



Post Graduate Diploma in Materials Management

Paper 17

ADVANCED SUPPLY CHAIN MANAGEMENT

Date: 29.12.2018  
Time: 2.00 p.m. to 5.00 p.m.

Max. Marks 100  
Duration 3 hours

Instructions

1. The question paper is in three parts
2. Part A is compulsory. Each sub question carries one mark.
3. In Part B answer any 3 questions out of 5. Each question carries 16 marks
4. Part C is a case study with sub questions and it is compulsory.

Total marks-32  
Total marks-48  
Total marks-20

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PART A

(32 x1 = 32 marks)

(Compulsory)

**Q.1. Fill in the blanks. (Please do not reproduce the statement)**

- i) A \_\_\_\_\_ is described in terms of its inputs and outputs.
- ii) \_\_\_\_\_ time is the total time from the beginning to the end of process.
- iii) Buying and selling of products or services over electronic system such as internet is known as \_\_\_\_\_
- iv) \_\_\_\_\_ is a type of information system that facilitates communication within a firm. .
- v) Supply chain \_\_\_\_\_ is the cost of making and delivering a product to the customer.
- vi) Govt. purchase of specialized items is usually made through \_\_\_\_\_ bidding.
- vii) \_\_\_\_\_ means the money consideration for sale of goods.
- viii) It is not possible to provide the same kind of service levels to all the \_\_\_\_\_.

**Q.2. State True or false (Please do not reproduce the statement)**

- i) Organization achieves supply chain integration by extending the scope of integration outside the company to embrace suppliers and customers.
- ii) Wal-Mart has been a pioneer in the build to order cycle.
- iii) Push processes are initiated and performed in anticipation of customer orders.
- iv) All agreements are contracts.
- v) Downtime costs are part of ownership costs.
- vi) Data mining is retrieval of required data from a storage device.
- vii) E collaboration is the use of internet based technologies to facilitate continuous automated exchange of information among supply chain partners.
- viii) Decentralized system leads to global optimization.

**Q.3. Expand the following**

- i) POS
- ii) ACR
- iii) WAN
- iv) PTP
- v) DRP
- vi) PML
- vii) GPS
- viii) DSS

**Q.4. Match A and B**

<b>A</b>	<b>B</b>
i) Forrester	a) Decoupling
ii) Retailer	b) Custom clearance
iii) VED classification	c) Risk pooling
iv) Delayed differentiation	d) Protection in future
v) Global sourcing	e) Supply chain stage
vi) Parallel processing	f) System Dynamics
vii) Centralized inventory	g) Criticality
viii) Hedging	h) Postponement

**PART B**

48 marks

**(Answer any three from Q5 to Q.8. Each question carries 16 marks)**

- Q. 5. a) Explain the various stages in a supply chain.  
b) Explain the cycle view of supply chains.
- Q.6. a) Explain the levels in the evolution of supply chain information system.  
b) What is pull-push based supply chain? What are its advantages and disadvantages.
- Q.7 a) What are the advantages and disadvantages of third party logistics?  
b) What are the goals of supply chain information technology?
- Q.8. a) Explain total cost of ownership.  
b) What are the contents of sales of goods act.
- Q.9. Write short notes any four
- a) Electronic Data Interchange (EDI)
  - b) Supply chain process Integration
  - c) Bullwhip effect
  - d) Mass customization
  - e) Green supply chains

**PART C**

20 marks

**Q.10 Case Study (compulsory)**

Maruti Udyog Limited (MUL), the leading manufacturer of cars in India is a leader in supplier relationship management. Its turnover was Rs 12,481.00 crores and its profit before tax was 1750 crore in 2005-06. It sold 5,61,822 vehicles in 2005-06 and captured a market share of over 55 percent. It deals with about 7100 components for its eleven major models. Seventy percent of its suppliers by numbers are located within 100 km radius of its Gurgaon plant. They meet more than 80 percent of Maruti's requirement by value.

Maruti has 220 approved vendors who supply the major components. The top 80 vendors supply 86 percent by value of their purchases. The rest of the vendors supplies only 14 percent. It has also signed joint ventures with a large number of its vendors. Of the 86 percent components

supplied by vendors, joint ventures supply only 34 percent; the rest of the 52 percent by value is supplied by other vendors. These 80 vendors are considered strategic partners. Only 20 to 30 of them are Maruti joint ventures.

With strategic partners, Maruti has a number of programmes. Their emphasis is on vendor productivity and quality. Maruti take a major role in improving vendor productivity. It organizes *Junkai VA* or cost workshops with its vendors on an ongoing basis. *Junkai* is a Japanese word which basically means “visiting”. It has 3 components called three G- *Genmab*, *Gembutsu*, and *Genjitsu*.

*Gemba* means taking a look to see what is happening at the site. *Gembutsu* means examining the affected piece to understand what exactly the defect is. *Genjitsu* means discussing under what conditions this has happened – something like a brainstorming session. Typically, a team from Maruti, along with the supplier team visits the supplier’s shop floor, has look around, noting down points. They then have a brainstorming session at the Maruti office. At the end of the brainstorming, they come out with various points relating to improvements in productivity, quality and cost.

Maruti also has constituted a group called Maruti Centre for Excellence. This is a team which continuously goes to suppliers to upgrade them. It audits the workings of its suppliers and comes out with a spider chart. The spider chart has 22 points. Each vendor is evaluated on these 22 points. Additional business is promised on the next new model to vendors who score over 60 percent on the spider chart. Every vendor really tries to make sure that he goes above this mark.

Apart from this, it has also started second tier improvement in a very big way. This was the latest initiative it took up a year ago. The result has been that the second tier vendor’s quality has also gone up. It has also started ‘green initiatives’. Accordingly, all packing has been converted into reusable packing. It recently introduced a practice to check the pollution levels of all the trucks getting into Maruti; if pollution levels were not right, then the trucks were sent back. This made its vendors understand that Maruti cared about the environment.

Further, it follows the Kaizen theme, which means to make it smaller, fewer, lighter, shorter, and beautiful. It follows this theme in its plant and has been continuously teaching this practice to its vendors. It conserves the usage of material and yield improvement. Moreover, along with CII and USAID, it has started a programme to help its suppliers get ISO 14000 certification. It has also started a programme on ELV compliance. Though this is not required in India, the idea is that by the time the requirement comes to India, Maruti’s vendors will all be sufficiently equipped to take care of it. It also has a vendor finance cost reduction programme. It has lined up with banks to see that the loans of its suppliers are transferred to lower interest rates. Through these initiatives Maruti has become more agile and leaner.

In 2005-06, Maruti trained around 16 vendors and ultimately the savings of man hours per day came to 1580 man hours, which has resulted in a saving of over one crore rupees per annum. It was able to reduce component costs by 29 percent on the Alto alone from 2001 to 2005.

**Questions:**

- 1) What are the characteristics of MUL’s supply chain?
- 2) What is the role of the centre of excellence in improving supply chain performance?
- 3) Discuss the kind of relationship and the methods adopted by Maruti to achieve supplier relationship?

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