

Total Marks: 40.5

Vritik Jain

Your overall performance is good. Revise all your previous topics at least once in a week rather allocate a day in a week for revision and evaluating your performance. This will help you memorize topics and bind out shortcomings in your preparation.

Value chain analysis helps the business to identify its value added activities.

- Businesses can eliminate non-value added activities and improve quality of goods/service and customer satisfaction.
- Staywell hotel is in the hotel business providing low cost ^{hotel} stay services over the period and is a very profitable business.

9.5 Marks

The Primary activities of Staywell in its value chain are.

(a) Inbound logistics:

- It is related to all activities related to material handling, logistics, from place of supplier to ^{place of} business.
- For staywell, activities relating to food delivery from place of supplier to hotel, handling and keeping of various crockery material, shuttle services, needs to be monitored.
- Staywell must ensure that all goods and services are received on time and without any delay.

you have good concept understanding of this question. improve presentation.

(b) Operations

- Staywell operates low budget hotel.
- The turnover of customer is also fast as their stay period is short.
- Hence, Staywell must ensure that maintain their competency of low cost rooms.
- Since, they have rooms closer to airport,

they must ensure that the shuttle service that is provided is on time.

(c) Outbound Logistics ~~Service~~

- Staywell hotels must maintain their brand image of low cost hotel.
- ~~The~~ All services provided should be value added for customers.

(d) Marketing

- Staywell is in the business for around 10 years and has built a brand image for itself as low cost hotel.
- At this stage, Staywell doesn't require much marketing efforts.
- Customers already know the services provided by Staywell.
- ~~However~~, since Staywell majorly targets business people and travellers who stay for approx 2 days, Staywell may have offseason. Hence at this time, Staywell may provide offers, and do situation based marketing.

(e) Service ~~avoid cutting~~

- Providing good quality service is the main ^{operation} ~~part~~ in hotel business.
- Hotel must ensure that customer gets all the basic requirements that they want. For eg. Hot water 24/7, on demand food, air conditioned rooms, clean and sound proof rooms.

→ Staywell has outsourced the food and cleaning services. Both these services are of great importance for customer satisfaction. Hence Staywell must ensure that quality is maintained.

(ii) → Staywell is in the budget hotel business for past 10 years, and has earned great profits.
→ The business has grown and has presence in 15 cities.

→ Hence it can be said that business is in maturity stage.

→ Staywell has a sizeable market share and due to its brand image and wide presence over 18 properties, it doesn't require much marketing.

→ Also, the competition in recent times has increased which has put pressure on profit margins.

→ Hence, sizeable market share, too many competitors, decreasing profit margin are all indicators of maturity stage of business.

(iii) → Staywell is planning to enter the luxury resorts business.

→ Although, ~~the~~ resort business is in same sector as budget hotels, but the risks and operating style is different.

→ The customer target in resorts business are people who are on vacation with their family, friends.

→ They want luxurious and a long period stay, unlike current customers where turnover of customers is fast.

- For a luxurious stay, customers want spacious hotel rooms, clean and big hotel properties, good inhouse food - both ~~menu~~ menu styled and buffet food.
- Staywell has currently outsourced the cleaning and food services.
- There have been instances where guests have ~~to~~ complained of unhygienic rooms and non-palatable food services. However, since this has never been a problem to Staywell due to fast turnover of customers.
- However, in luxury resorts business, such problems may create issues for the business.
- This will lead to bad brand image, customers will not be satisfied, bad reviews by customers to their friends and families. Ultimately, this will lead to negative branding.
- Staywell must ensure that quality of outsourced services remain high. Staywell may also provide these services inhouse as this will lead to ~~to~~ better control on services.

Q2 (i) Calculation of Contribution per hr, considering limiting factor as Machine M. 10 Marks

	Large panel	Small Panel
S.p	12600	3800
(-) V.C	(4300)	(1160)
Contribution	8300	2640
÷ hrs	14	0.6
Contribution per hr	592.9	4400
Rank	I	II

Total hrs of Machine M.

$$= 13 \text{ hrs } (\rightarrow) 1 \text{ hr} = 12 \text{ hr per day.}$$

$$\times \text{ Availability } 90\% = 10.8 \text{ hrs per day}$$

for 5 days per week

$$\text{and 50 weeks in a year} = 2700 \text{ hrs per annum}$$

→ you have good concept knowledge of this question. Larger panel provides higher contribution than small panels. Hence they should be manufactured first.

However, company has agreed to provide 1000 small panels.

Hence product mix will be as follows:

First, manufacture	1000 small panel	$= 1000 \times 0.6 = 600 \text{ hr}$
manufacture	1500 Large panel	$= 1500 \times 1.4 = \textcircled{2100}$
Total hours available.		<u>2700</u>

Optimum mix

If company had not taken contract for 1000 small panels, company would have manufactured all 1800 ^{large} panels which is being demanded, and produce 300 small panels. However, it is able to manufacture only 1500 ~~panels~~ large panels.

Hence, $\text{Throughput Accounting Ratio of Large panel} = \frac{\text{Requirement time}}{\text{Available Time}} = \frac{1800 \times 1.4}{1800} = 1.2$

Hence TAR of large panel = 1.2.

TAR of small panel = $\frac{300 \times 0.6}{1000 \times 0.6} = 0.3$

Hence, large panels have higher throughput accounting ratio.

(b) Profit of next year.

	Optimum mix	Current scenario
Sale of large panel	1800 unit	1500
Small panel	300 unit	1000 units
Sales revenue	23820000	22700000
(-) Material cost	(8088000)	(7610000)
	15732000	15090000
(-) F.C	(12000000)	(12000000)
Profit	3732000	3090000

(c) To increase the production capacity, Company must
(a) Reduce Unproductive time.

→ Company currently has 10-15% of unproductive time either due to staff absenteeism, routine maintenance, longer break time.

→ Company must take steps to increase the productive time which will ensure continuous production, less piling up of inventory, less lead time.

(b) Completely Utilize Bottleneck resources

→ Company must plan the production as per the ~~100%~~ capacity of bottleneck machine and not as per capacity of non bottleneck machine.

→ This will ensure reduction in piling up of inventory, optimum production, less employee idle time, fast turnover of machine.

(c) Plan production of products that provide higher contribution in lesser time. eg. Large ~~pane~~ panel had higher throughput ~~of~~ as compared to small panel. This result into production of goods that take more time but contribute low to profits.

Q3. To
The Board of Posie

5 Marks

Dear sir,

~~Six sigma is a method to improve~~
the quality of goods.

Six sigma is an ideology to produce the highest quality goods.

The goods should be of such high quality that total defects should be 3.4 per million product. and improve quality of goods.
To implement six sigma, one of the method for existing goods is DMAIC.

DMAIC

→ Define : Company must define the current problems, customer requirements and goals.

→ One of the major problems being faced by customer is difficulty to assemble the goods. 48% of responses have been pertaining to this problem, while 25% of issues are related to wrong goods being delivered or defective goods.

→ Measure : Company must measure the process that is being implemented currently. Company must quantify it and the effect the problems has on company.

- Analyze the process : Company must analyze and find various ways to solve problems. Company must provide customer with a manual that ~~shows the~~ describes the way of assembling product.
- strict control must be placed on delivery system so that the delivery ~~system~~ ^{is on time}.
- Also, company must inspect the material before delivery, so that any defective or missing parts can be identified.
- Improve : → Company must improve the processes.
 - More reliance should be placed on quality and customer satisfaction.
 - Although, companies products are of low cost but product should be of high quality.
 - Company must invest in new technology for improving delivery.
 - Company must post videos on how to assemble products, so that customer can easily assemble them.
- Control : Company must continuously monitor the process and look for areas where improvement can be made.

B part is not attempted.

refer suggested answer sheet for better understanding.

Q4.

(a) The current WIS system used by NJN suffers from below defects.

6 Marks

(i) More manual work

The current system is not completely automated and relies a lot on manual work. The feeding of picking list is also manual which poses threat of wrong data in the system.

(ii) No proper planning and use of IT

The current system is mainly used for data entry rather than control and ERP. The system is not providing any solution with respect to storage efficient operation, storage delivery.

(iii) Not linked to Supplier system.

→ The current WIS is not connected with suppliers system.

→ The suppliers are not able to track their inventory.

→ Also, the communication with supplier is through email rather than using automated software if any discrepancy is found.

(iv) No proper storage and retrieval of data.
Current WIS doesn't provide accurate data to the worker. Due to this, workers don't pick up materials or materials are not found in the location.

(b) Proposal 1 :

- Store high volume item near dispatch area
- If high volume item is stored near the dispatch area, this will reduce the time taken to first store and remove goods.
- Goods can be easily removed when required with less efforts and without disturbing other goods. Hence less ~~more~~ labour time will be required.
- Hence this proposal will help in reducing waste, save labour time, reduce chance of mistake.

Proposal 2 . Shut down additional warehouse

- If additional warehouse is shut, there will be overcrowding of inventory which will add up to current problem.
- There will be less area to store goods.
- Hence this proposal will not solve any problem.

Proposal 3 : Discontinue the cyclical inventory count.

- With current system which is not very dependent to rely on accuracy of data and inaccurate details of storage of inventory, it is important that company conducts cyclical inventory.
- Current WMS system doesn't live track the inventory location and is used as data entry system.
- Hence this proposal will not solve any problem and will not reduce any waste.

Note: The different types of waste ^{in Lean} are

- (a) Overproduction
- (b) Inventory
- (c) Waste
- (d) Motion
- (e) Traveling time

(c) The 5S, are
Sort
Set in order
Shine
Standardize
Sustain

explain 5Ss in the adoption of lean principles during the warehouse reorganization are Structure, Systemise, Sanitize, Standardize and Self-discipline in proper manner.

Warehouse managers daily assessment of tidiness of warehouse on scale of 1-10. This is adequate performance measure for Shine.

Company must keep its workplace clean and safe. Hence measuring it on scale of 1-10 will keep adequate control on cleanliness.

view suggested answer sheet and revise again. this part.

→ Inventory not stored in order of A to Z. Company must keep its inventory in proper pre-determined order and in proper location so that they can easily be found when required.

Total proportion of inventory not found in order will help company to analyze the ~~re~~ effectiveness of predetermined procedures.

3. No. of accidents due to incorrect storage
This is not an adequate measure

Q5. Comparison of Costs under JIT and old system.

Current System

	Jan	Feb	March	April	May	June
Op ⁿ Stock	0	650	690	430	880	1030
+ Purchase	3800	3800	3800	3800	3800	3800
- Sales	(3150)	(3760)	(4060)	(3350)	(3650)	(4830)
Closing Stock	650	690	430	880	1030	0
Avg Stock	325	670	560	655	955	515

If JIT is implemented, there will be no closing stock, hence the cost of carrying inventory will be 0.

Savings in Carrying Cost if JIT implemented.	Total
Avg Stock 22750	46900
39200	45850
45850	66850
66850	36050
36050	257600

Additional Salary paid as Overtime.

Overtime hrs worked = 0	0	260	0	0	1030
Gross hrs extra worked = Overtime 95%	0	0	273.68	0	0
					1084.21

Add'l Salary Cost = 159.5 x extra hrs	4365.2	172932	(216584)
Net Benefit due to JIT			41017

- DATE / /
- If PPL implements JIT, it will result in saving of 4017. ~~£~~
 - M.D. views are correct that JIT is a pull system and by using JIT, carrying cost and other O/H cost reduces.
 - However to successfully implement JIT, PPL will have to invest in a robust infrastructure network that links company's system to supplier network.
 - JIT requires great support from supplier as they should agree to supply quality goods in small quantities.
 - Also, employees should also be trained.
 - Implementing JIT reduces wastage of goods, reduces lead time, reduces inventory and thus reduces working capital.
 - However, company may lose out on urgent orders as there are no buffer stocks.