



INDIAN INSTITUTE OF MATERIALS MANAGEMENT

July 2019

Post Graduate Diploma in Materials Management - 3 years

Paper 17

ADVANCED SUPPLY CHAIN MANAGEMENT

Date: 26.07.2019

Max. Marks 100

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

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

PART A

(32 x1 = 32 marks)

(Compulsory)

Q. 1. Fill in the blanks.

- a) Plan, Source, Make, Deliver and Return are the stages of a _____ .
- b) Movement of goods from supplier to consumer (internal as well as external) is a _____ flow of a supply chain.
- c) In general transportation, the logical route between the point of shipment and the point of delivery is called a _____ .
- d) A _____ chain is a system of organizations, people, activities, information, and resources involved in moving a product or service from supplier to customer.
- e). In _____ Analysis, classification is dependent on the user's experience and perception and the relative importance of certain items to other items, like in spare parts.
- f). _____ classification is based on the annual consumption value of the stock.
- g). Total amount of goods and services demanded in the economy is called the _____ demand.
- h). _____ is the transportation of relatively small freight.
- i) For transporting goods within a country or across borders which are not very far away _____ is very useful.

- j) The use of an outside company to perform all or part of the firm's material management and product distribution functions is called _____
- k) The ability to rapidly and cost effectively adapt to market changes with no significant negative impact on quality or dependability is _____.
- l) Marketing channels are part of the _____.

Q. 2. State True or False

- a) The movement of material associated with storing, transporting, and distributing goods to its customers is inbound logistics.
- b) The processes of receiving, storing and distributing raw materials for use in production is outbound logistics.
- c) Movement of finished products to customers is physical distribution.
- d) Under push supply chain, the logistics are driven by long-term projections of customer demand.
- e) A lead time is the latency between the initiation and execution of a process
- f) Dual distribution is a type of marketing channel.
- g) A strategy that has a wider competitive scope is a focus strategy.
- h) Manufacturing process of the firm is managed by MRP.
- i) A hedge is an investment to reduce the risk of adverse price movements in an asset.
- j) In differentiation strategy, the company's supply chain develops the ability to deliver high-quality products or services.
- k) Need recognition is the beginning stage of the procurement cycle.
- l) Production at lower cost than the competition leads to cost advantage.

Q. 3. Match the following:

A	B
1. ABC Analysis	a. Commercial Tax
2. LIFO	b. Barcode system
3. UPC-A / EAN-13	c. Inventory classification methods
4. Grey Box	d. Differentiation strategy
5. FSN / VED	e. A Pareto Technique
6. Uniqueness of product dimensions	f. Stock Valuation Method
7. Dairy Industry farmers	g. Testing technique
8. Excise duty	h. Informal Value Chain

PART B

48 marks

(Answer any three from Q.4 to Q.8. Each question carries 16 marks)

- Q4.** A) Explain the principles of supply chain management with suitable examples.
B) Explain the difference between a value chain and a supply chain with examples.
- Q5.** A) Explain the determinants of supply chain performance. Give examples.
B) Explain the impact of customer needs on supply chain effectiveness.
- Q6.** A) What are the functions and objectives of supply chain management?
B) What are your thoughts about the future of supply chain management?
- Q7.** A) Discuss the essential elements of supply chain integration.
B) Explain any two performance measures to assess supply chain effectiveness.
- Q.8.** Write Short Notes **any four**. **4 x 4 = 16 marks**
A) Blue-Whip Effect
B) Third Party Logistics
C) Inbound Logistics
D) Supply Chain Automation
E) Demand Forecasting

PART C

20 marks

Q.9 Case Study (compulsory)

Glaxo Smithkline (GSK) spends about GBP 800 million to develop a drug. Its efforts and money will go waste unless its customers get the product in time without any defects and have no difficulty in handling the package. In other words, every facet of GSK's supply chain should be up to the mark.

To counter the challenge of supplying to a multifaceted US market and low volume niche markets, GSK implemented the late pack customization programme. While typical production runs were up to 30,000 numbers for cost effectiveness, GSK could effectively produce as low as 100 or 500 packs at a time with this programme. For instance, basic boxes were volume filled with blisters at the pack site and shifted to the two distribution centres in Europe. At these centres, clear labels were printed online with country related information and applied automatically. Even country specific folded leaflets were attached automatically. Quality was ensured with three two-dimensional bar codes, one pre-printed on the box, the other pre-printed on the leaflet and another printed online on the label. Online inspection on the codes could be performed at one go owing to their inline position.

Countering Packaging Complexities Global Pack Management

With more than 36,000 SKU's and a six-month life cycle of its products, handling packaging specifications, associated graphics and artwork changes was an enormous task. Standardizing the packaging changes was another major obstacle. GSK developed the Global Pack Management (GPM) to handle this complexity (currently in use for its prescription products). The GPM programme focused on four major issues:

1. *Change Standardization*- Packaging changes are standardized using global training and implementation programmes.

2. *Developing a pack catalogue*- All employees have access to a central and current set of all GSK's packaging information. This helps foster idea sharing while achieving packaging optimization simultaneously.

3. *Central artwork development*: Accordingly, only four centres (strategically chosen at US, UK, Italy and India) were to service the packaging graphic needs of all products. Earlier, 250 centers performed the same activity.

4. *Uniform and centralized information technology*- This helps streamline workflow. Since all the employees use the same central applications (For example, GSK adopts the graphics industry standard Apple Macintosh computers and software) it ensures uniformity. There are no serious encryption issues, if packaging artwork is transferred between similar standard systems.

Paperless labelling/electronic leaflets

According to FDA regulations, all drug companies in the US must print and attach labels to every product going into the market. So, any label or leaflet change can take up to a year to reflect with pharmacy stores first emptying existing inventory. Working along with the Pharmaceutical Research and Manufacturers of America (PhRMA), GSK has been striving hard to push forward its paperless labelling initiative. The aim of paperless labels and electronic leaflets is to prescribe information to healthcare professionals electronically. This will help instant updating as any change in the leaflet/label is reflected automatically. Patient safety is the ultimate goal of GSK.

Online Printing

GSK is working on developing online printing that matches the speed of the packaging line and prints at the desired quality level. Efforts are on to keep costs of online printing down.

Countering Supplier/Outsourcing issues

GSK realizes the importance of finding and qualifying multiple suppliers to avoid any supply disruptions. For instance, for its popular Advair Diskus device, GSK has three suppliers, two in Europe and one in the US. The goal is to have enough capacity globally with all suppliers producing identical components with identical tooling on identical machines. Meeting strict regulations is of prime importance. Communication can play a vital role in establishing coordination among multiple suppliers. GSK uses an electronic CAD package. The CAD package has drawings indicating minor details and any subsequent or ongoing review to every component to overcome communication gaps if any.

Countering Operational/production challenges

GSK limits the number of equipment suppliers to minimize downtime. For instance, on one packaging line it has one supplier Schubert's four robotic systems. The robots do the cartooning and case packing as well. In response, Schubert offers GSK the benefit of assigning a dedicated team that works for GSK alone. The team also has an office in GSK's plant itself. Healthy supplier relationships have helped GSK minimize downtime. Moreover, all equipment from a single supplier facilitates a better understanding of the equipment functioning, than having disparate machines for same tasks. Thus training costs are also less.

Furthermore, GSK uses a central TIPS production management system that minimizes downtime. The system tracks downtime data allowing for ongoing production improvements. GSK is able to maintain product quality with vision cameras and online inspection using bar code scanners. GSK prefers to be the rapid follower instead of being bleeding edge with respect to technology adoption. Instead of using 'packaging only' lines, GSK uses lines, which are integrated to do final assembly and packaging also.

GSK's efforts as illustrated above have been successful. Organizations can follow its Supply Chain Management strategies as they truly extend the value of product, packages, plants and people

Questions:

1. Discuss the major initiatives associated with the supply chain of the company.
2. What are the strategies that you would suggest to the company to become proactive in ensuring supply chain efficiency?
