

MOCK TEST PAPER – 1

FINAL COURSE: GROUP – II

PAPER – 5: STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

SUGGESTED ANSWERS/HINTS

1. (i) The **NLI shall not accept the outsourcing proposal** from 'Janta Press' to print 1,000 sets of study material of the revised certification course.

The costs relevant to outsourcing decision shall only be that cost which can be avoided by accepting out-sourcing proposal. These costs have cost on account of direct material, direct labour, variable overheads excluding the royalty because same is still need to be paid by NLI, and avoidable portion of fixed overheads (absorbed on printing of such 1,000 sets).

Statement of costs which can be avoided (relevant cost)

Cost Head	Per-unit cost (In Rs)	Total Cost (In Rs)
Direct material	560	5,60,000
Direct labour	265	2,65,000
Variable overheads	525 (725-200)	5,25,000
Avoidable fixed overheads	-	80,000
Total costs which can be avoided		14,30,000

Since the maximum amount of costs which can be saved on account of outsourcing of the printing of 1,000 sets of study material is ₹14.30 lakhs, which is less than the price (₹14.50 lakhs) offered by 'Janta Press'; Hence NLI should not accept the outsourcing proposal.

- (ii) **Non-monetary aspects which are in favour of the outsourcing (to Janta Press)**

NLI can focus on value-generating activities– The value chain of any organisation built from activates which converts the input into the final product for which customer is ready to pay. How much he is ready to pay, depends upon the value perceived by him. Hence value-generating activities are of utmost importance and capable to generate competitive advantage. In case of NLI the candidates are customer who are ready to enroll in the revised certification course because now the course has enhance coverage with quality content which is more relevant to current scenario. Hence activities which capable to generate value for customer are coverage of course, the quality of content, and relevance. By outsourcing of printing job NLI can enhance the focus on such value-generating activities.

Note- Quality of content and quality of books (and it material) are purely different. Prior is of intellectual importance and later is only fact of material and appearance (no doubt may ease reading experience of candidate).

TBL effect– TBL stands for triple bottom line. TBL was suggested by Elkington in 1999, which focused on considering People and Planet apart from Profit. Since the outsource contractor Janta Press is awarded by local government and other agencies for using 100% recycled paper hence outsourcing to Janta Press **will improve the environment footprint of NLI**.

Experience of Janta Press and reputation– Since Janta Press is in the business of printing for the last 20 years and renowned for quality. Hence NLI may relax in reference to quality, moreover

experience in the printing of 20 years; itself an assurance factor that the learning curve at Janta Press is quite mature, which convert processes into SOPs (Standard Operating Procedures).

Note- Printing is a core competency of Janta Press, while not in the case of NLI

Confidentiality is not an issue– Since is of printing of Study material, which is the intellectual property of authors for which they are honored with royalties; hence the copyrights of content is reserved with authors. So a breach of confidentiality of content will cause civil as well as a criminal liability on part of Janta Press.

Note- The number of copies printed is not confidential information.

Gain Share Arrangement clause can be inserted in outsource contract - Typically gain sharing clause requires the outsource contractor to present technology improvement or cost-saving ideas to the client (throughout the life of the outsource contract). Because some of these ideas may reduce the outsource price, as per clause a portion of the financial benefit will be shared with client. Hence in this case NLI can ask for insertion of GSA clause in the master services agreement.

Non-monetary aspects which are against the outsourcing (to Janta Press)

Reliability of outsourcing contractor to meet timelines (timely delivery) and continuity– Continues and timely availability of supplies is important in every business, NLI is not an exception to this; hence the reliability of outsource contractor **to meet timelines (timely delivery) and continuity** critical factors. Obviously in-house operation has more **reliability apart from flexibility** too. Even if NLI insert 'Make the loss good, if on account of delayed supply or no supply', the loss of contribution is easy to calculate and recover; but it is complex to compute loss of reputation and brand equity in money terms.

What to do with staff and spare capacity– Out sourcing will obviously result in spare capacity at printing division and also result in employees/workers who are not engaged now (if they are regular employee/worker). The following are two critical decisions which are resultant out of outsourcing and may cause a great un-rest;

Whether those staff will be engaged somewhere else or retrenched?

Will it impact the motivation of other employees?

Note- The casual worker can be hired and fire easily and at lesser cost rather regular workers due to provisions of labour laws and trade parlance.

Establishing co-ordination with outsource contractor– NLI need to establish coordination with Janta Press for drafting and signing agreement then execution of same (in term of placing order, printing as per instruction, conducting inspection of inward supplies, processing invoices and making payments, etc.), which may cause a bit extra effort and resource. As SPOC (single point of contact) is also need to designate at NLI to co-ordinate will Janta Press.

(iii) Gain-sharing Arrangement – Failure and Check-points

Gain-sharing arrangement leads to win-win situation hence becoming increasingly popular. In the outsourcing contracts the client is willing to insert continuous improvement clauses to capitalise on learning curve and process improvement through technology up-gradation etc. and outsource contractor (service providers) also find the same as great selling point.

So, gain sharing arrangement is a contractual understanding where the client (NLI) and outsource contractor (Janta Press) agree to share gains (measurable financial gains) as a result of continuous improvement or innovation.

Reasons - why gain sharing arrangement fails

Poorly drafting and structuring of clause/contracts– What matters the most in any contract, the risk and reward must be **clearly articulated and expressly mentioned**. Gain sharing is also about maintaining a **balance between risks and rewards** which the contractor and client are sharing. Hence a poorly drafted gain share arrangement clause in any contract is bound to fail.

Clue-less, careless and bungled implementation– A clueless implementation just to execute the innovation may lead to severe consequences apart from eliminating the possibility of gain.

Lack of confidence– The success of gain sharing arrangement largely rest on the level of trust between outsource contractors and clients. The confidence in each other, create a ground which build-up the requisite appetite to accept the probable risk in attempting innovation and improvement.

Check-points and measures

NLI can overcome these obstacles by adopting the following standardized practices-

Excellence at end of outsource contractor is prerequisite– Innovations fosters only in an accommodating environment. NLI must assess the SOPs in application and Business environment at Janta Press to evaluate the efficiency and effectiveness as measures of excellence to cultivate and nurture the ideas.

Innovation is shared responsibility– Changes don't happen automatically, these need to make happen and innovation is not the sole responsibility of outsourcing contractor; hence mere inserting a clause and then sit back will not yield any result for NLI. NLI and Janta Press both need to push themselves in order to conceive an idea, concrete the thought, evaluate the viability and execute the same.

Be specific– NLI and Janta Press must express clearly, what will be constituted as gain sharing idea. A tentative schedule of possible innovations/ideas may also be mentioned in the contract for greater clarity.

Note- Mind it, minor improvements and marginal tweaks is not constituted as gain sharing idea.

Draft it in win-win structure– Gain-sharing is about maintaining a balance between risks and rewards which contractor and client is sharing, hence in order to keep both parties motivated GSA clause must create a win-win situation. Key factors are; how benefits will be shared, and equitable risk ownership.

Don't shy to negotiate– Larger details leads to lessen ambiguity and a high probability of yielding success. Hence both NLI and Janta Press need not be shy in order to resolve the concerns and bring clarity to contract.

Define the length and mode of reimbursement– In the case of recurring benefits, a cut-off date need to identify by mutual understanding between NLI and Janta Press to quantify how long the benefits can be shared. The mode of reimbursement shall also need to be documented.

Constitute an innovation taskforce– Execution is key to unlock the value of an idea, hence NLI and Janta Press can have their respective and common innovation taskforce who undertake the responsibility of implementation of innovation/idea. Developing business case after conducting a feasibility study shall be the responsibility of these task-forces.

2. (i) Analysis

Competitiveness

	"X"	Centre/s Average
Website hits converted into orders (in percentage)	66.06% (9,915/15,010) × 100	63.71% (12,270/ 19,260) × 100

This ratio shows whether "X"'s services are *attractive compared to its competitors*, which is essential if it is going to persist in such a competitive market.

It has performed considerably better than Centre/s average, having converted 66.06% of website hits into jobs, compared to the 63.71% converted by other Centre/s. This is a good outcome.

Financial Performance

	"X"	Centre/s Average
Gross profit ratio	53.15% (48,50,400/ 91,26,000) × 100	47.28% (51,37,740/ 1,08,66,900) × 100

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

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

Quality of Service

	"X"	Centre/s Average
Jobs from repeat customers (in percentage)	15.23% (1,510/ 9,915) × 100	13.08% (1,605/ 12,270) × 100

Quality is a key aspect of "X"'s service to customers and *if it is poor, customers will not return*.

Again, "X" has surpassed the other Centre/s on average by 2.15 percentage points. Though, it has a lower ratio of senior beauticians to junior beauticians (1.5) than other Centre/s (2), it might be possible that "X" has a portfolio of enthusiastic staff. So, the quality of work is probably better, thus the higher level of repeat customers.

Flexibility

	"X"	Centre/s Average
Time taken per job (hrs.)	2.43 (24,120/ 9,915)	2.11 (25,880/ 12,270)

The comparison shows that "X" takes longer time to complete a job than the other Centre/s average, which is not really good, and is probably because of they have slightly *less experienced staff on the whole*, but it could also be that they *do a more comprehensive job* than other Centre/s. Given the fact that they have a higher % of return customers than the other Centre/s and they are also graded 9 or 10 by most of the customers (86%). Therefore, this cannot be viewed as too adversely.

Resource Utilization

	"X"	Centre/s Average
Revenue per beautician (₹)	60,840 (91,26,000/ 150)	65,860 (1,08,66,900/ 165)

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

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

Innovation

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

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

- (ii) The **standards** block fixes the target for the performance indicators chosen for each of the dimensions. The targets must meet three criteria – they must be achievable, fair and encourage employees to take ownership. The performance of the organization could suffer if the targets set do not meet these criteria.

The **rewards** block makes sure that employees are motivated to attain the standards. It also examines the properties of good reward schemes which are that they should be clear, motivating and based on controllable factors.

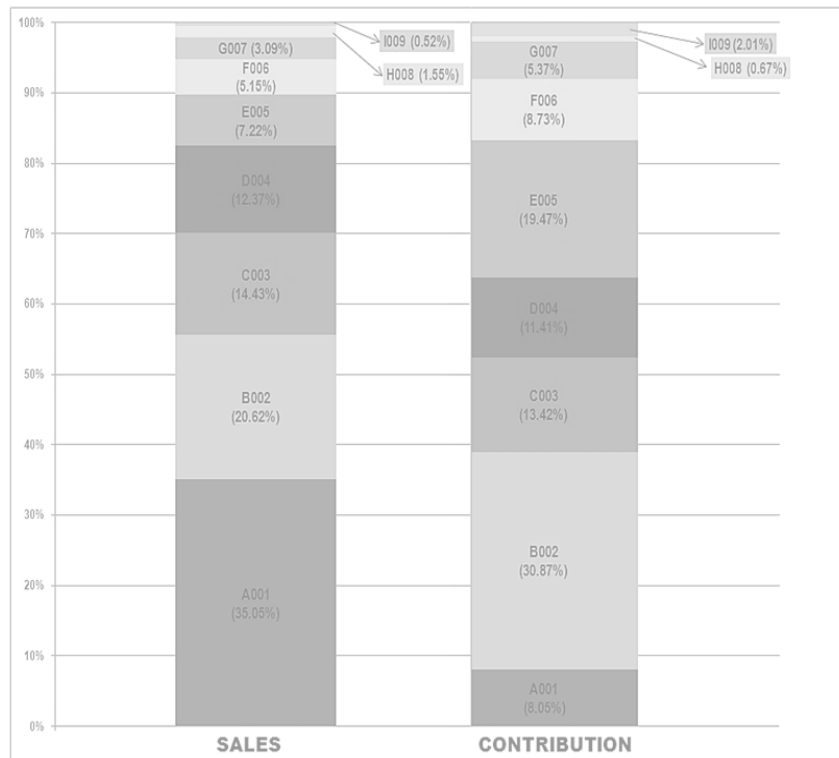
If standards and rewards are set appropriately, the staff will be engaged and motivated and it is then more likely that the goals, i.e. **dimensions**, of the organisation will be achieved

3. "Pareto Analysis"

Model	Sales (₹'000)	% of Total Sales	Cumulative Total	Model	Cont. (₹'000)	% of Total Cont.	Cumulative Total %
Pareto Analysis Sales				Pareto Analysis Contribution			
A001	5,100	35.05%	35.05%	B002	690	30.87%	30.87%
B002	3,000	20.62%	55.67%	E005	435	19.47%*	50.34%
C003	2,100	14.43%	70.10%	C003	300	13.42%	63.76%
D004	1,800	12.37%	82.47%	D004	255	11.41%	75.17%
E005	1,050	7.22%	89.69%	F006	195	8.73%*	83.90%
F006	750	5.15%	94.84%	A001	180	8.05%	91.95%
G007	450	3.09%	97.93%	G007	120	5.37%	97.32%
H008	225	1.55%	99.48%	I009	45	2.01%	99.33%
I009	75	0.52%	100.00%	H008	15	0.67%	100.00%
	14,550	100.00%			2,235	100.00%	

(*) Rounding - off difference adjusted.

Diagram Showing “Sales and Contribution”



Recommendations

Pareto Analysis is a rule that recommends focus on most important aspects of the decision making in order to simplify the process of decision making. The very purpose of this analysis is to direct attention and efforts of management to the product or area where best returns can be achieved by taking appropriate actions.

Pareto Analysis is based on the 80/20 rule which implies that 20% of the products account for 80% of the revenue. But this is not the fixed percentage rule; in general business sense, it means that a few of the products, goods or customers may make up most of the value for the firm.

In present case, five models namely A001, B002, C003, D004 account for 80% of total sales where as 80% of the company's contribution is derived from models B002, E005, C003, D004 and F006.

Models B002 and E005 together account for 50.34% of total contribution but having only 27.84% share in total sales. So, these two models are the key models and should be the top priority of management. Both C003 and D004 are among the models giving 80% of total contribution as well as 80% of total sales so; they can also be clubbed with B002 and E005 as key models. Management of the company should allocate maximum resources to these four models.

Model F006 features among the models giving 80% of total contribution with relatively lower share in total sales. Management should focus on its promotional activities.

Model A001 accounts for 35.05% of total sales with only 8.05% share in total contribution. Company should review its pricing structure to enhance its contribution.

Models G007, H008 and I009 have lower share in both total sales as well as contribution. Company can delegate the pricing decision of these models to the lower levels of management, thus freeing themselves to focus on the pricing decisions for key models.

4. (a) (i) JIT Inventory System

“For successful operation of JIT inventory system, the suppliers chosen must be willing to make frequent deliveries in small lots. Rather than deliver a week's or a month's material at one time, suppliers must be willing to make deliveries several times a day and in the exact quantities specified by the buyer.”

It is described in the problem that suppliers are not willing to

- make frequent deliveries and
- make supplies in the exact quantities as required

Accordingly, Mr. Bee's doubt is correct on successful implementation of JIT System.

- (ii) For each day, 'N' spends ₹360 per clerk (₹90 per hr. × 4 hrs.). Therefore, 'N' spends ₹1,080 per day to employ three clerks. Annually, this outlay amounts to ₹2,59,200 (₹1,080 per day × 240 days).

Over five years, the outlay would be ₹12,96,000. If the WCMS is implemented, the initial cost is ₹1,25,000. If we add the annual cost of ₹36,000, the total cost over five years amounts to ₹3,05,000. Since one clerk will be needed as well, 'N' has to incur ₹4,32,000 over five years to pay clerk (₹4,32,000 = ₹90 × 4 hrs. × 1 clerk × 240 days × 5 years). Therefore, the total cost of this option is ₹7,37,000.

Accordingly, there is cost saving of ₹5,59,000 from WCMS implementation.

Relevant Non-Financial Considerations

The WCMS may be a lot more efficient, but more rigid. For instance, what if, a student forgets to bring his/ her card or transaction failure due to connectivity issue, and may not have enough cash to pay. Automated systems may be less able to handle these situations. Having clerks may add an aspect of flexibility and a human aspect that is hard to quantify.

Conclusion

Obviously, WCMS option is more cost effective for 'N' because there is a cost saving of ₹5,59,000. But, non- financial factors should also be taken into consideration.

OR

Statement Showing Performance

	July	Aug	Sep
Advertisement cost as a percentage of donation	2.5%	4%	3%
Target percentage of Advertisement cost of donation	3%	3%	3%
Welfare cost as a percentage of donation	82%	84%	89%
Target percentage of welfare cost as a percentage of donation	85%	85%	85%
Respite care provided	80%	87.98%	92%
Target percentage of respite care	90%	90%	90%

- (b) (i) Transfer Price: 200% of Full Cost Basis

$$= 200\% \text{ of } (\text{¥ } 2,500 + \text{¥ } 5,000)$$

$$= \text{¥ } 15,000 \text{ or } \text{£}300 (\text{¥ } 15,000/ 50)$$

Transfer Price: Market Price Basis

$$= \text{¥ } 9,000 \text{ or } \text{£}180 (\text{¥ } 9,000/ 50)$$

(ii) Statement Showing “Operating Income”

Particulars	Japan Mining Division		UK Processing Division	
	Transfer Price		Transfer Price	
	¥15,000	¥9,000	£300	£180
Selling Price (Polished Stone)	---	---	£3,000	£3,000
Transfer Price (Raw Emerald)	¥ 15,000	¥ 9,000	---	---
Raw Emerald	---	---	£600 (£300 × 2)	£360 (£180 × 2)
Variable Cost	¥ 2,500	¥ 2,500	£150	£150
Fixed Cost	¥ 5,000	¥ 5,000	£350	£350
Profit Before Tax	¥ 7,500	¥ 1,500	£1,900	£2,140
Less: Tax 20%/30%	¥ 1,500	¥ 300	£570	£642
Profit After Tax per Carat of Raw Emerald	¥ 6,000	¥ 1,200	£1,330	£1,498
Raw Emerald	1,000 Carats	1,000 Carats	500 Carats	500 Carats
Total Profit	¥ 60,00,000	¥ 12,00,000	£6,65,000	£7,49,000
	Or	Or		
Total Profit (£)	£1,20,000	£24,000	£6,65,000	£7,49,000

5. (a) (i) AB Chemicals has the opportunity to utilize 10 units of non-moving chemical as input to produce 10 units of a product demanded by one of its customers. The minimum unit price to be charged to the customer would be–

Cost Component	Cost per unit of product (₹)
Cost of Material (Realizable value = ₹3,500 / 10 units of chemical)	350
Out of Pocket Expenses	50
Other Material Cost	80
Minimum Unit Price that can be charged	480

Therefore, the minimum unit price that can be charged to the customer, without incurring any loss is ₹480 per unit of product. As explained below in point (ii), allocated overhead expenses and labor cost are sunk costs that have been ignored while calculating the minimum unit price to be charged.

(ii) Analysis

- (a) Cost of Material: Relevant and hence included at realizable value. AB Chemicals has 10 units of non-moving chemical input that has a book value of ₹2,400, realizable value of ₹3,500 and replacement cost of ₹4,200. Realizable value of ₹3,500 would be the salvage value of the chemical had it been sold by AB Chemicals instead of using it to meet the current order. This represents an opportunity cost for the firm and hence included while pricing the product. Book value would represent the cost at which the inventory has been recorded in the books, a sunk cost that has been ignored.

Replacement cost of ₹4,200 would be the current market price to procure 10 units of the input chemical. This would be relevant only when the inventory has to be replenished after use. This chemical is from the non-moving category, that means that it is not used regularly in production process and hence need not be replenished after use. Therefore, replacement cost is also ignored for pricing.

- (b) Labour Cost: Not relevant and hence excluded from pricing. It is given in the problem that this order would be met by permanent employees of the firm. Permanent employee cost is a fixed cost that AB Chemicals would incur irrespective of whether this order is produced or not. No additional labour is being employed to meet this order. Therefore, this cost is a sunk cost, excluded from pricing.
- (c) Allocated Overhead Expenses: These expenses have been incurred at another Cost Centre, typical example would be office and administration costs. Such costs are fixed in nature that would be incurred irrespective of whether this order is produced or not. Therefore, this cost is a sunk cost, excluded from pricing.
- (d) Out of Pocket Expenses: These are expenses that are incurred to meet the production requirement of this order. These are additional variable expenses, that need to be included in pricing.
- (e) Other Material Costs: These are expenses that are incurred to meet the production requirement of this order. These are additional variable expenses, that need to be included in pricing.

(iii) Advice on Pricing Policy

Under perfect competition conditions, AB Chemicals can have no pricing policy of its own, here sellers are price takers. It cannot increase its price beyond the current market price. The firm can only decide on the quantity to sell and continue to produce as long as the marginal cost is recovered. When marginal cost exceeds the selling price, the firm starts incurring a loss.

Since AB Chemicals cannot control the selling price individually in the market, it can adopt the *going rate pricing* method. Here it can keep its selling price at the average level charged by the industry. This would yield a fair return to the firm. An average selling price would help the firm attract a *fair market share* in competitive conditions.

(b) 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 $[(RM\ 79 - RM\ 50) \times 2,000\ units]$	58,000	---	NIL
Circuit X Price Variance $[(RM\ 2.50 - RM\ 4.50) \times 21,600\ units]$		43,200	
Circuit X Usage Variance $[(20,000\ units - 21,600\ units) \times RM\ 2.50]$		4,000	
Circuit Designer's Rate Variance $[(RM\ 2 - RM\ 3) \times 11,600\ hrs.]$		11,600	
Circuit Designer's Efficiency Variance $[(12,000\ hrs. - 11,600\ hrs.) \times RM\ 2.00]$	800		
Actual Contribution			26,000

W.N.2

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

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

W.N.3

Statement Showing Operational Variances

Particulars	(₹)	(₹)
Operational Variances		16,500 (A)
Sales Price $[(RM\ 79.00 - RM\ 82.50) \times 2,000\ units]$	7,000 (A)	
Circuit X Price $[(RM\ 4.25 - RM\ 4.50) \times 21,600\ units]$	5,400 (A)	
Circuit X Usage $[(20,000\ units - 21,600\ units) \times RM\ 4.25]$	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)	

5. (a) (i) Analysis of the proposal to make changes to the inspection process:

The company wants to reduce the cost of poor quality on account of rejected items from the process. The current rejection rate is 5% that is proposed to be improved to 3% of units input.

The expected benefit to the company can be worked out as follows:

The units of input each day = 5,000. At the current rate of 5%, 250 units of input are rejected each day. It is proposed to reduce rejection rate to 3%, that is 150 units of input rejected each day. Therefore, improvements to the inspection process would reduce the number of units rejected by 100 units each day. The resultant cost of poor quality would reduce by ₹20,000 each day (100 units of input × ₹200 cost of one rejected unit).

The cost of implementing these additional controls to the inspection process would be ₹15,000 each day.

The net benefit to the company on implementing the proposal would be ₹5,000 each day. Therefore, the company should implement the proposal.

- (ii) Analysis of maximum rejection rate beyond which the proposal ceases to be beneficial

The cost of improving controls to the inspection process is ₹15,000 each day. The number of units of input processed each day is 5,000. The cost of rejection is ₹200 per unit.

It makes sense to implement the improvements to controls only if the benefit is greater than the cost involved. To find out the point where the benefits equal the cost, solve the following equation

Let the number of reduction in rejections each day due to improved controls be R.

At ₹200 per unit, benefits from reduction in rejection would be ₹200 × R.

At what point, would this be equal to the cost of control of ₹15,000 per day?

Solving ₹200 × R = ₹15,000; R = 75 units. That is if the improvements to inspection process control reduces the number of rejections by 75 units each day, the benefit to the company would be ₹15,000 each day.

That is if the rejection rate improves by 1.5% (75 units / 5,000 units) then the benefits accruing to the company will equal the cost incurred.

In other words, when the rejection rate is 3.5% (current rate 5% - improvement of 1.5% to the rate) or below, the proposal will be beneficial. In this range, the savings to the cost of

poor quality will be more than the cost involved. For example, as explained above, when the improved rejection rate is 3%, the net benefit to the company is ₹5,000 each day.

Beyond 3.5% rejection rate, the proposal will result in savings to the cost of poor quality that is less than the cost involved of ₹15,000 each day.

- (b) (i) In participative budgeting, subordinate managers create their own budget and these budgets are reviewed by senior management. Such budget communicates a sense of responsibility to subordinate managers and fosters creativity. This is also called bottom up approach (sometime referred as participative approach).

As the subordinate manager creates the budget, it might be possible that the budget's goals become the manager's personal goal, resulting in greater goal congruence. In addition to the behavioural benefits, participative budgeting also has the advantage of involving individuals whose knowledge of local conditions may enhance the entire planning process.

The participative budget described here appears participative in name only. In virtually every instance, the participative input is subject to oversight and discussion by sales manager. Some amount of revision is also common. However, excessive and arbitrary review that substitutes a top-down target for a bottom-up estimate makes a deceit process. Such a gutting appears to be the case in EWPL. J's statement indicates a very autocratic style. The revision process also seems to be arbitrary and capricious. There is little incentive for the salesgirls to spend much time and effort in projecting the true expected sales because they know that the target would be revised again and J's estimate will prevail. This situation creates an interesting discussion about the costs and benefits of participative budgeting and gives rise to game playing and slack.

- (ii) In top down approach, budget figures will be imposed on sales personnel by senior management and sales personnel will have a very little participation in the budget process. Such budget will not interest them since it ignores their involvement altogether. While in bottom up approach, each sales person will prepare their own budget. These budgets will be combined and reviewed by seniors with adjustment being made to coordinate the needs and goals of overall company. Proponents of this approach is that salespersons have the best information of customer's requirements, therefore they are in the best position in setting the sales goal of the company. More importantly, salespersons who have role in setting these goals are more motivated to achieve these goals. However, this approach is time-intensive and very costly when compared with top down approach. In order to achieve personal goals, participants may also engage in politics that create budgetary slack and other problems in the budget system.

Since both top down and bottom up approaches are legitimate approaches, so EWPL can use combination of both. Seniors know the strategic direction of the company and the important external factors that affect it, so they might prepare a set of planning guidelines for the salesgirls. These guidelines may include forecast of key economic variables and their potential impact on the EWPL, plans for introducing and advertising a new product and some broad sales targets etc. With these guidelines, salesgirls might prepare their individual budget. These budgets need to be reviewed to validate the uniformity with the EWPL's objectives. After review, if changes are to be made, the same should be discussed with salesgirls involved.