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Answer Paper	
SCMPE	**Duration**: 110
Details: Test – 5	**Marks**: 60

Instructions:

- All the questions are compulsory
- Properly mention test number and page number on your answer sheet, Try to upload sheets in arranged manner.
- In case of multiple choice questions, mention option number only Working notes are compulsory wherever required in support of your solution
- Do not copy any solution from any material. Attempt as much as you know to fairly judge your performance.

ANS 1:

Sun Electronics manufactures and sells various electronic products through its physical stores. The existing manufacturing system does not take into consider the demand of products in the market. Store managers are allowed to submit only one order per month. A high level of inventory can be seen at Sun Electronics as compared to the industry average. The store managers tend to keep high level of inventories as a safeguard against stock-outs. Whereas, keeping inventory to meet customer requirement is good, high level of inventories due to inefficient processes is not advisable.

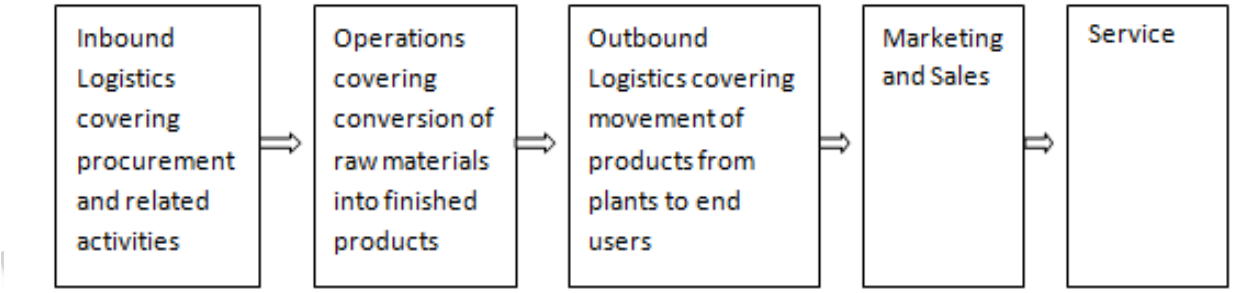
The company also has a longer working cycle because of a long order to deliver time and excess holding or inventory. A significant amount of working capital is blocked due to this practice. Technology changes rapidly and the company is expected to roll out latest products in the market. A product like mobile gets outdated very soon and the company has to resort to discounted sales. This results in financial losses to the company.

The company has identified an opportunity in e – commerce. E – Commerce businesses require leaner models and faster response time. The production must be based on the demand from the customer and not on an ad – hoc basis. In the following paragraphs, the importance of supply chain management (SCM) and its applicability in the current case is discussed.

Supply Chain Management (SCM)

Supply Chain Management can be defined as the management of flow of products, services and information, which begins from the origin of products and ends at the product's consumption at customer's end. SCM also involves movement and storage of raw material, work – in – progress and finished goods. In other words, supply chain management involves management of all activities associated with moving goods from the raw materials stage to the end user. An important objective of SCM is to correlate the production and distribution of goods and services with demand of the product.

The following are the various activities which an organization carries out to meet the customer requirements (Primary activities under value chain model) –

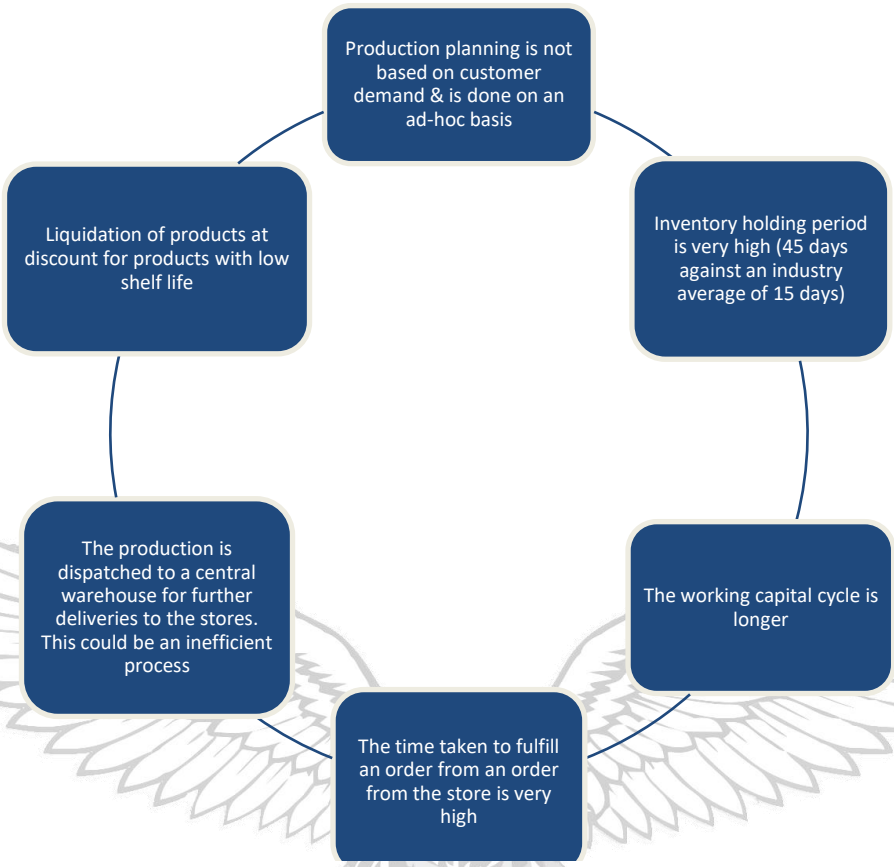


Supply Chain Management looks each of the above activities as integrated and interrelated to each other. None of the activities can be looked in silos. In the case of Sun Electronics, there is a restriction on number of orders which a store manager can place. This would lead to excess ordering because of the fear of stock-outs.

The customer demand is completely ignored and hence the production is not in sync with the market demand. This could lead to excess production, higher inventory holding and longer working capital cycles

The facts presented in the case indicate the following problems at Sun Electronics:

SCM Process and Applicability to Sun Electronics



STEPS IN SCM PROCESS

Plan -

The first step in SCM process is to develop a plan to address the requirement of the customer. Sun Electronics must shift its focus from ad hoc and predetermined production planning to understand the requirements of customers. Production must be planned based on the demand of products. The focus must be on producing on producing what the customer wants.

Develop (procure) –

In this step, the materials required for production is sourced from various suppliers. A good relationship with supplier is required to ensure that the parts/materials are received as and when required by the production team. It is also important that the vendors supply quality material which is not the case in Sun Electronics. The company must select suppliers which are

dependable and can deliver quality products in the stipulated time. The company mustselect suppliers which are dependable and can deliver quality products in the stipulated time. The company must focus in reducing the lead time required for sourcing materials which will reduce the inventory holding period.

Make –

The third step is making or manufacturing the products required by the customer. This is quite different from the existing practice in Sun Electronics where store managers are allowed to place only one order. This would mean that the company is not considering the ever changing demands and tastes of the customers,

Deliver –

The fourth step is to deliver the products manufactured for the customers. This stage is concerned with logistics. The time required to deliver to the store in case of Sun Electronics is very high. The company must evaluate if the centralized warehouse is causing delay in delivery of products to the stores.

Logistics is one of the important components of the entire supply chain process. Right from procurement of material, movement of raw material in the plants and final delivery of products of customers, logistics play a critical role. An excellent system must be in place to ensure that the movement of materials and final product are uninterrupted.

Warehousing also plays an important role in today's business environment. The company has a centralized warehouse to meet the needs of all its stores. This would not be the most efficient way. The company must evaluate creation of additional storage facility which would ensure timely delivery of goods to the stores. Newer products can reach the market faster.

Benefits of SCM to Sun Electronics

SCM looks at the entire value chain process as an integrated process. There is a seamless flow of information and products between suppliers and customers. The customer's requirements

would be captured to plan the production. The suppliers would be intimated to supply the materials according the production plan. An effective logistics system ensures that movement of materials is seamless. Sun Electronics can also consider implementing an integrated ERP which would also interact with vendors on real time basis.

The following benefits of SCM can be envisaged for Sun Electronics –

- Better Customer Service as customer is supplied with what he/she wants in the minimum time.

- Better delivery mechanism for goods

- Improves productivity across various functions and department

- Minimizes cost (both direct and indirect)

- Reduces the inventory holding time and improves the working capital cycle

- Enhances inventory management and assists in implementation of JIT systems.

- Assists companies in minimizing wastes and reduce costs

- Improves supplier relationship

PRODUCTION – As discussed earlier, the production must be in accordance with the customer order. This requires a shift in approach of the production team. Business environments have shifted from "Customer will buy what we produce" to "We have to produce what the customers require". The company would ideally not produce products to store them and sell later.

E – COMMERCE AND SCM – The SCM is the backbone of E – Commerce industry. Customers buying products online want deliveries to be faster. Another distinct feature of e – commerce is that buyers could be located in any corner of the country and not just restricted to the cities

where Sun Limited has physical presence. This definitely means that the company must have an effective Supply Chain Management in place which could meet the customer's requirement. The existing practice of one order per month from each store would not work in the e – commerce space. Orders can come at anytime and from anywhere. Supply Chain Management would be required for success of e – commerce business.

CUSTOMERS ORDERS – The Company must have an effective mechanism to capture customer orders and feed it into the production planning on a real time basis. An integrated ERP system would be required for this purpose. Any delay in intimating the production team would mean delay in production and delivery which would not be taken positively by the customer. The existing system of one order per month from a store would not fit the purpose. A real time flow of information would mean lower inventory.

PROCUREMENT – The material requirements must be communicated to suppliers seamlessly. The company must identify those vendors who can deliver quality materials in the required time frame. A delay in suppliers would delay the production process. A company cannot afford this in e – commerce business. Automatic exchange of information using EDI (Electronic Data Interchange) or Integrated ERP systems would ensure that the vendors receive material requirements in a timely manner.

LOGISTICS – Logistics would be the backbone of entire e – commerce set up. Right from sourcing of materials to delivery of products at the customer's door step, logistics would play an important role. If the company has an in-house logistics facility, the logistics team must be trained with the requirement of the new business. If the company has outsourced the logistics, vendors must be briefed about the requirements of the e – commerce. The company might have to tie up with new logistic vendors to avoid any delay in deliveries.

(20 Marks)

ANS 2:-

Working Notes

1. Material data

Standard data for actual output				**Actual output 6,400 units Actual data for actual output**	
Quantity kgs.	**Price per kg.**	**Amount Rs.**	**Quantity Kgs.**	**Price Per Kg.**	**Amount Rs.**
32,000	8	2,56,000	36,000	7.50	2,70,000

2. Labour data

Standard data for actual output			**Actual output 6,400 units Actual data for actual output**		
Labour hours	**Rate/hour**	**Amount Rs.**	**Labour Hours**	**Rate/hour Rs.**	**Amount Rs.**
32,000	8	2,56,000	36,000	7.50	2,70,000

3. Variable overheads data

Standard/Budgeted data		**Actual data**	
Budgeted variable overheads for actual hours	6,50,000	Actual variable overheads(Rs.)	6,48,000

Standard variable overhead Rate/hour	Rs. 10	Actual Units	6,400
Standard variable overhead rate/ unit	Rs. 100	Actual Hours	65,000

4. Sales data

Budgeted data			Actual data		
Sales Units	**Budgeted Margin P.u. Rs.**	**Amount Rs.**	**Sales Units**	**Actual Margin p.u.**	**Amount Rs.**
6,000	50 (Rs. 250- Rs. 200)	3,00,000	6,400	65(Rs. 265- Rs. 200)	4,16,000

1. Market Size Variance

= Budgeted market share percentage × [Actual industry sales in units – Budgeted industry sales in units] × Budgeted contribution margin per unit

= 0.12[60,000 units -6,000 units/12%] Rs. 50

= 0.12[60,000 units – 50,000 units] Rs. 50

= Rs. 60,000 (F)

2. Market Share Variance

= [Actual market share percentage – budgeted market share percentage] ×Actual industry sales in units × Budgeted contribution margin per unit

= [0.106666 -0.12] 60,000 units × 50

(6,400 units -7,200 units) Rs. 50

= Rs. 40,000(A)

3. Gross margin sales Volume Variance

= (Actual quantity – budgeted quantity) Budgeted margin per unit

= (6,400 units -6,000 units) Rs. 50

= Rs. 20,000 (F)

4. Gross margin Sales Price Variance

= (Actual margin per unit – Budgeted margin per unit) Actual quantity of units sold

=[(Rs. 65 – Rs. 50)6,400] 6,400 units

= Rs. 96,000(F)

5. Direct Material Usage Variance

=(Standard quantity – Actual quantity) Standard price per Kg.

= (32,000 kgs. – 36,000 kgs.) Rs. 8

= Rs. 32,000(A)

Direct Material Price Variance

= (Standard Price/kg. - Actual price/kg.) Actual quantity of material used

= (Rs.8 – Rs. 7.50) 3,600 kgs.

=Rs. 18,000 (F)

6. Direct Labour Efficiency Variance

= (Standard labour hours - Actual labour hours) Standard rate per hour

(64,000 hours - 65,000 hours) Rs.6

= 6,000 (A)

Direct Labour Rate Variance

= (Standard labour rate per hour - Actual labour rate per hour) Actual time taken in hours

= (Rs. 6 – Rs. 6.40) 65,000 hours

= Rs. 26,000 (A)

Variable Overhead Efficiency Variance = (Standard hours for actual output - Actual Hours) Standard variable overhead per hour

= (64,000 hours - 65,000 hours) Rs. 10

= Rs. 10000(A)

Variable Overhead Expense Variance

= Budgeted Variable Overhead - Actual Variable Overhead = 1 6,50,000 - 6,48,000

= 2,000 (F)

	Rs	**Rs**	**Rs**
Budgeted Contribution			3,00,000
Gross margin sales volume variance	20,000	-	
Gross margin sales price variance	96,000	-	1,16,000
			4,16,000
Cost Variances			

Material usage	-	32,000	
Material price	18,000	-	
labour efficiency	-	6,000	
Labour rate	-	26,000	
Variable overhead efficiency	--	10,000	
Variable overhead expenses	2,000	--	
	20,000	74,000	54,000
Total Actual Contribution			**3,62,000**

Verification:

Actual Contribution

= Actual sales revenue –Actual Variable Costs

= Rs. 16,96,000 –[Rs. 2,70,000 (actual material cost) + Rs. 4,16,000(actual labour cost) + Rs. 6,48,000 (actual variable overheads)

= Rs. 16,96,000 – Rs. 13,34,000 = Rs. 3,62,000

(10 Marks)

ANS 3:-

(i) Workings

Factor	Original Standards (ex-ante)		Revised Standards (ex-post)		Actual (110,000 units)	
Material	110,000 units × 2 kgs × Rs. 30	Rs. 66,00,000	110,000 units × 2.25 kgs × Rs. 31	Rs. 76,72,500	250,000 kg × Rs. 31.20	Rs. 78,00,000
Labour	110,000 units × 15/60 kgs × Rs. 300	Rs. 82,50,000	110,000 units × 12/60 kgs × Rs. 300	Rs. 66,00,000	23,000 Hrs × Rs. 300	Rs. 69,00,000

Material

Traditional Variances

Usage Variance = (220,000 Kgs – 250,000 Kgs) × Rs.30/-

= Rs. 900,000/- (A)

Price Variance = (Rs. 30 – Rs. 31.20) × 250,000 Kgs

= Rs. 300,000/- (A)

Total Variance = Rs. 900,000/- (A) + Rs. 300,000/- (A)

= Rs. 12,00,000/- (A)

Planning Variances

Usage Variance = (220,000 Kg – 247,500 Kg) × Rs. 30/-

= Rs. 825,000/- (A)

Price variance = (Rs. 30- Rs. 31) × 247,500 Kgs.

= Rs. 247,500/- (A)

Total Variance = Rs. 825,000/- (A) + Rs. 247,500/- (A)

= Rs. 10,72,500/- (A)

Operational Variances

Usage Variance = (247,500 Kg – 250,000) × Rs. 31/-

= Rs. 77,500/- (A)

Price Variance = (Rs. 31 – Rs. 31.20) × 250,000 Kg

= Rs. 50,000/- (A)

Total Variance = Rs. 77,500/- (A) + Rs. 50,000/- (A)

= Rs. 1,27,500 (A)

Direct Material Usage Operation Variance using Standard Price and the Direct Material Price Planning Variance based on Actual Quantity can also be calculated. This approach reconciles the Direct Material Price Variance and Direct Material usage Variance calculated in part.

Labour

Traditional Variances

Efficiency variance = (27,500 hrs. – 23,000 hrs.) × Rs. 300

= Rs. 13,50,000/- (F)

Rate Variance = (Rs. 300 – Rs. 300) × 23,000 hrs

= NIL

Total Variance = Rs. 13,50,000/- (F) + NIL

= Rs. 13,50,000/- (F)

Planning Variance

Efficiency Variance = (27,500 hrs. – 22,000 hrs) × Rs. 300

= Rs. 16,50,000/- (F)

Rate Variance* = (Rs. 300 – Rs. 300) × 22,000 hrs

= NIL

Total Variance = Rs. 16,50,000/- (F) + 0

= Rs. 16,50,000/- (F)

Operational Variances

Efficiency Variance = (22,000 hrs. – 23,000 hrs.) × Rs. 3/-

= Rs. 300,000/- (A)

Rate Variance = (Rs. 300 – Rs.300) × 23,000 hrs.

= NIL

Total variance = Rs. 300,000/- (A) + 0

= Rs. 300,000/- (A)

Direct Labour Efficiency Operation Variance using Standard Rate and the Direct Labour Rate Planning Variance based on Actual Hours can also be calculated. This approach reconciles the Direct Labour Rate Variance and Direct Labour Efficiency Variance calculated in part.

(ii)

Material Handling

Efficiency Variance = Cost impact of undertaking activities more/ less than standard

= (8,800 orders*- 8,500 Orders) × Rs. 12/-

= Rs. 3,600/- (F)

(*) $\left(\frac{8{,}000 \text{ Order}}{100{,}000 \text{ units}}\right) \times 110{,}000 \text{ units}$

Expenditure Variance =

= Cost impact of paying more/less than standard for actual activities undertaken

= 8500 orders × Rs. 12 = Rs. 124,000/-

= 22,000 (A)

Setup

Efficiency Variance

= Cost impact of undertaking activities more/less than standard

= (2,200 runs* - 2,100 runs) × Rs. 112

= Rs. 11,200/- (F)

(*) $\left(\frac{2{,}000 \text{ runs}}{100{,}000 \text{ units}}\right) \times 110{,}000 \text{ units}$

Expenditure Variance =

= Cost impact of paying more/less than standard for actual activities undertaken

= 2,100 runs × Rs. 112 – Rs. 236,000/-

= Rs. 800/- (A)

(10 Marks)

ANS 4:

(i) Statement of Variable Cost per unit and Fixed Costs under Given Cost Classification Effective for Quarter IV

(ii)

Particulars	Total Fixed Cost (Rs.)	Variable Cost p.u. (Rs.)
Direct Materials (W.N.1)		
A	--------	6
B	----------	5
Production Labour (W.N.2)	90,000	9
Manufacturing Overhead Ex. Depreciation (W.N.3)	72,000	3
Depreciation of Production Machinery	20,000	----------
Administration Expenses	25,000	----------

Selling & Distribution Expenses (W.N.4)	24,000	2

(iii) Flexible Budget of Production Costs for the Quarter IV			
Particulars	**15,000 units (Rs.)**	**18,000 units (Rs.)**	**21,000 units (Rs.)**
Direct Material			
A	90,000 (15,000 units × Rs. 6)	1,08,000 (18,000 units × Rs. 6)	1,26,000 (21,000 × Rs. 6)
B	75,000 (15,000 units × Rs. 5)	90,000 (18,000 × Rs. 5)	1,05,000 (21,000 units × Rs. 5)
Production labour	2,25,000 (15,000 units × Rs. 9) + Rs. 90,000	2,52,000 (18,000 units × Rs. 9 + Rs. 90,000	2,88,000*
Manufacturing Overhead	1,17,000 (15,000 units × Rs. 3 + Rs. 72,000)	1,26,000 (18,000 units × Rs. 3 + Rs. 72,000)	1,35,000 (21,000 units × Rs. 3 + Rs. 72000
Depreciation	20,000	20,000	20,000
Total Production Cost	5,27,000	5,96,000	6,74,000

* Production Labour (21,000 units level)

	Rs.

Variable Cost (21,000 units × Rs. 9)	1,89,000
Fixed Cost	90,000
Overtime (2,000 units × Rs 9 × 0.50)	9,000
	2,88, 000

Working Notes

1. Direct Material Cost:

A = Rs. 60,000/10,000 units = Rs. 6

B = Rs. 50,000/10,000 units = Rs. 5

Direct material cost (variable cost) for material A and B for all the quarters on computation comes to Rs. 6/- and Rs. 5/- for materials A and B respectively.

2. Fixed and Variable Cost Component of production labour cost:			
Particulars	**Quarter I**	**Quarter II**	**Quarter III**
Production (units)	10,000	15,000	5,000
Production labour (Rs.)	1,80,000	2,30,000	50,000

Variable Cost (per unit) = $\frac{Change\ in\ Production\ \ Labour\ \ Cost}{Change\ in\ Production\ \ Units}$

= $\frac{Rs.50,000}{5,000}$

= Rs. 10

Fixed Cost = Rs. 80,000 – Rs. 1,00,000/-

= Rs. 80,000/-

For Quarter II (20,000 units):

	Rs.
Variable Cost of 20,000 units @ Rs. 10 p.u.	2,00,000
Fixed Cost	80,000
Overtime Premium on 1,000 @ Rs. 5 p.u.	5,000
Total Production labour Cost	2,85,000

For Quarter IV (18,000 units):

	Rs.
Variable cost of 18000 units @ Rs 9 p.u. (Rs. 10 x 1.125 x 0.80 = Rs 9)	1,62,000
Fixed cost (Rs. 80,000 x 1.125)	90,000
Total production labour cost	2,52,000

3. Fixed and Variable Cost Component of manufacturing overhead:			
	Quarter I	**Quarter II**	**Change**
Production (units)	10,000	20,000	10,000
Manufacturing Overhead (Rs.)	90,000	1,20,000	30,000

(Excluding Depreciation)			

Variable Cost Component of manufacturing overhead:

$$= \frac{Change\ in\ Manufacturing\ \ Overhead\ Costs}{Change\ in\ Production\ \ Units}$$

$$= \frac{Rs.30{,}000}{10{,}000\ units}$$

= Rs. 3 p.u.

Fixed Cost Component of manufacturing overhead:

= Rs. 1,20,000 – 20,000 units × Rs. 3

= Rs. 60,000

For Quarter IV

	Rs.
Fixed Cost	60,000
Add: 20% Increase	12,000
Total Fixed Cost	72,000

4. Fixed and Variable Cost Component of selling and distribution expenses			
	Quarter I	**Quarter II**	**Change**
Sales (units)	9,000	17,000	8,000

Selling & Distribution Expenses	38,000	54,000	16,000

Variable Cost Component of selling & distribution expenses:

$$= \frac{Change\ in\ selling\ \&\ Distribution\ expenses}{Change\ in\ sales\ units}$$

$$= \frac{Rs.16,000}{8,000}$$

= Rs. 2 per unit

Fixed Cost component of selling & distribution expenses:

= Rs. 54,000 – 17,000 unit's × Rs. 2

= Rs. 20,000

Fixed Cost Component for IV Quarter:

= Rs. 20,000 × Rs. 1.20

= Rs. 24,000

(10 Marks)

ANS 5:

Magical Stay is operating in a business Scenario that is highly competitive and dynamic. Focus of the traditional budget was driven towards achievement of the company's strategic goal, which was profit target of Rs. 1,500 million for the year 2018. Accordingly, the senior management followed roach to budgeting. Most important policy decisions like room rent per day, material procurement, employee hiring, capital investments at each property, advertising and promotional activities are handled directly by the corporate headquarters. Management in

charge of operations at each location only implements it. In a changing business scenario, this has the following shortcomings:

a. Budgets based on these polices may not be flexible enough in a fast –changing business environment. Although it is based on assumptions and expectations of the management has made about the business growth, in a dynamic scenario, it is very difficult to predict the Therefore, targets or benchmarks set by the traditional budgets may become outdated quickly.

b. These budgets were based on business functions like sales, advertising, operations etc. While strategy for these functions is important, they are based on internal benchmarks and assumptions made by the management. However, for the company to be flexible ina changing Environment, the focus should also be on external factors.

c. The management aims to make a yearly profit that is 10% more than the previous year's profit. If previous year profit alone is the benchmark for growth, certain decisions may be shelved because they may decrease current year's profits below target. However, had these decisions been implemented they may have generated value in the long term and ultimately may have been better for earning profits in future years. For example, certain capital expenditures that may need to be undertaken quickly in order to improve customer satisfaction, may not be incurred at all simply because there is no budget for it.

d. Operations management did not have much autonomy since policies were controlled at corporate headquarters. At the same time, they were responsible for achieving the targets out as per the budget. Responsibility without authority creates a negative working environment. Consequently, it might be difficult to retain talented personnel.

e. In order to meet budget targets, managers may try to negotiate for lower sales targets to achieve, more budget allocations to meet costs etc. This does not foster positive business growth. Managers are more intent in meeting targets rather than focusing on business growth. It leads to lower sales than can otherwise be achieved and leads to protection of costs rather than working towards lowering operational costs. It can be concluded that the

traditional budgeting process was more inward looking. Focus on achieving budget target rather than implementing strategies that can create more value the company.

(ii) Following feedback from operations managers, the management given them targets based on growth instead those based on the budget alone. This is the philosophy of "beyond budgeting Below are features of this philosophy that has enabled Magical Stay to achieve better results:

a) It is a more decentralized and participative way of operating a business. Rather than being made responsible for business decisions, which were noting their control, the employees delegated responsibility, combined with the necessary authority to execute decisions.

b) Operations management and the personnel at each location are capable of quickly adapting to changing market scenarios. Likewise, since they interact with the customers directly, it enables them to make quicker decisions to ensure customer satisfaction or identify opportunities to generate more revenue.

c) Targets are based on performance of peer group companies. Benchmarks based on peer performance will be unbiased and reflects the current business scenario better. Due customer's needs and satisfaction automatically gets priority. It is the customers who ultimately drive business growth. Therefore, rather than having an inward-looking outlook, focus is shifted to the external market conditions. Due to autonomy, managers at various locations compete with each other for budget allocation. This channelizes the operational focus challenges from outside competitors rather than having detrimental competition within the organization. At the same time, the targets for the company are also based on guidelines the corporate office. Therefore, there is congregation of goals with the shareholder expectations.

d) Employee morale is also boosted due to the monthly reward and recognition system. It fosters healthy competition among employees.

Since the focus is on growth, beyond budgeting can be a way of achieving better results in challenging business environment.

(10 Marks)