

## PAPER – 5: STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

### \*\*\* CASE SCENARIO\*\*\*

#### Gain Sharing Arrangements

#### Healthcare Industry



1. **Raya Health Care** Limited is a leading healthcare service provider in Mumbai, it has approximately 450 potential beds, it provides diagnostic and day care speciality facilities also. In diagnostic centres they are using traditional devices for CT Scan and MRI which are not enough as per demand. Patients waited more than weeks for CT and MRI scans, this problem can cause delay in diagnosing illness; waste of time and other resources; not just in radiology but throughout the healthcare system.

Raya has planned to outsource CT scan and MRI services to Livlife, which has world-class international chain of diagnostic centre. Livlife promise to provide radiologist report within 24 hours. However, finance manager of Raya doubt that it will not be a profitable arrangement. For the satisfaction of Raya, Livlife has entered an agreement to provide its services to Raya with no guarantee of receiving payment. Raya agrees to the following conditions:

- Cost savings generated in first year, the same will be retained by Livlife.
- Cost savings generated in second and third year will be shared between Raya and Livlife at a ratio of 30%:70%.
- Cost savings generated in the fourth year will be passed to Raya.
- Any cost savings generated by an idea proposed exclusively by Raya that does not require capital investment by Livlife will be immediately passed along to Raya.

#### ***Required***

DISCUSS the agreement between Raya and Livlife.

## Cost Management in Specific Sector

### Supermarket



2. **Fresh Bazar** was founded in 2014 as a Fresh Bazar Mart. It provides amazing place for fresh organic fruits and vegetables, after launching its operations in November 2014, it grew to about 150 stores within three years majorly in metro cities, but soon it found that it did not have the systems and infrastructure to support that expansion.

Fruits and Vegetables as a category of competitive market types, which offers these products, very low margins, “while the rental cost and other overheads are very high”. Also, staff attrition, poor locations, supply-chain issues, and infrastructure problems prompted it to shut nearly 45 stores within two years of the launch. Since then, the company has standardized its operations and increased centralization of its supply chain.

Though they provide all types of fresh organic fruits and vegetables under one roof, instead in local mandis people have to go from one place to another to buy different fruits and vegetables, still they are unable to compete with local vendors.

It also faces huge opposition from politically powerful small vendors, farmers, and middlemen. Fresh bazar had major hurdles in 2016, when it chased out state Uttar Pradesh, Jharkhand, India’s most populous region, after protest by small vendors, farmers, and intermediaries.

Mr. Kailash, manager of Fresh Bazar, purchases fruits and vegetables from wholesale mandis. Price of Fruits and Vegetables fluctuates in wholesale mandis daily basis which is directly depends on the supply of fruits and vegetables by farmers. In addition, supply also depends on transport facilities, rain, political factors etc.

Fresh Bazar sells these fruits and vegetables at the almost same price as of local vendors in local mandis. Though the quality of local vendors is not as good as Fresh Bazar but local public prefer to buy fruits and vegetables from local vendors on road sides.

Their business still requires a lot of investments, and there is no synergy to the activity of the company. Due to all these reasons, Fresh Bazar is incurring continuous losses.

Fresh Bazar wants to expand its business and wants to make money in every store that they set up, and that would be the way in which they scale up their business.

#### **Required**

ADVISE is there any scope to reduce losses and increase profitability.

## \*\*\*CASE STUDY \*\*\*

5S



3. **Gold-Star** Limited deals in manufacturing of traditional cycles. Recently apart from manufacturing old style cycles, GSL starts assembly of electronic cycles.

Since GSL didn't expand the factory area, post starting assembly of electronic cycles; hence production floor largely remains over-occupied with all sort of material, jigs, and tools; some of them are frequently useful, some are often and other are less often; even some are quite rare.

Workers usually complaint that all categories of jigs and tools are not available, tools which are available also of those belongs to those product design which are outdated (majority of such product are not further manufactured by GSL) accessible. Although floor manager is of opinion instead saying tools are not available, it can be said they are not accessible; because workers pick the tool from tool kit or tool board; but not place it back after use; hence it become difficult to locate such tool later or identify worker; with whom these may available.

On name of maintenance department, there are only two staff members, who are responsible for ensuring that every machine or equipment must be in running order and effective. Due to shortage of staff in maintenance department, requests for repairs of plant or machines are not handled within reasonable time frame and same will result in sharp deterioration of utility/ effectiveness of such plant or machine. Even in some of circumstances, replacements become/ remain only alternative.

GSL has reasonable standardise operating procedure for manufacturing of cycles business, but scenario is worse in case of assembly of electronic cycles. Since GSL is recently entered into assembly of electronic cycles, hence KPIs are not established for all factors which are part of assembly process including critical success factors.

At GSL, the attrition rate at senior management positions is quite high and no formal hierarchy tree is established, which result in drastic shifts in workplace culture (due to frequently changing role & responsibility).

Regarding safety of man and material, GSL is on front foot, taking all reasonable care; which is essential for purpose of eliminating any possibility of workplace accident. But assembly line of electronic cycles witness an incident recently, where one of model "x-2" during assembly caught fire because wires set of "x-2" come into exposure of sparking from the light point near to such assembly line. Such fire causes burn of some of other material too, which are lying near to such assembly line.

Post such incident, CEO call for meeting with all the top tier executives, majorly including production and operation manager, safety staff, maintenance staff and store manager apart from management accountant. During the meeting while production and operation manager highlights some of problem areas, management accountant quoted 5S as solutions to problems faced by GSL.

CEO asked Management Accountant to be ready with report and presentation on 5S, which can highlight the operational aspect of 5S.

**Required**

You are deputy to management accountant and asked by him to prepare a case, in form of report; in favour of implementing/ APPLYING 5S at GSL and EXPLAINING the expected benefit from implementation of 5S.

\*\*\*QUESTIONS\*\*\*

**Performance Measurement**

**Eyewear Industry**



**4. History**

In 2009, Luxo had monopoly in the eyewear market of America, but the problem with the company was that it was selling variety of eyewear, by putting a big price on it. At present, there is almost nothing that you can't buy online, but at that time there were limited things that you could order online. In 2009, **Arby Signer** Inc. launched a website to sell eyeglasses online. Selling eyewear online and competing with Luxo was a challenge for Arby. Within just 4 years Arby break the monopoly of Luxo and capture

the major market of America. People find it really convenient to buy sunglasses and glasses online and get delivery at doorstep. Following the footsteps of Luxo, Arby eliminated the middleman from the manufacturing process, launched its own optical lab to have its own manufacturing process. The range of products/services offered by Arby which make different from Luxo include easy buying process, delivery at door step, stylish glasses, customize eyewear glasses, products were sold on the site at very affordable, with a starting range of just \$95 etc.

**Mission, Vision & Objectives**

Mission	<i>“Improving people’s lives with our health care products in a socially cognizant way”</i>
Vision	<i>“To be a trusted health care partner”</i>
Objective	<i>“To offer people designer eyewear at a revolutionary price”</i>

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

**Extracts from the Balanced Scorecard**

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

Total CO <sub>2</sub> emissions (tons)	850	1,100
<b>Learning and growth</b>		
Number of employees trained to instruct retailers	1,000	1,050
Number of hours (paid for) used to support social plans	10,200	10,000
Number of trainee positions from rural areas	189	200

#### Other Information

Arby Signer has recently invested heavily in IT security to prevent fraud.

#### Required

EXAMINE the performance of The Arby Signer in 2019.

5. **Spicy** is one of the top Engineering coaching institute, it operates a chain of 157 centres across the country of Mayaland. Spicy is equipped with the team of top most faculties for preparation of JEE who are known for giving best results year after year. Students willing to join Spicy have to appear for admission test/(s). These tests help the students in understanding their potential and also provide them with the opportunity for scholarships that help them rewards academically and monetarily. In addition, Spicy provides comfortable class rooms, libraries, and ambience for overall development of students. Spicy delivers quality coaching for JEE by providing innovative ways and therefore prepares students for all challenges. Spicy prides itself on their results and level of educational service it offers to its students.

It has previously been successful in attracting students across the nation. However, in recent years, the number of enrolment of students has started to decline as a result of introduction of online platform. Several recent surveys have painted a disappointing picture for market conditions in 2020. A survey by the “My Education Outlook” over the month to 31<sup>st</sup> December found that only one in five respondents believes their business will be better off in 2020 compared with 2019.

Spicy has a policy to set the standard fees based on the location of a particular coaching centre. It also takes into account fees charged by the competitors. However, the institute’s managers have the right to offer discount to underprivileged students or scholarship to merit students, and to reduce fees structure when student hiring ratio (SHR) in their class rooms are expected to be low. The average standard fees per student, across all the centers of institute, was M\$ 15,000 in 2019, compared to M\$12,000 in 2018.

Spicy also generates revenue from the additional services available to students, such as selling books, providing test series etc. The series of periodic tests are identical to the pattern of various competitive engineering examinations and give sufficient practice to the aspirants for the same. Every test attempted by the students gives them a clear idea of their understanding of the concept, timeliness, strengths, weaknesses, and ranking amongst the aspirants across Mayaland.

**Summary from Spicy's Management Accounts**

	<b>Year ended 31 Dec. 2019 M\$'000</b>	<b>Year ended 31 Dec. 2018 M\$'000</b>
Gross Fees	1,11,980	1,05,977
<i>Less: Fees Discount/Scholarship</i>	(18,783)	(13,900)
Net Fees	93,197	92,077
<i>Add: Other Revenue (selling books, tests etc.)</i>	27,250	25,895
Total Revenue	120,447	117,972
<i>Less: Operating Costs</i>	(97,685)	(93,758)
Operating Profit	22,762	24,214

**Other Performance Information**

	<b>Year ended 31 Dec. 2019</b>	<b>Year ended 31 Dec. 2018</b>
Capital Employed	M\$ 3,77,50,000	M\$ 3,77,10,000
Average SHR	78%	73%
Average SSR (Students Satisfaction Rating)	8	9.5

At the end of the course, or at the end of the unit within the course, students are asked to complete a questionnaire rating based on a scale of 1–10 where '10' represents 'Excellent' with various aspects of course, for example, the knowledge level of faculty, the quality of support material, and the approachability of faculty to ask them questions.

Two issues are becoming increasingly frequent in the students' comments alongside the scores:

- Students complaint that faculties in the institute were full of attitude not taking the doubts of students, instead of encouraging students to solve their doubts in the class, they insulted the students who raise their doubt during class. So, their standard of education has not been as good as in previous sessions.
- Students in classes need special individual attention, there is need of smart classes, doubt solving sessions etc. to improve the result of students.

Spicy had planned to start a remedial programme for average students for all the centres at the beginning of 2018. However, this programme has been put on hold to reduce expenditure.

**Required**

ANALYZE Spicy's performance for the year ended 31 December 2019.

### Outsourcing Decision

6. **Mount Sports Manufacturing Facilities** (MSMF) deals in manufacturing of sports articles. Although MSMF is major market player but can capture the market further. Currently MSMF manufactures five types of badminton shuttle named as P-101, P-102, P-103, P-104 and P-105. Production facilities are limiting factor at MSMF. Production and marginal cost data of these 5 products are specified in table below;

Particulars	P-101	P-102	P-103	P-104	P-105
Monthly production (in units)	1,000	1,200	2,000	3,000	1,500
Direct Material Cost (₹per unit)	6	4	7	3	6
Direct Labour Cost (₹per unit)	4	9	5	8	5
Variable Production Overhead (₹per unit)	2	3	2	2	1

On drive to cost leadership strategy, MSMF is thinking to out-source some of the products. Shuttles can be sourced from a well-established company 'Protease' at the following prices. There is no tie-in between products, all products can outsources individually. These costs are on CIF basis;

Particulars	P-101	P-102	P-103	P-104	P-105
Outsourcing Cost/Buy in Cost (₹per unit)	17	18	18	11	15

Company-wide fixed overheads are of ₹15 Lacs each year. Out of which ₹2,40,000 is directly attributable to the production of these 5 products on annual basis. This fixed overhead of ₹2,40,000 is evenly split across such 5 products and entirely avoidable. Till date company does not have experience to outsource any element of production.

Mr. Singh who is newly appointed management accountant, bring the huge experience to the organization on cost control and reduction techniques. While discussing the possibility of outsourcing with CFO, Mr. Singh explained the limitation of out-sourcing and also presents a white paper on gain sharing arrangement; which can be entered with supplier to whom outsourcing is considered.

CEO just entered into the office of CFO (where such discussion is ongoing) on verge of such discussion, but he heard about gain sharing arrangement and curious to know further about the same.

#### Required

CEO post presentation/ discussion seeks report from Mr. Singh to RECOMMEND, the product/(s) which should be outsourced. Report should also EXPLAIN gain sharing arrangement along with aspects that MSMF need to consider, ensuring success out of gain sharing arrangement as a part of out-sourcing contract with Protease.



**Customer Relationship Management**

7. **Jawahar Stationary Mart (JSM)** is located in centre of city “X” and popular for wide range of stationary products at competitive rate. Box files and cobra files are among the major product of JSM. JSM clients majorly, include medium and large corporate offices apart from reasonable base of retail clients. Mr. Ronit who done his masters in operations and marketing, recently join the family business (JSM). Mr. Ronit during first week itself, identify there are regular complaints from corporate clients regarding ‘delivery of items, which are different from what is ordered’ and ‘for not meeting the requirements’. Mr. Ronit understands consumer behavior is very critical in nature, if understood well and used through-out the business operation; then can be key success factors. Hence with intent to establishing the integrated relations with customers at JSM, Mr. Ronit advise marketing team to start recording the date regarding customer in systemic manner and reporting of same.

Following is information regarding five major customers, who are regularly orders printed cobra files (Product code – J-Cobra 10) from JSM.

Particulars	A	B	C	D	E
No. of units sold	6,000	8,000	10,000	7,000	8,000
Margin per unit	6	7.5	7	8	10
No. of purchase order	10	30	25	20	10
No. of deliveries	3	4	6	4	5
Kilometers per delivery	100	185	50	250	50

Cost of processing the order is INRs 2,000 per order and cost of handling material is INR 0.15 per item, whereas transport cost is 3 per kilometer for delivery of goods. 3 rushed deliveries made to ‘B’, cost for rush delivery is INRs 800 per delivery.

**Required**

- (i) ANALYZE customer profitability for JSM.
- (ii) EXPLAIN three fundamental aspects of CRM to facilitate building relationship with profitable customer/(s).

**Just in Time**

8. **Pearson Metal and Motor Works (PM<sup>2</sup>W)** deals in manufacturing of the copper wired electronic motor, which is specifically designed. PM<sup>2</sup>W is thinking to shift from traditional system to JIT system as part of process innovation.

CEO among the other top bosses at PM<sup>2</sup>W are hopeful that implementation of JIT will not only improve value in value chain for end consumer, but also improve overall manufacturing cycle efficiency. JIT pre-implementation team was formed to evaluate the probabilities, which collects following actual and estimated data about process;

Activity Category	Traditional System (Actual)	JIT System (Estimated)
Inspection	40	30
Storage	80	20
Moving	20	10
Processing	60	40

# All data in minutes

Further, PM<sup>2</sup>W decided to practice single piece flow under JIT. PM<sup>2</sup>W received an order which is due to manufacture and delivered for 10 such motors. Total available production time to produce what customer demands is 480 minutes out of which it normal practice that 30 minutes will be spent in shutdown and cleaning. CEO is also considering JIT purchase apart from JIT production.

**Required**

- (i) EXPLAIN just in time.
- (ii) CALCULATE the 'takt time' and INTERPRET the results.
- (iii) ADVISE whether company should shift to JIT.

**Theory of Constraints**

9. **Z Plus Security** (ZPS) manufactures surveillance camera equipment that are sold to various office establishments. The firm also installs the equipment at the client's place to ensure that it works properly. Each camera is sold for ₹2,500. Direct material cost of ₹1,000 for each camera is the only variable cost. All other costs are fixed. Below is the information for manufacturing and installation of this equipment:

Particulars	Manufacture	Installation
Annual Capacity (camera units)	750	500
Actual Yearly Production and Installation (camera units)	500	500

**Required**

The questions below are separate scenarios and are not related to each other.

- (i) IDENTIFY the bottleneck in the operation cycle that ZPS should focus on improving. Give reasoning for your answer.
- (ii) An improvement in the installation technique could increase the number of installations to 550 camera units. This would involve total additional expenditure of ₹40,000. ADVISE ZPS whether they should implement this technique?
- (iii) Engineers have identified ways to improve manufacturing technique that would increase production by 150 camera units. This would involve a cost ₹100 per camera unit due to necessary changes to made in direct materials. ADVISE ZPS whether they should implement this new technique.

**Standard Costing**

10. **KONY** Ltd., based in Kuala Lumpur, is the Malaysian subsidiary of Japan's NY corporation, headquartered in Tokyo. KONY's principal Malaysian businesses include marketing, sales, and after-sales service of electronic products & software exports products. KONY set up a new factory in Penang to manufacture and sell integrated circuit 'Q50X-N'. The first quarter's budgeted production and sales were 2,000 units. The budgeted sales price and standard costs for 'Q50X-N' were as follows:

	RM	RM
Standard Sales Price <i>per unit</i>		50
Standard Costs <i>per unit</i>		
Circuit X (10 units @ RM 2.5)	25	
Circuit Designers (6 hrs. @ RM 2)	12	(37)
Standard Contribution <i>per unit</i>		13

Actual results for the first quarter were as follows:

	RM '000	RM '000
Sales (2,000 units)		158
Production Costs (2,000 units)		
Circuit X (21,600 units)	97.20	
Circuit Designers (11,600 hours)	34.80	(132)
Actual Contribution (2,000 units)		26

The management accountant made the following observations on the actual results–

*“In total, the performance agreed with budget; however, in every aspect other than volume, there were huge differences. Sales were made at what was supposed to be the highest feasible price, but we now feel that we could have sold for RM 82.50 with no adverse effect on volume. The Circuit X cost that was anticipated at the time the budget was prepared was RM 2.5 per unit. However, the general market price relating to efficient purchases of the Circuit X during the quarter was RM 4.25 per unit. Circuit designers have the responsibility of designing electronic circuits that make up electrical systems. Circuit Designer’s costs rose dramatically with increased demand for the specialist skills required to produce the ‘Q50X-N’, and the general market rate was RM 3.125 per hour - although KONY always paid below the normal market rate whenever possible. In my opinion, it is not necessary to measure the first quarter’s performance through variance analysis. Further, our operations are fully efficient as the final contribution is equal to the original budget.”*

**Required**

COMMENT on management accountant’s view.

**SUGGESTED ANSWERS/HINTS**

1. The agreement between Raya and Livlife is **Gain Sharing Arrangement**. Gain sharing (also known as cost saving sharing) arrangement is an approach to the review and adjustment of an existing contract, or series of contracts, where the adjustment provides *benefits to both parties*. A fundamental form of gain-sharing is where a supplier agrees to perform its side of the contract with *no guarantee* of receiving a payment. Instead, any payment received is based upon the benefits that emerge to the customer as a result of the successful completion of the supplier's side of the bargain.

Livlife and Raya has also entered into such arrangement. This is clearly a risky stance for the supplier i.e. Livlife, because it could spend a fortune and walk away with nothing. Alternatively, if the benefits to Raya are substantial, Livlife could find itself rewarded with a large return. Cost savings might be attained from reducing the cost of supplies, implementing new skill and technologies, revised delivery time, improvements in operations etc.

The gain, benefit, or advantage to be shared is **not necessarily financial**, although financial benefits are expected to occur frequently. The Raya, for instance, will not necessarily take cost savings in the form of a lower contract value but might require a *higher specification* for medical treatment. However, to assess any financial benefit, both parties have to provide each other with access to relevant cost numbers to determine the basis for the assessment of the benefit and the calculation and sharing of the benefit.

Many contracts involving these arrangements have emphasis on greater openness and shared development and improvement. In the given case gain-sharing deals are, on the face of it, a win-win situation for both Raya and Livlife, interest of both are aligned. Livlife is trying to save costs of Raya while Raya is trying to get world class services.

2. Fresh Bazar sells these fruits and vegetables at the almost same price as of local vendors in local mandis. Though the quality of local vendors is not as good as Fresh Bazar but local public prefer to buy fruits and vegetables from local vendors on road sides. This is because of the *bargaining power of the buyer* is more from local vendor while Fresh Bazar sells at fixed price.

Fresh Bazar should try to reduce the cost by closely study of the organization's **value chain**. In agriculture sector, approximately 30% of total production lost every year before it reaches to the consumer. Fresh Bazar can reduce these losses by analyzing the various segments of value chain. In India, each segment of agriculture sector like production, processing, marketing etc. work in an isolated manner and not in integrated manner, resulting in multiple losses in value chain. Fresh Bazar should attempt to integrate all the segments of value chain and try to remove all the intermediaries

involved, benefiting both farmers and consumers. Moreover, contract farming participation could enhance the overall value chain performance in terms of increasing production, lowering transaction costs and boosting quality of the output product. Contract farming is an agreement between buyer and farmers based on which agriculture production being carried out, it also stipulates the quality required and the price at which the farmers agreeing to deliver at a future date.

At present, Fresh Bazar purchases fruits and vegetables from wholesale mandis. Instead of buying from wholesale mandis Fresh Bazar should participate in *contract farming* to reduce the input price risk i.e. price of fruits and vegetables which fluctuate every day in wholesale mandi. Through contract framing Fresh Bazar can also agree to support the farmers by supplying of inputs, assisting with preparation of land, information about latest technologies, effective use of power supply, providing production advice and transporting produce to its premises to maintain the desired level of quality.

In addition, Fresh Bazar can also use *target costing* to reduce their other operating costs.

Since the small road side vendors continue to coexist, therefore, Fresh Bazar should also supply their fruits and vegetables to them. In this way, they can avoid opposition from small vendors and farmers, it's a win-win situation benefiting everyone.

### 3. Report

Addressed to;  
Office of CEO,  
Gold Star Limited (GSL).  
Dated – 07<sup>th</sup> Jan 2020

#### Report on operational aspect of 5S and expected advantage

5S represent scientific way of *workplace management* so that work can be performed effectively, efficiently, and safely. 5S was come into practice as part of Toyota Production System in early of mid- 20<sup>th</sup> century. 5S is usually considered as essential component of lean manufacturing, and foundation of eight pillars of TPM. The 5S refer to five Japanese words- seiri (sort), seiton (set in order), seiso (shine), seiketsu (standardize), and shitsuke (sustain). They define a system for workplace organization and standardization. *Sort* means to separate needed and unneeded materials and to remove latter. *Set in Order* means to arrange materials and equipment so that they are easy to find and use. *Shine* means to conduct a clean-up campaign. *Standardize* means to formalize procedures and practices to ensure that all steps are performed correctly.

Finally, *sustain* means to form habit of always following first four Ss through training, communication etc.

Note - Later 6<sup>th</sup> S was also introduced and i.e. safety.

### S1 - Sorting

In order to over-come the problem of 'idle laying over material' all across production floor area, sorting of material is need to be done in following categories:

- Not needed at all – to be moved to red tag area.
- Needed but not now – need to be moved to store with yellow tag.
- Needed but not here – to be moved to red tag area.
- Needed but not so much quantity.

For purpose of doing sorting GSL need to be answered following questions:

- What is required?
- How much required?
- When it is required?
- Where it is required?

Sorted material depending upon category can be **separated** and made ready for movement/ shift, in order to segregate the sorted material; *visual aid technique* can be used by attaching coloured tags to each category of material (called visual sorting). Following two categories of tag can be used:

Red tag – A card containing detailed information of 'unwanted things' with a given time limit for further action to be taken.

Yellow tag – A card containing detailed information of 'needed things', but not now with a given time limit for further action to be taken – usually kept in store.

Sorting can help GSL to identify:

- a) Obsolete material; parts (jigs/tooling) not required as the design has become obsolete.
- b) Defective material; part can't be used as it is.
- c) Scrap material.
- d) Material which not in place – kept at wrong place.
- e) Unnecessary/extra/not useful material.

Sorting can also help GSL in reduction of material lying vacant on production floor, by segregating them into different categories and ensure that rarely used material either removed or tagged in red tape area. If material were sorted than 'loss of material' which was lying vacant near to assembly line during fire incident could be saved.

### S2 - Set in order

Systemic arrangement by ensuring 'place for everything and everything in its place'. Purpose is to *save search time* and *eliminate motion waste*, through visual management; with *search-free* and *count free* arrangement.

Colour can be best visual aid – RYGB

R – Red – Critical
Y – Yellow – Reorder
G – Green – Design
B – Blue – Excess

Note – Mapping of RYGB to feature is *purely illustrative*.

In order to implement **systematic arrangement**, GSL need to consider and answer;

- Analyse status.
- Decide – Which things will belong where?
- Decide – How they should be put away?
- Get everybody to follow rules through indexing, labelling etc.

Expected benefits of set in order to GSL

- a) *Faster retrieval* of things results in elimination of search time.
- b) Opportunity to *correct the abnormalities faster* as visibility improve by system itself.
- c) *Space saving* by systematic arrangement.
- d) *Efficiency of work* improves as things are available when they are actually needed.

Thus, S can solve the specifically problem of *non-accessibility* of tools.

### S3 – Shine

Ensure there must be *cleanliness* 'in and of' everything. Obviously, if there less number of items, then there is less to clean.

- Cleaning should be with meaning.
- Cleaning is inspection (from all aspects – front, rear, left right, top and bottom).

Shine will help GSL to keep things in order with regular **cleaning** and **upkeep**, so that maintenance become 'preventive function' rather corrective and any incident, likewise fire occurrence on assembly-line; must be avoided. This will ensure larger utility out of Machine and Plants which will increase *replacement cycle* and *save investment* by lowering down maintenance and replacement cost.

**S4 – Standardization**

Establishing the '**standards**' and make '**operating procedure**' to create *consistency* and ensure that *all steps are performed correctly*. There are;

- Fix responsibilities for implementing & evaluating system.
- Integrate these responsibilities into routine work.
- Check how well the system is working and sustaining itself.

In order to ensure TPM all 5S are essential, but standardisation is key, GSL is facing large set of problem in assembly of electronic cycles and reason being absence of SOPs. Hence, by establishing the standardised process GSL can identify Critical Success Factors (CSFs) and benchmark the Key Performance Indicator (KPIs) against each CSFs.

**S5 – Sustain**

In order to sustain with the established standard, it is required to do;

- Daily monitoring
- Improving ownership by allocating areas
- Using 'red tag campaign'
- Communicating visually through fixed point photography
- Structured communication
- Continuous training of all employees
- Periodic audits at all level
- Motivating staff through recognition

Since 5S is not a onetime exercise, it is *continuous process*, hence, it is essential to **sustain the practices followed** during earlier 5Ss. GSL witness the high attrition rate at top management level, hence, it is important that GSL must inculcate practice of 5S in the system and work culture and sustain them on continuous basis, irrespective of attrition.

**Sixth S** is 'safety' which was added later on, in order to ensure safety while performing all the remaining 5S.

Further details can be tabled on requisition basis.

Closure of Report

Management Accountant  
(For Management Accounting Division)  
Gold Star Limited



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

#### **Financial Perspective**

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

#### **Customer Perspective**

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

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

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

#### **Internal Processes**

Number of business processes within Arby re-engineered has exceeded the target, which is very good and the impact of which may be reflected in the lowering of level of customer complaints. Likewise, the investment to improve IT security has been a great success, with only three incidences of fraud per 1,000 customers reported compared to the target of 10. However, only two new services have been made available via online application, instead of the target of four, which is unsatisfactory. But fortunately, its CO<sub>2</sub> emission is below to the target level.

### Learning and Growth

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

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

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

### 5. Performance of Spice for the year ended 31March 2019

#### Revenue

Gross Fees of Spicy has increased by 5.66% in 2019, which reflects the higher SHR (78% vs. 73%) and the increase in average standard fees per student (M\$ 15,000 vs. M\$ 12,000 per student). However, this information is not enough to conclude how well institute have performed in the year to 2019.

Net Fees has only increased 1.22%, this reflects the significant 35.13% increase in the discounts or scholarships offered.

It is observed that even though % change in the SHR is +6.85% (from the budgeted level of 73% to 78%), revenue from fees, net of discount/ scholarship, only increased by 1.22%. This means that average fees collection per student in 2019 was lower than in 2018, despite the higher average standard rate (M\$15,000 vs M\$12,000).

It is also important to mention that in tough market conditions, managers have managed SHR, higher than budgeted figure by offering/ awarding the discount or scholarship.

With the increase in SHR, one of the best possible benefit is that, even if students are paying less fees, they will generate additional revenue from sale of books and test series. For example, in the given case additional revenue has increased by approximately 5.23% from M\$ 25,895 to M\$27,250.

In total, revenue has increased 2.1% in 2019 v 2018.

Overall, given the tough market conditions, any increase in revenues can be viewed as positive, however, the revenue achieved from per student should be greater than the variable cost of providing it.

### **Operating Profit**

Notwithstanding the increase in revenue, operating profits have fallen by M\$ 14,52,000 (6.00%) between 2019 and 2018, due to a sizeable increase in operating costs. There is no detail about Spicy's operating costs, for example, the split between fixed and variable costs. However, in tough market conditions, cost control is likely to be very important. As such, increase in operating costs M\$ 39,27,000 (4.19%) between 2018 and 2019 is potentially a cause for concern and the reasons for the increase should be investigated. However, when looking to reduce costs, it will be very important to do so in a way which does not compromise student's satisfaction. More generally, Spicy needs to avoid cutting expenditure in areas which will have a detrimental impact on student satisfaction ratings, for example, not providing enough time by faculty to students for doubt solving.

The increase in costs has also led to a fall in operating profit margin. The margin falls from 18.36% to 16.35%. This reduced profitability is also reflected in the institute's return on capital employed which has fallen slightly from 64.21% to 60.30%. This suggests that the value which Spicy is generating from its assets is falling.

### **Students Satisfaction Rate (SSR)**

Although the reduction in profitability should be a concern for Spicy, the reduction in student satisfaction rate should potentially be seen as a greater cause for concern. The rating suggests that, in the space of one year, it has lost 1.5 points in the scale of 1-10, being the top Engineering Coaching Institute, Spicy cannot afford to lose the points.

Spicy Institute pride itself on their results and level of educational service it offers to its students. Both factors are important considerations for students when considering whether or not to join Spicy Institute.

Therefore, Spicy needs to ensure that student satisfaction levels are maintained as high as possible and it is also important to know that how its students feel about the services it offers.

Moreover, the decision to defer the remedial programme is likely to have a detrimental impact on the future performance.

6. Report to;  
Office of CEO,  
Mount Sports Manufacturing Facilities (MSMF),  
Dated – 03<sup>rd</sup> Jan 2020

### Report on Outsourcing of Products to Protease

- (i) **Recommendation on out-sourcing of the products – Product P-102 and P-104** can be out-sourced. (see computations below)

Particulars	P-101	P-102	P-103	P-104	P-105
a. Monthly production (in units)	1,000	1,200	2,000	3,000	1,500
b. Direct Material Cost (₹per unit)	6	4	7	3	6
c. Direct Labour Cost (₹per unit)	4	9	5	8	5
d. Variable Production Overhead (₹per unit)	2	3	2	2	1
e. Marginal Cost (₹per unit) ...(b)+(c)+(d)	12	16	14	13	12
f. Monthly Total Marginal Cost/Variable Cost ... (e)×(a)	12,000	19,200	28,000	39,000	18,000
g. Monthly Allocable Fixed Overhead*	4,000	4,000	4,000	4,000	4,000
h. Total Monthly Cost Production-in-house ... (f)+(g)	16,000	23,200	32,000	43,000	22,000
i. Outsourcing Cost/ Buy in Cost (₹per unit)	17	18	18	11	15
j. Total Monthly Cost - Outsourcing/Buy in ... (i)×(a)	17,000	<b>21,600</b>	36,000	<b>33,000</b>	22,500

Total monthly cost of in house production is ₹1,36,200 and Total comparable monthly cost of outsourcing/Buy-in is ₹1,30,100. There is overall saving of ₹6,100, but since there is no tie-in between products, hence decision on all products whether can be outsourced or produced in-house can be taken individually.

The above calculation suggests that only **P-102** and **P-104** can be sourced through outsourcing due to, whereas **P-101**, **P-103** and **P-105** can be produced more cheaply in-house.

(\*)

Since avoidable in nature, hence relevant for decision making. ₹2,40,000 is annual cost, hence monthly fixed overhead expenditure will be ₹20,000.

**However, following aspects needs to be kept in mind, prior to entering to out-sourcing arrangement of product P-102 and P-104**

**Issue 1**

If products **P-102 and P-104** are outsourced, the company would then have spare capacity. Since the production function/capacity is a limiting factor and there is scope of selling the further units of **P-101, P-103 and P-105**; in order to acquire the market share. Hence, spare capacity is of great importance and will be a powerful argument for outsourcing.

**Issue 2**

The reaction of the workforce at MSMF is also need to be considered because of two reasons;

- a. If production of **P-101, P-103 and P-105** cannot be expanded to take up the spare capacity on account of out-sourcing of **P-102 and P-104**, then lay-off may be required – Which may cause problem like strike by remain workforce or an industrial dispute.
- b. Facts also suggest that products **P-102 and P-104** are labour intensive (due to high comparative high labour cost). Hence, even the spare capacity on account of out-sourcing of **P-102 and P-104** is used, and then also the some of labour forces need to be retrenched.

**Issue 3**

Even if lay-off is accepted by workforce, then also cost associated with redundancies may be critical. Such cost is relevant for decision-making, hence should be considered.

**Issue 4**

Since the MSMF has no experience in the outsourcing till now, hence while dealing with Protease, MSMF need to ensure;

- a. Timely delivery in right quantity
- b. Quality of supplies
- c. Penalties in case of default

(ii) **Gain Sharing Arrangement** by MSMF as part of outsourcing agreement with Protease

Gain Sharing Arrangement is a contractual arrangement where, entity (MSMF) & outsourcing supplier (In this case protease) share the financial gain which result out of either productivity gains or increased efficiency at end of outsourcing supplier from continuous improvement, transformation, or innovation.

This arrangement in form of clause is usually included in Master Agreement of outsourcing. Outsource supplier find it unique selling point and entity is also on for continuous improvement apart this both will get share in cost saved.

Although gain sharing arrangement is largely useful in case of outsourcing services agreement, but MSMF can also while entering out-sourcing contract with Protease for **P-102** and **P-104**; but following aspects need to be considered;

**Reason of failure of Gain Sharing Arrangement** - Gain Sharing Arrangement sounds great but in practice it is quite difficult to execute. Even after a considerable level of efforts due to following reasons it may fail;

- a. Unstructured/Poorly structured terms of arrangement, in outsourcing contracts.
- b. Error in implementation.
- c. Relationship between outsource supplier and entity.

**Precaution need to be taken** - Action plan for executing gain share arrangement must contain;

- a. Be specific in outsourcing agreement.
- b. Predefined formula for sharing of benefits and period thereof.
- c. Effort from entity, because innovation is not only responsibility of outsource supplier.
- d. Constitute innovation team to create an innovation structure, generate the idea and execution of same.

### Overall

In consideration of above analysis, company should consider the outsourcing of **P-102** and **P-104** by entering out-sourcing contract with Protease. At this point, it is important to note that cost analysis emphasizes purely quantitative, financial considerations. However, outsourcing decisions are often influenced by qualitative factors, which are not directly affected in calculations. The impact of the same should also be taken into consideration. The issues suggested above are not exhaustive. Further, before opting gain sharing arrangement, the same should also be reviewed carefully from a business, legal, and tax perspective.

I hope this helps - if you need any further information, please let me know.

Closure of Report

Mr. Singh,

Management Accountant

(For Management Accounting Division)

Mount Sports Manufacturing Facilities (MSMF)

## 7. (i) Statement of the Customer Profitability at JSM

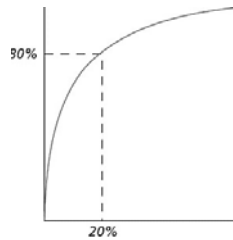
Amount in INRs

Particulars	A	B	C	D	E
Margin (no. of units sold × margin per unit) ... (A)	36,000	60,000	70,000	56,000	80,000
<b>Customer Attributable Costs:</b>					
Cost of Processing Purchase Orders (no. of purchase order × cost of processing the order)	20,000	60,000	50,000	40,000	20,000
Product Handling Cost (no. of units sold × cost of handling per item)	900	1,200	1,500	1,050	1,200
Delivery Cost (no. of deliveries × km per delivery × cost per km)	900	2,220	900	3,000	750
Cost of Rush Deliveries (no. of rush deliveries × cost per rush delivery)	---	2,400	---	---	---
Total ... (B)	21,800	65,820	52,400	44,050	21,950
Profit (or Loss) ... (A) – (B)	14,200	–5,820	17,600	11,950	58,050
Profit/ Net Revenue (in % age)	39.44%	–9.7%	25.14%	21.34%	72.56%

**Analysis**

From above, it can be concluded that customer A, C, and D are less profitable than customer E; whereas customer B is causing losses. Customer B provides a positive operating margin but is unprofitable when customer attributable costs are considered. This is because customer B requires more sales orders than the other customers. In addition, the customer has rush delivery costs.

This analysis can make sense, if interpreted, considering the 'Pareto Analysis'. Pareto Analysis named after economist Vilfredo Pareto, who specifies that 80% of consequences come from 20% of the causes i.e. 20% of customer provide 80% of the profit. Means input and output may not be balanced. (Curve of revenue, as shown in figure; represent that initially large amount of revenue comes from small portion of sales/customers only - such small proportion of customers is critical to success of entity).



Although here proportion of 80:20 don't hold truth, but for JSM; major portion of profit (around 60%) coming from customer E only, therefore, customer E is critical to JSM. Special attention can then be given to enhancing the relationships with the customer E to ensure that customer E cannot migrate to other competitors. In addition, greater emphasis can be given to attract new customers that have the same attributes as the most profitable customer E.

Further, there is no point in serving customer B, but instead of refusing to trade with customer B, if possible; it may be better to turn it into profitable customer. Customer B can be made profitable if action is taken to convince the customer B to place a smaller number of larger quantity orders and avoid rush deliveries. If customer B cannot be convinced to change its buying behavior, selling prices should be increased to cover the extra resources consumed.

- (ii) Supply chain management is the technique to integrate the supplier, manufacturing, store, and distribution function efficiently; in order to procure, produce and distribute at/in right time, quantity and place respectively. For effective distribution, CRM can be enabling tool. CRM is an integrated approach to manage and coordinate customer interactions to identifying, acquiring, and retaining customers. CRM enables businesses to understand and retain customers (through better customer experience) apart from attracting new customer, in order to increase profitably and decrease customer management costs. CRM system, comprises following three fundamental aspects to facilitate building relationship with profitable customers –

- **Operative CRM** takes care of individual transactions and is used by operational team. Interactions by customers are kept in the data base and are used later by the service, sales, and marketing team for operational decisions. In JSM, the staff who is responsible to deal with customer must be given access to customer's details including all the information of activities performed earlier. This will enhance the JSMs' staff's efficiency to deal with customer-facing processes in a better way.
- **Analytical CRM** analyses the data created on the operational side of the CRM effort for evaluation and prediction of customer behavior. In JSM, analytical CRM can highlight the patterns in customers' behavior which will help sale team while pitching the product at JSM.



- **Collaborative CRM** ensures that information about customer must flow seamlessly throughout the supply chain, majorly distribution channel; in form of collaborative effort by all associated department of JSM to increase the quality of services provided to customers. Increase in utility at customer end will result in increased loyalty. Collaborative CRM comprises interactive technology like email, digital media to simplify the communications between customers and staff which would help in building relationships.

8. (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 kind viz., of time, material and labour systematically driven out of the process with single piece flow after considering takt time.

In JIT, production facility is required to be integrated with vendor system for signal (Kanban) based automatic supply which depends upon demand based consumption. Under JIT system of inventory storage cost is at lowest level due to direct issue of material to production department as and when required and resultantly less/no material lying over in store or production floor.

Prerequisite of JIT system is integration with vendor, if vendor is not integrated properly or less reliable, then situation of stock out can arise and which can 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 become less appropriate.

Overall, JIT enhance the quality into the product by eliminating the waste and continuous improvement of productivity.

- (ii) **Takt Time** is the maximum available time to meet the demands of the customer; this will help to decide the speed of/ at manufacturing facility.

Takt time is the average time between the start of production of one unit and the start of production of the next unit, when these production starts are set to match the rate of customer demand.

$$\text{Takt Time} = \frac{\text{Available Production Time}}{\text{Total Quality Required}}$$

Here,

Available Production Time is 'total available time for production' – 'planned downtime i.e. spent in shutdown and cleaning' i.e. 450 minutes = 480 minutes – 30 minutes.

Total Quantity Required is 10 units

$$\begin{aligned} \text{Takt Time} &= \frac{450 \text{ minutes}}{10 \text{ units}} \\ &= 45 \text{ Minutes} \end{aligned}$$

Note - Heijunka can be applied in order to reduce variation between 'Takt times' over the production.

***Interpretation***

Customer's demand is 10 units, to calculate the takt time, divide the available production time (in minutes) by the total quantity required. The takt time would be 45 minutes. This means that process must be set up to produce one unit for every 45 minutes throughout the time available. As order volume increases or decreases, takt time may be adjusted so that production and demand are synchronized.

**(iii) Advise on Shifting to JIT**

To evaluate how much of the old cycle time was spent in inventory, we need to know how organizations assess the efficiency of their **manufacturing processes**. One commonly used measure is process cycle efficiency and to calculate the same every process is breakdown into combination of activities such as value added activities, non-value added activities and non-value added activities but strategic activities. In order to generate highest value to customer, only *value added activities* are included in process. But those non-value added activities, which are strategic in nature, also need to be part of process. Therefore, it may be possible that entire process is not efficient.

To measure efficiency of process, managers keep track of the relation between 'times taken by value added activities' in comparison 'total cycle time'. Such relation/ratio is processing cycle efficiency.

$$\text{Process Cycle Efficiency} = \frac{\text{Value Added Time}}{\text{Cycle Time}}$$

Processing time is considered as value added time; whereas time spend on inspection, storage and moving is non-value added time and included in cycle time. The higher the percentage, less the time (and costs) needs to be spent on non- value added activities such as moving and storing etc.

**Computation of Processing Cycle Efficiency**

Sr. No.	Activity Category	Traditional System (Actual)	JIT System (Estimated)
A.	Inspection	40	30
B.	Storage	80	20
C.	Moving	20	10
D.	Processing	60	40
E.	Value Added Time ... (D)	60	40
F.	Cycle Time ... (A)+(B)+(C)+(D)	200	100
G.	Process Cycle Efficiency (E)/ (F)×100	30%	40%

Of the 200 minutes required for manufacturing cycle under PM<sup>2</sup>W's traditional system, only 60 minutes were spent on actual processing. The other 140 minutes were spent on non- value added activities, such as inspection, storage, and moving. The process cycle efficiency formula shows that processing time equaled to 30% of total cycle time. The cycle time is reduced substantially in the JIT system from 200 minutes to 100 minutes. In addition to this, the amount of time that used up in inventory i.e. non-value-added activities is also reduced. Therefore, process cycle efficiency has been increased from 30% to 40%. This significant improvement in efficiency over the previous system comes from the implementation of JIT system. Therefore, it is advantageous to shift to JIT system.

9. (i) **Identification of Bottleneck:** Installation of cameras is the bottleneck in the operation cycle. The annual capacity for manufacturing and installation are given to be 750 camera units and 500 camera units respectively. Actual capacity utilization is 500 camera units, which is the maximum capacity for the installation process. Although, ZPS can additionally manufacture 250 camera units, it is constrained by the maximum units that can be installed. Therefore, the number of units manufactured is limited to 500 camera units, subordinating to the bottleneck installation operation. Therefore, ZPS should focus on improving the installation process.
- (ii) **Improving Capacity of Installation Technique:** Every camera sold increases the through put contribution by ₹1,500 per camera unit (sale price ₹2,500 per camera unit less direct material cost ₹1,000 per camera unit). By improving the current installation technique an additional 50 camera units can be sold and installed. This would involve total additional expenditure of ₹40,000. Hence, the incremental benefit would be:

Particulars	Amount (₹)
Increase in throughput contribution (additional 50 camera units ₹1,500 per camera unit)	75,000

Less: Increase in total expenditure	40,000
Incremental benefit	35,000

Since the annual incremental benefit is ₹35,000 per annum, ZPS should implement this improvement to installation technique, the current bottleneck operation.

- (iii) **Improving Manufacturing Capacity:** Every camera sold increases the throughput contribution by ₹1,500 per camera unit (sale price ₹2,500 per camera unit less direct material cost ₹1,000 per camera unit). By improving the current manufacturing technique an additional 150 camera units can produced. This would involve a cost ₹100 per camera unit due to necessary changes to made in direct materials. Therefore, number of units manufactured can increase to 650 camera units. However, production of 150 camera units will not translate into additional sales, because each sale also requires installation by ZPS. In a year only 500 camera installations can be made, leading to an inventory pile up of 150 camera units. This is detrimental to ZPS, since it does not earn any contribution by holding inventory. Therefore, ZPS should not go ahead with the proposal to improve the manufacturing technique.

#### 10. Comment

As the management accountant states, and the analysis (W.N.1) presents, the overall variance for the KONI is nil. The cumulative adverse variances exactly offset the favourable variances i.e. sales price variance and circuit designer's efficiency variance. However, this traditional analysis does not clearly show the efficiency with which the KONI operated during the quarter, as it is difficult to say whether some of the variances arose from the use of incorrect standards, or whether they were due to efficient or inefficient application of those standards.

In order to determine this, a revised ex post plan should be required, setting out the standards that, with hindsight, should have been in operation during the quarter. These revised ex post standards are presented in W.N.2.

As seen from W.N.3, *on the cost side*, the circuit designer's rate variance has changed from adverse to favourable, and the price variance for circuit X, while remaining adverse, is significantly reduced in comparison to that calculated under the traditional analysis (W.N.1); *on the sales side*, sales price variance, which was particularly large and favourable in the traditional analysis (W.N.1), is changed into an adverse variance in the revised approach, reflecting the fact that the KONI failed to sell at prices that were actually available in the market.

Further, variances arose from changes in factors external to the business (W.N .4), which might not have been known or acknowledged by standard-setters at the time of planning are beyond the control of the operational managers. The distinction between variances is necessary to gain a realistic measure of operational efficiency.

**W.N.1**

**KONY India Ltd.**

*Quarter-1*

**Operating Statement**

Particulars	Favourable RM	Adverse RM	RM
Budgeted Contribution			26,000
Sales Price Variance [(RM 79 - RM 50) × 2,000 units]	58,000	---	NIL
Circuit X Price Variance [(RM 2.50 – RM 4.50) × 21,600 units]		43,200	
Circuit X Usage Variance [(20,000 units - 21,600 units) × RM 2.50]		4,000	
Circuit Designer's Rate Variance [(RM 2 - RM 3) × 11,600 hrs.]		11,600	
Circuit Designer's Efficiency Variance [(12,000 hrs. - 11,600 hrs.) × RM 2.00]	800		
Actual Contribution			

**W.N.2**

**Statement Showing Original Standards, Revised Standards, and Actual Results for Quarter 1**

	Original Standards (ex-ante)		Revised Standards (ex-post)		Actual	
	Units	RM	Units	RM	Units	RM
Sales	2,000 units × RM 50.00	1,00,000	2,000 units × RM 82.50	1,65,000	2,000 units × RM 79.00	1,58,000
Circuit X	20,000 units × RM 2.50	50,000	20,000 units × RM 4.25	85,000	21,600 units × RM 4.50	97,200
Circuit Designer	12,000 hrs. × RM 2.00	24,000	12,000 hrs. × RM 3.125	37,500	11,600 hrs. × RM 3.00	34,800

**W.N.3****Statement Showing Operational Variances**

Particulars	(₹)	(₹)
<i>Operational Variances</i>		
Sales Price [(RM 79.00 - RM 82.50) × 2,000 units]	7,000 (A)	16,500 (A)
Circuit X Price [(RM 4.25 - RM 4.50) × 21,600 units]	5,400 (A)	
Circuit X Usage [(20,000 units – 21,600 units) × RM 4.25]	6,800 (A)	
Circuit Designer Rate [(RM 3.125 - RM 3.00) × 11,600 hrs.]	1,450 (F)	
Circuit Designer Efficiency [(12,000 hrs.– 11,600 hrs.) × RM 3.125]	1,250 (F)	

**W.N.4****Statement Showing Planning Variances**

Particulars	(₹)	(₹)
<i>Planning Variance</i>		
Sales Price [(RM 82.50 - RM 50.00) × 2,000 units]	65,000 (F)	16,500 (F)
Circuit X Price [(RM 2.50 - RM 4.25) × 20,000 units]	35,000 (A)	
Circuit Designer Rate [(RM 2.00 - RM 3.125) × 12,000 hrs.]	13,500 (A)	