25

Actual Sales Price *per unit* = $\frac{£8,46,450}{1,65,000}$ = £5.13

Standard Variable Cost *per unit* = $\frac{£6,33,000}{2,00,000}$ = £3.165

Actual Variable Cost *per unit* = $\frac{£5,37,075}{1,65,000}$ = £3.255

CALCULATION OF VARIANCES

Sales Variances

Volume Contribution Operational	=	(Actual Market Share % – Budgeted Market Share %) × (Actual Industry Sales Quantity *in units*) × (Average Budgeted Contribution *per unit*)
	=	(44% – 50 %) × 3,75,000 units × £2.085
	=	£46,912.50 (A)
Price	=	Actual Sales – Standard Sales
	=	Actual Sales Quantity × (Actual Price – Standard Price)
	=	1,65,000 units × (£5.13 – £5.25)
	=	£19,800 (A)

Variable Cost Variances

Cost	=	Standard Cost for Production – Actual Cost
	=	Actual Production × (Standard Cost *per unit* – Actual Cost *per unit*)
	=	1,65,000 units × (£3.165 – £3.255)
	=	£14,850 (A)

Fixed Cost Variances

Expenditure	=	Budgeted Fixed Cost – Actual Fixed Cost
	=	£1,57,500 – £1,65,000
	=	£7,500 (A)

(ii) Implications of Reconciliation Statement

In the revised statement, the sales volume variance has been detailed by the way of two variances i.e. planning and operational variances. This kind of detailed information assists the company to check, which kind of variances are under the management control and which are not. FF has adverse volume contribution planning variance and the reason of could be the environmental / market changes, that was not anticipated at the time of budget preparation, so they are not under management control and hence, no one is responsible for this. On the other hand, the sales volume contribution operational variance was under control of the managers and they should be held responsible for the same. The reason of adverse sales volume contribution operational variance could be unsuccessful direct selling efforts/marketing efforts. FF has adverse sales price variance as well. It indicates that the burgers were sold for lower price than standard. The reason of this could be unforeseen market competitive price, tapping new market etc.

Further, revised reconciliation statement delivers little information about the variable cost and fixed cost variances. They both are adverse. Fixed cost consists of many items such as salaries, annual maintenance cost, rent and insurance etc. Often fixed cost items are not affected in short run in response to change in the level of activity, but they might change in response to other factors such as price. This may cause increase expenditure on fixed overheads. A meaningful analysis of fixed cost variance requires a line to line comparison of budgeted cost with actual cost.

In case of FF, the variable cost may be made up of large individual different items such as vegetables, gas, indirect labor, regular maintenance cost etc. Control of variable cost also requires line by line analysis for each individual item. The adverse variable cost variance simply reveals that FF incurred more on variable cost than expected. However, it is necessary to take into consideration the causes of this adverse variance which is beyond the control of the management, for instance, the unusual price hike in vegetables in case of unseasonal rainfall.

(iii) Measures to Improve Fast Food Delivery Service Time

Customers expect that their food order to be delivered quickly. From customer's feedback in the question, it is evident that FF has a problem in food delivery, due to which, customers go unsatisfied. The reason of late delivery could be non-availability of raw material on time or employees not working properly etc. The reason of employees not working properly could be job dissatisfaction which may be due to improper working conditions, low salary, or no reward for overtime etc.

In order to reduce delivery time, raw material should be made available in stock based on daily requirement. FF may follow quantitative approach to inventory problems, which lays down clear guidelines that when to re-order or alert the management in exceptional situations.

In addition, FF must also address the issues related to employee and involve them in a loop. FF could improve the employee satisfaction with proper working conditions, better pay, training, and growth opportunities.

Moreover, it is important that customers should be informed about approximate delivery time since this will reduce customer's anxiety and will proactively reduce any complaints over long waits for delivery of food. If unexpected delays occur, it is important to communicate with customers, apologies for the delay and inform them about the new approximate delivery time along with valid reason.

In addition to this, FF can also introduce pagers or install electronic board displaying ticket number or self- serve kiosk allowing customers to roam around or order in advance so that they do not have long waiting time.

5. (i) Sales Analysis of Division B

Total annual capacity and actual production of Division B is 100,000 units of components. Zero inventory implies that sales for the year was also 100,000 units of components. Sales to external customers was ₹20 crores, at ₹4,000 per unit. Therefore, units sold to external customers would be 50,000 units this year (₹20 crores sales / ₹4,000 per unit sale price).

Therefore, internal sales can be derived to be 50,000 units for the year (annual sales 100,000 units less external sales 50,000 units). For the year, value of sales made to Division A is ₹16 crore (Division B's total sales of ₹36 crore less external sales of ₹20 crores).

Had there been no extra demand, opportunity cost for Division B would have been nil. Therefore, transfer price would only be the variable cost of ₹2,750 per unit of component, However, given in the problem, that there was excess demand for 18,000 units of components from external customers, that could not be met since Division B had to give priority to internal demand. Had these sales been made Division B would have earned ₹1,250 per unit contribution (Sale price ₹4,000 per unit less variable cost ₹2,750 per unit). This lost contribution of ₹1,250 per unit is the opportunity cost per unit for Division B. Due to company's policy of giving priority to internal demand, Division B lost a profit of ₹2.25 crore during the year. (18,000 units × contribution of ₹1,250 per unit).

Therefore, internal sales comprises of two parts:

32,000 units of components transferred at variable cost of ₹2,750. This amounts to ₹8.8 crores.

18,000 units of components transferred factoring any opportunity cost = variable cost + contribution per unit = external sale price = ₹4,000 per unit. This amounts to ₹7.2 crores.

Therefore, internal sales = ₹8.8 crores + ₹7.2 crores = ₹16 crores.

Summarizing

External sales are 50,000 units amounting to ₹20 crores annual sales value. Internal sales are 50,000 units amounting to ₹16 crores annual sales value. Transfer price for 32,000 units is at variable cost of ₹2,750 per unit while for 18,000 units is at external sales price of ₹4,000 per unit.

(ii) Transfer Price Range for Divisions A and B

Division A procures its entire demand of 50,000 units from Division B. Out of this, 18,000 units at market price of ₹4,000 per unit while 32,000 units are procured at a lower rate of ₹2,750 per unit. Had Division A procured 32,000 units from the market, the additional cost of procurement would be ₹4 crores {(External price of ₹4,000 per unit *less* internal transfer price at variable cost of ₹2,750 per unit) ×32,000 units}. Only Division A currently enjoys this benefit of lower procurement cost. Financials of Division B show no profit from such internal transfers. This may skew the performance assessment of the divisions, if it is based primarily on financial metrics of each division. In order, promote goal congruence, some portion of this benefit can be shared with Division B.

Division B will at the minimum want to recover its variable cost of ₹2,750 per unit, while Division A will be ready to pay only up to external market price of ₹4,000 per unit. Therefore, transfer price range can be set between ₹2,750 - ₹4,000 per unit. Division A enjoys lower procurement rate while Division B financial reflect some benefit of transferring components internally to Division A.

(iii) Impact of External Demand on Transfer Price

As per the company's transfer pricing policy, Division B gives priority to demand from Division A. The division has a production capacity of 100,000 units annually. If there is *no external market* for Division B's components, then transfer price for the entire internal transfer would be the variable cost of ₹2,750 per unit plus portion of the fixed cost (if any). This is the minimum cost that Division B would like to recover from Division A.

When there is an *external market*, transfer price would depend on whether Division B had to incur any opportunity in the form of lost sales. When total demand (internal and external) is within production capacity of 100,000 units, the entire demand can be met. There would be *no lost sales* for Division B, no opportunity cost. Therefore, transfer price for the entire internal transfer would be the variable cost of ₹2,750 per unit. This is the minimum cost that Division B would like to recover from Division A.

When there is an *external market*, such that total demand (internal and external) is more than production capacity of 100,000 units, due to priority given to internal transfer, some portion of the external demand might not be met. This would be *lost sales* for Division B, opportunity cost would be the contribution lost from such sales at ₹1,250 per unit. This opportunity cost would be passed onto Division A. As explained in part (ii) above, transfer price range will be from ₹2,750 - ₹4,000 per unit. More lost sales for Division B would keep the average transfer price higher towards ₹4,000 per unit. Lesser lost sales for Division B would keep the average transfer price towards the lower bound of ₹2,750 per unit. Therefore, the proportion of external demand that could not be catered to, would determine the average transfer price. Higher the demand from external customers would drive up the average transfer price within the company.

6. (i) Statement Showing 'Total Quality Costs'

Particulars of Costs	₹
Prevention Costs	
Supplier Review	1,25,000
Appraisal Costs	
Equipment Testing (₹18 × 1,600 hrs.)	28,800
Internal Failure Costs	
Down Time	7,70,000
Manufacturing Rework (₹228 × 3,200 bikes)	7,29,600
External Failure Costs	
Customer Complaints (₹35 × 2,000 hrs.)	70,000
Warranty Repair (₹1,560 × 2,600 bikes)	40,56,000
Total Quality Costs	**57,79,400**

(ii) The reporting of quality costs highlights the *cost of quality activities* at H. 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) and the drivers of a reduction in the overall spending on quality. 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. Following two measures can be used 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 breakdowns and delays in manufacturing processes. It involves identifying machines in every division (including planning, manufacturing, maintenance) and then planning & executing a maintenance programme covering their entire useful life.

In this scenario, 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 equipment 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 the 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 that company maintain this quality standards in all aspects of business by ensuring that things are done right the first time so that defects and waste are eliminated from operation.

It appears that H is not a TQM company at present due to *huge disparity between conformance costs and non-conformance costs*. In order to make H to be successful, all staff at H must be engaged in the improvement process and share in the continuous improvement ethos. In order to establish a reputation as a high-quality bike manufacturer H must ensure staff are focused on quality *and* attitudes changed toward the importance of conformance activities, for instance, H can conduct third party inspection of raw material at supplier's workplace leading to maintenances of quality standards.

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

7. Workings

Statement Showing Benefit from Prospective Export Contract

	₹
Direct Material	1,500
Direct Labor (2 hrs. × ₹40)	80
Leakage Testing	50
Variable Overheads (including packing)	214
Export Clearance Charges on FOB term	36
Total Relevant Cost	1,880
USD to INR	₹67
Relevant Cost	$28.06
Price Offered by Customer	$28.50
Benefit *per extinguisher*	$0.44
No. of Extinguishers	20,000
Total Benefit	$8,800

Advise

From financial perspective, it will be profitable for N2 to accept the contract because of gain of $8,800 (₹5,89,600) along with export incentives of drawback. Besides this, following consideration should also be taken into consideration while exporting fire extinguishers:

Statutory Compliances

Before exporting to a foreign country or even agreeing to sell to a new customer in a foreign country, N2 should be aware of foreign laws that might affect the sale. Export documentation is important as it plays a significant role in regulating the flow and movement of goods in international markets. Each country has its own prescribed statutory documents to be complied by exporters and importers. Thus, N2 should consider about the documentation and inspection compliances part of new buyer. It may include third party audit, commercial invoice and packaging list requirements, certificate requirements like- no child labour certificate, inspection certificate, reach compliance certificate etc. If any compliance requirement is not met, what will be the consequences? There may be stiff penalty has to be paid owing to non-compliance or failure to accurately comply with the export obligation.

Buyer Creditworthiness

It is necessary that before shipment the exporter to carry out its own credit check on the importer to determine creditworthiness. Thus, N2 should make a proper assessment of the creditworthiness of the foreign buyer and spend sufficient time in cross checking the credit worthiness of his counterpart to avoid any kind of unforeseen situation in future. Such information can be easily availed through contracts or through ECGC. Private agencies also provide information on paid service basis. However, this risk can be covered by asking for LC payment terms or 100% advance or opting for post shipment insurance for goods being exported.

Industry Analysis

Industry analysis involves such things as assessing the competition in the industry; the interplay of supply and demand in the industry; how the industry holds up against other industries that are emerging and providing competitions; the likely future of the industry, especially in light of technological developments; how credit works in the industry; and the exact extent of the impact that external factors have on the industry.

For N2, it is worthwhile to know the current and future demand of fire extinguisher and factors influencing the growth of global fire extinguisher market. N2 can perform industry analysis through three main ways i.e. the Competitive Forces Model (also known as Porter's 5 Forces); the broad factors analysis, also known as PEST analysis; and SWOT Analysis. It may also arrange industry report from trusted sources.

Additional Terms

Ensure that the all terms are clear and suit the business purpose. For instance, delivery terms should provide date of shipment or means of determining the date. In some circumstances, a late delivery penalty may be incurred where goods are not supplied by a specific delivery date. Therefore, N2 should evaluate whether shipment date is attainable or not. If the target shipment date could not be met, what will be the charges? Further, N2 must also check whether the foreign bank charges are subject to beneficiary account. If yes, then the same must be considered in the quotation.

Overall, N2 should accept the proposed contract only after due and careful consideration of above factors.

8. (i) Statement Showing "M's Life Cycle Cost (80,000 units)"

Particulars	Amount (₹)
Costs of Design and Development of Molds, Dies, and Other Tools	8,25,000
Manufacturing Costs (₹125 × 80,000 units)	1,00,00,000
Selling Costs (₹100 × 80,000 units + ₹12,500 × 4)	80,50,000
Administration Costs (₹50,000 × 4)	2,00,000
Warranty (80,000 units / 25 units × 5 parts × ₹10) (80,000 units / 500 units × 1 visit × ₹500)	 1,60,000 80,000
Total Cost	1,93,15,000

(ii) Following ways are suggested to maximize "M" lifecycle return:

R&D Costs

Often significant part of cost is incurred at the R&D phase of new product, hence M&D should carefully plan and design its new product "M" as it will determine the number of parts, production process to be used etc. M&D can apply ***value engineering*** here. It involves improving product quality, reducing product costs, fostering innovation, eliminating unnecessary and costly design elements, ensuring efficient investment in product, and developing implementation procedures. Value engineering is most successful when it is performed early in product development stage. A value engineering study should be performed within the first 25-30% of the design effort prior to selecting the final design alternative. Here, it is also important that R&D team should work as a part of cross functional team i.e. (participate in a group of people from different functional areas), to minimise lifecycle cost and the production cycle time in new development.

Speed up the Product Launch

In cut throat competitions, it is important for M&D to get new product 'M' launch into the market as soon as possible since this will give "M" a ***long stay*** in the market place *without competition* in the market. Competitor always try to launch a rival product as quickly as possible in order to gain 'competitive edge'. M&D may lose overall profitability if it delays in launching of Product 'M'. It is usually worthwhile incurring extra costs to keep the launch on schedule or to speed up the launch.

9. The Present Profit of Hotel Nikko

Total Room Days = 25 Rooms × 365 days × 75% = 6,844

Profit = Total Contribution – Fixed Cost

= 6, 844 room days × (ZD 2,700 – ZD 900) - ZD 90,00,000

= ZD 33,19,200

If Nikko is Shut Down during Q2

Loss of Contribution {900 Room Days × (ZD 2,700 - ZD900)} = ZD 16,20,000

Nikko should not close its hotel during Q2. The fixed costs will still be incurred and hotel closure would result in lost contribution of ZD16,20,000. This in turn would decrease annual profits by ZD16,20,000. In addition, Nikko could lose guests at other quarters of the year, particularly their regular business customers, who may perceive the Nikko as being *non-reliable*.

Proposal of Opening an Italian Restaurant

Opening a restaurant will increase the fixed costs of the Nikko from ZD 9 million p.a. to ZD 12 million p.a. Thus, annual increment of ZD 3 million.

Average Revenue per occupied room will rise from ZD 2,700 to ZD 3,636.36... (ZD 30 Million / 8,250 rooms) because increasing guest expenditure in Italian restaurant.

The total cost predicted at a level of 8,250 occupied rooms is ZD 23.75 million which means the variable costs must be ZD 11.75 million (ZD 23.75 million – ZD 12 million fixed costs). This is a variable cost per occupied room of ZD 1,424.24… which is an increase of ZD 524.24…

Consequently, the breakeven point has gone up from 5,000 to 5,425 (as shown in the diagram) occupied rooms so the Nikko is required to sell more room nights to cover costs. However, budgeted occupancy is now 7,310 occupied room nights which is 80.11% occupancy (7,310/ 9,125). This provides a margin of safety of 1,885 occupied room nights or 25.79%. At 7,310 occupied room nights, Nikko's budgeted profit would be ZD 41,70,597 {7,310 × (ZD 3,636.36 – ZD 1,424.24) – 12 million} which is more than present budgeted profit by ZD 8,51,397. So, it is better for Nikko to go for opening an Italian Restaurant.

10. (i)

B. Steels
Balanced Scorecard Report
For the year ended March 31, 2019

Perspective	Objective	KPI	Goal	Actual	Goal Achieved (Yes or No)
Financial	Increase Gross Margin	Gross margin growth percentage	15%	16%	Yes
	Increase Profitability of Core Product Line	Core product line profit as a percentage of core product line sales	5%	4.4%	No
Customer	Increase number of customers	Number of Customers	15,000	15,600	Yes
	Increase customer retention	Percentage of repeat customers	83%	81%	No
Internal Business Process	Improve post sales service	Average replacement time (number of days)	2.0	1.5	Yes
	Increase plant safety	Number of plant accidents	0	2	No
Learning and Growth	Improve employee job satisfaction	Employees satisfaction rating *(1-5, with 1 being the most satisfied)*	1	1.2	No
	Improve employee morale	Employee turnover rate *(Number of employees leaving/ Average number of total employees)*	2%	3%	No

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

Diminishing non-renewable resources have forced businesses to focus on *sustainable manufacturing*. This term refers to managing manufacturing processes such that they *minimize any negative impact on the environment* by conserving energy and natural resources. In many instances, improved operational efficiency not only reduces waste (thereby costs) but also improves product safety, it strengthens the *brand's reputation* and builds *public's trust* about the company. As a long- term strategy, this improves *business viability* and provides a *competitive edge* to the company. This concept is the "**Planet Bottom Line**" within the Triple Bottom Line framework. Metrics on the following aspects may be investigated to find out the *environment impact* of business operations:

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

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

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

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