These questions and answers should help you to think about, revise and consolidate the material covered in Lecture 1.

1. A typical supply chain has a feed forward flow of material and a feedback flow of information. Explain why this is the case.

2. Some supply chains are very complex involving many companies, others are simpler. Give examples of each and explain what the planning challenges might be in each case.

3. Some supply chains are mature and slow to change whilst others are new and still evolving. Give some examples of each.

4. Why does Apple need effective supply chain planning and management? .

5. Provide a definition for supply chain management and give some reasons why it is often very challenging for companies to manage their supply chain successfully.

6. What is a flow shop? Why are flow shops often preferred in production operations?

7. What is the difference between a Make-to-Order (MTO) system and a Make-to-Stock (MTS) system. What are the advantages and disadvantages of each approach? When might each approach be applied to meet demand?

8. What is the Customer Order Decoupling Point (CODP) and how does its location change in different kinds of production systems and supply chains? (This is covered in the online session).

Sample answer

Q7. What is the difference between a Make-to-Order (MTO) system and a Make-to-Stock (MTS) system. What are the advantages and disadvantages of each approach? When might each approach be applied to meet demand?

Differences

The primary difference between MTO and MTS is the position in the operational system from where a customer order is satisfied.

In an MTS system a customer order is satisfied from finished stock. In an MTO system production is not started until a customer order is received. Although this is a simple idea to grasp, it has many implications.

Advantages and disadvantages

There are advantages and disadvantages to each approach.

The primary advantage of an MTS approach is that it enables rapid response to customer demand – the product is already made. However, MTS relies on accurate forecasting of what customers will purchase.

The primary advantage of MTO is that it avoids holding stock of finished products that may not sell. However, the customer must wait for the product to be produced. MTO systems hold stock of raw materials only.

When is each approach used?

Typically, MTS is used for fast-moving, high-volume consumer products, e.g. simpler products of relatively low value, such as grocery food products. There is less risk of products not selling than would be the case for more complex products.

MTO is typically used for slower moving, more complex and specialised products with lower volume and higher value, (e.g. industrial machinery products). The customer is often prepared to wait for these products to be produced.

There are other production approaches such as Assemble-to-Order (ATO,) which is somewhere between MTS and MTO., and Engineer-to-Order (ETO) where the customer also specifies or is involved in designing a product that is then made to order.

Note that some companies will use a combination of these approaches for different products.