

[Time: 03.00 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. Q.1 is compulsory and carries 20 Marks.
 2. Q. 8 is compulsory and carries 15 Marks.
 3. Attempt any four questions from Q.2, Q.3, Q.4, Q.5, Q6 and Q7. Each of these questions carry 10 Marks.
 4. Figures to the right indicate full marks.

Q.1 Solve the Case Study given below: (20)

NETFLIX, at almost 20 years old, has more than 44 million subscribers worldwide and is now the most popular subscription media business in the United States. In the fourth quarter of 2013, Netflix had estimated total revenue of nearly \$1.2 billion. But the road has not always been so smooth for Netflix. In 2011, Netflix dramatically changed its business strategy from one based on the physical distribution of DVDs and Blu-ray discs, to one based predominantly on the direct streaming of entertainment content across the Internet that impacted on Netflix's supply chain strategy.

Before 2011, Netflix's supply chain strategy mixed information technology and physical logistics to replace traditional brick-and-mortar stores, such as Blockbuster. The Netflix Web site not only served as a virtual storefront but also used customized software to track its subscribers' preferences and make recommendations based on an individual's viewing habits. Enough subscribers responded to these recommendations that Netflix could keep many of its older DVD titles circulating and continuing to earn revenue, while lowering demand somewhat for the "latest" releases.

The second major piece of Netflix's supply chain, its distribution system, was just as critical to the firm's success. By operating several distribution centers around the United States right from the start, the company was able to accept, inspect, and clean DVDs quickly and ship them out just as fast, so customers experienced very short wait times between placing their orders and receiving their DVDs. By 2011, Netflix had about 60 distribution centers in operation.

For the most part, Netflix's traditional supply chain, with its one-day delivery and same-day processing, was effective. Its inventory system not only automatically tracked incoming DVDs that customers had returned, it also emailed each customer a confirmation of receipt and alerted the appropriate shipping center to send the next title on that customer's list or queue. It also ensured that subscribers weren't sent more DVDs than they had paid for (customers were limited to a certain number of DVDs per month). However, a number of factors affected which DVDs a subscriber got and when they got them. If there weren't many

copies in the system, the company would ship one from a center that was far from where a subscriber lived. Another was the popularity of the movies. Often there were fewer copies of a newly released film than there were people who wanted to see it. And the shipping process, which involved multiple handling steps, sometimes resulted in damage to the DVDs.

In retrospect, all the problems listed earlier stemmed from the fact that Netflix's traditional supply chain tied the delivery of an intangible service (information content) to a tangible item (a DVD or Blu-ray disc). With this in mind, starting in 2007 Netflix made a conscious effort to take advantage of advances in information technology and move to a truly virtual supply chain that uses the Internet to both manage subscribers' accounts and stream content directly to them.

Such a supply chain has numerous advantages, including:

- Subscribers can receive content immediately.
- Netflix no longer needs to manage an expensive network of distribution centers. In addition to cutting costs, this also allows Netflix to quickly expand into any market that has Internet access.
- Netflix no longer needs to make decisions regarding how many DVDs or Blu-ray discs to order or where to stock them.

But this new supply chain solution is not without its risks:

- Upstream supplier risks. Netflix depends on entertainment companies to provide the content subscribers want, yet many of these companies have concerns about having their content—particularly newer shows and movies—delivered in electronic format. If entertainment companies refuse to license their products or provide only limited access to their “best” content, this could undermine the quality and range of Netflix's offerings.
- Downstream distributor risks. Instead of having the U.S. Postal Service deliver discs, Netflix's new supply chain strategy depends on Internet service providers (ISPs), such as cable companies and satellite network providers, to deliver the content. Many of these providers have been arguing that Netflix or its subscribers should pay higher fees due to the higher levels of traffic they generate. And even if these issues are resolved, higher traffic levels could result in overloaded networks and service interruptions.
- Competitive risks. Today, Netflix faces a new set of competitors, including Amazon, Google, and Hulu, and possibly new companies that have not yet entered the market. Nevertheless, Netflix provides an excellent example of how supply chain strategies can provide firms with a distinctive competitive advantage and how these strategies need to adapt to changes in technology and the marketplace.

Q.1. What are major operations management problems faced by Netflix?

Q.2 What were some of the key structural and infrastructural elements that defined Netflix's supply chain strategy before 2011? After 2011?

Q.3 How have the customers' order winners for Netflix's customers changed over time? Would today's customer be satisfied by the delivery performance or selection of Netflix's "old" supply chain?

Q.4 At the end of 2013, Netflix still had 39 distribution centers mailing DVDs to seven million subscribers, although the latter number had fallen by half from the prior year. Should Netflix abandon its physical distribution system altogether? Why or why not?

Q.2 **Any two from (a) or (b) or (c):** **(10)**

- (a) Discuss the scope of Operations Management.
- (b) Explain the Volume-Variety Matrix for production.
- (c) What are the differences between Products and Services?

Q.3 **Any two from (a) or (b) or (c):** **(10)**

- (a) Explain the four levels of product customization.
- (b) Explain the Volume-Variety Matrix for production.
- (c) Discuss anyone layout decision model.

Q.4 **Any two from (a) or (b) or (c):** **(10)**

- (a) Explain the factors influencing facility location.
- (b) Discuss the Alfred Weber's Theory of the Location of Industries.
- (c) What do you understand by service layout?

Q.5 **Any two from (a) or (b) or (c):** **(10)**

- (a) Discuss with one example any two techniques of inventory control.
- (b) An oil engine manufacturer purchases lubricants at the rate of Rs. 42 per piece from a vendor. The requirements of these lubricants are 1800 per year. What should be the ordering quantity per order, if the cost per placement of an order is Rs. 16 and inventory carrying charges per rupee per year is 20 paisa?
- (c) What is aggregate planning? What are the variables used in aggregate planning?

Q.6 Any two from (a) or (b) or (c): (10)

- (a) Highlight the difference between chase strategy and level production strategy.
- (b) What do you understand by planning time fence?
- (c) What are the inputs to and outputs from MRP?

Q.7 Any two from (a) or (b) or (c): (10)

- (a) Discuss the characteristics of single machine scheduling problem.
- (b) What do you understand by mean flow time and mean tardiness.
- (c) Explain the features of any one type of schedule.

Q.8 Any three from (a) or (b) or (c) or (d): (15)

- (a) Safe Stock
- (b) Service Design
- (c) Method Study
- (d) Motion Economy

Q.P. Code: 00001101