

K.J. Somaiya Institute of Management Studies and Research
Operations and Supply Chain Management
Final Examination PG (Exec 2018)

Max Marks : **50**
21/09/2018

Time : **3 hours**

Date :

Instructions:

Answer any 3 questions (from Q1 to Q4)

Question 1 to 4 carry 10 marks each.

Q 5 is compulsory and three sub questions carry a total of 20 marks.

Please write the answers in point form.

1. How can we divide the supply chain into strategic, operational and tactical aspects?
2. Planning and scheduling plays a vital role in company's operations. Please elaborate the MRP process.
3. Pl write Short Notes on any three of the following
 - A) Job shop V/s Flow Shop
 - B) Independent and dependent demand
 - C) Level and Chase Production Plan
 - D) Backward and Forward Scheduling.
4. Write short notes on any three of the following (5 marks each):
 - (a) Differences between Supply Chain and vertical integration
 - (b) Costs associated with Supply chain
 - (c) ABC Analysis of Inventory
 - (d) Bill of Materials and Routing
5. **Case Study**

Introduction: The Indian Bearing industry makes around 500 types of bearings as against over 30,000 types of bearings being used by the Indian industry. Bulk of these are only of standard types and are mostly used in low-technology areas like fans, electric motors, water pumps, and by the automotive sector. Almost all the units have foreign collaboration. **Indian Bearings' market size is estimated at Rs. 57 billion.** Sales of the organised bearing industry in India are estimated at Rs. 25.0 billion.

Major Demand Determinants

Bearings of various types and sizes are used for different applications.

The major applications are as follows:

Automobiles

Railways

Electrical Motors

Electric Fans

Diesel Engines

Pumps

Machine Tools

Textile machinery and

Other heavy industries

- Steel Plants
- Sugar Plants
- Process Plants
- Heavy Engineering Industries
- Heavy Earth Moving Equipment
- Cement Plants
- Power Generation Units

The demand for bearings can be clubbed under following Categories:

A. Original Equipment Manufacturers (OEM) Market

The OEM market for bearing represents the demand arising out of the original vehicle and industrial manufacturers. The demand for the OEM market directly depends upon the growth in user industry. OEM market accounts for 40% of total demand of bearing industry. This market is characterized by requirements of high quality, stringent delivery norms and lower margins.

OEM's which have been facing price competition in their own markets; continue to exert price pressure on the local bearing suppliers. The bearing capacity available in the country is in excess of demand, resulting in price reduction. The OEM bearing market is likely to witness better days ahead on account of upswing in automobile industry and manufacturing sector.

B. Replacement Market

OEM demand is mostly generated in Automobile, Machine manufacturer, Plants manufacturers, where in the bearings is used as part of the new equipment or machinery.

Replacement Demand is the after demand where as a part of the maintenance of the machines or rotating machine, the bearings are replaced by new bearings after it is failed as natural life deterioration / wear or tear or due to premature failures and need replacement The replacement market represents the demand arising on account of replacing the used and worn-out bearings.

The size of replacement market is dependent on equipment population and frequency of maintenance. Replacement market accounts for 40% of total demand for bearing industry. The margins in this market are relatively higher placed as compared to OEM market.

The replacement market is highly price sensitive and has a higher share of unorganized players and cheaper imported bearings. The entry of China, for example, into world markets has not only created additional capacity, but also lowered prices of some bearings to levels not seen since the 1960s.

The China factor has also cut into some of Japan's exports, thus impacting Japan's in country capacity (as Thailand and Singapore did with small ball bearings) and the United States by lowering general price levels. Eastern Europe, India, and other areas are developing in a similar

pattern.

In addition, bearing materials and bearing quality have improved and extended bearing life. Longer bearing life reduces the demand for replacement bearings, and thereby, further contributes to surplus capacity. Lastly, the closed Japanese market contributes to overcapacity in slow economic times elsewhere in the world.

About the Company: XYZ is one of the largest quality bearing manufacturers, with a capacity of 30mn bearings and has an annual turnover of INR 175 crores.

It has more than 20 consignment agency points (Ware house) and 170 stockist spread all over India to serve the needs of an ever increasing quality conscious buyer, both in the OEM market as well as in the replacement market. The consignment agent serve as the company's representative at the various locations where the product is stocked and further distributed

It is an Indian company and has limited technology backup with some MNCs. It is a well established brand and is technology intensive.

It faces major competition from international players as major automobile companies venturing into India mostly go for foreign tie-ups to supply bearings though XYZ offers the lowest rates in the market.

Its products include:

- 1) **Self - Aligning Clutch Release Bearings**
- 2) **Double Row Self - Aligning Ball Bearings**
- 3) **Hub Unit Bearings**
- 4) **Taper Roller Bearings and many more.....**

Main Limitations:

- Limited Technology backup with MNCs.
- Company does not have enough cash reserve to invest on capacity expansion or to enter strategic collaboration and is looking for avenues to expand its growth through means other than CAPEX.

Questions

- a) **As Chief Supply Chain Officer of the company how would go about setting up your supply chain for the finished bearings (10 marks)**
- b) **What problems do you envisage in the execution of supply chain of bearings. (10 Marks)**
- c) **Conduct SWOT analysis of the company and develop a strategy for aligning the supply chain with the available resources. (10 Marks)**