Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA - SEMESTER– IV EXAMINATION – WINTER 2019

Subject Code: 3549288   **Date: 29-11-2019**
Subject Name: Supply Chain Management
Time: 2.30 PM to 5.30 PM   **Total Marks: 70**
Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q1. Define the following terms   **14**

   (a) Supply chain management
   (b) Third party logistics
   (c) Network design
   (d) Green supply chain
   (e) E-procurement
   (f) Sustainable supply chain
   (g) IT in SCM

Q2.(a) What is supply chain management? What are the forces that have emerged these days to make supply chain management a critical success factors in most industries?   **07**

   (b) Titan offers two brands of watches – Sonata and Fastrack. Sonata is targeted for a mass market while Fastrack is targeted at a premium segment. Should Titan manage both brands with the same supply chains? Should they share warehouses, transportation, supply chain software and other assets or should Titan handle them separately in all areas of business?   **07**

OR

   (b) How important is coordination between cola companies and their bottling plants? Is it necessary to own bottling plants if the cola companies want to achieve a better degree of co-ordination at the local level of operations?   **07**

Q3.(a) What are the main sources of supply chain disruptions? How do supply chain disruptions impact business performance?   **07**

   (b) Why are issues related to supply chain resumption becoming more important in today's business context?   **07**

OR

   (a) Explain the factors that impact make vs. buy decision of a firm?   **07**

   (b) Why it is important to understand the functional role of IT for any supply chain management system implementation project?   **07**

Q4. (a) What is supply chain integration? What are the two type of integration? Explain the bull-whip effect with the help of suitable example?   **07**

(b)In India, the ECR industry initiative was started with a lot of fanfare but it has not made any meaningful progress. What could be the reasons for it? What can be done to improve the chances of any such industry initiative? **07**

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OR

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(a) Explain why dynamic pricing provides higher profits compared to fixed pricing? **07**

(b) What role does forecasting play in the following categories of supply chains: **07**
1. Make to stock
2. Configure to order
3. Made to order

Q5. Case Study

Mann Diesel Sales and Services

Mann Diesel Sales and Services(MDSS) manufactures a variety of engines from 60 to 2500 HP capacity range. Mann Inc. serves its customers worldwide through more than 500 company owned and independent distributor locations in 100 countries and territories and a network of 4,500 dealers and has facilities in 45 countries.

MDSS provides after-market support to customers for all Mann products that includes: in warranty and post warranty, engine repairs and re-con exchange of engines, re-con components and repairs of engine components, supply and maintenance of spares under operations and maintenance (O & M) contract and lastly the supply of allied products such as monitoring and power generation systems. MDSS has worked continuously to fulfill the needs of customers.

MDSS serves its customers through a network of 5 zonal offices, 8 spare parts depots and 75 dealers having 120 service locations. The services extended are warranty claims, engine repairs, re-con exchange of engine, spare parts supply, annual maintenance contract(AMC), monitoring power generation system and supply of allied products.

MDSS has three input channels having different types of supply behavior, lead times and capabilities. It received around 80 percent of the supply in the form of manufactured (35%) and locally purchased spare parts (44%) with the rest of the 21 percent being imported by local and overseas suppliers. Further MDSS has 4 different output channels with a value of 24 percent, 52 percent, 13 percent and 11 percent supplying to 8 depots, 75 dealers, direct customers and MDSS service/region, respectively. Dealership stocking exhibited the worst supply performance. Also, supplier-delivery performance was low, which led to frequent stock-outs at the main warehouse. The responsibility of the customer satisfaction was on dealers and depots. Prior to implementing the SC initiative, MDSS made an inventory of 109 days. The supply was unpredictable and inconsistent. The customer faced longer breakdowns of equipments, longer waiting period for the arrival of spare parts, higher investment in inventories and poor service level. These factors contributed to the loss of customer base to competitors.

To resolve the problem, a team of representatives of MDSS and channel partners were formed. The team included executives from inbound sourcing/materials, manufacturing,

planning, warehouse and field office from company's side, and dealers and customer representatives as external participants.

MDSS then segmented spare part items(9,500 SKUs) based on volume, value of sales and service level. They categorized the parts into A,B and C types. They have also re-defined the service level as ex-stocks or against order. Customer break points, that is, all regular maintenance and running repair parts, should be available ex-stock from dealership point and they can be ordered 7-15 days in advance. In addition, the supply chain is expected to service emergencies within 2 days. New process design suggested by SCM team, that is, weekly sourcing and shipment to dealers for A and C category of all parts, as per the segmentation was implemented. A framework was made to set target inventory to 3 weeks of average consumption at each dealership point, where dealers were expected to report about inventories on the specified day of the week, creating POS(point of sales) information available at MDSS. They used weekly bucketed information of sales for generating a forecast from desktop tools with the lead time for A, B and C category parts. The safety stock levels for all parts were calculated every week, considering the variability during the last 30 weeks. For releasing firm orders , a lead time was scheduled in the target week. Also, the next 4 week's forecast was worked out providing visibility for 4 weeks. They started using a new measure called CLIP(committed line item performance). CLIP is a binary indicator of whether or not a line has been fulfilled to the extent of 90 percent plus target quantity. KPI measuring various CLIP parameters related to suppliers, order processing, dispatch and forecasting were fixed up.

In the warehousing and logistics, they started scheduling allocations on a daily basis, and agreeing on fixed delivery printing time played a major role in putting in place the picking and packing in right boxes and movements to shipping area. They introduced automated storage and retrieval system (ASRS) at the warehouse to improve warehouse efficiency. In outbound logistics MDSS undertook a Six Sigma project to capture the increased opportunity in logistics and distribution network .In addition to the above; MDSS installed ERP as a part of its capability enhancement efforts. This system was multi-organizational and MDSS was one of the organizations included in the programme.

Q1. Map the spare parts supply chain of MDSS?   **07**

Q2. Discuss the problem faced by MDSS in its spare parts supply chain?   **07**

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OR

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Q1. How were the problems sorted out through the supply chain initiatives?   **07**

Q2. The combined efforts made my MDSS were effective? Analyze?   **07**

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