

PGDM (International Business), 2019-21
International Supply Chain & Logistics Management
IB-405
Trimester – IV, End-Term Examination: September 2020

Time allowed: 2 Hrs 30 Min

Max Marks: 50

Roll No: _____

Instruction: Students are required to write Roll No on every page of the question paper, writing anything except the Roll No will be treated as **Unfair Means**. All other instructions on the reverse of Admit Card should be followed meticulously.

Sections	No. of Questions to attempt	Marks	Total Marks
A	Minimum 3 question with internal choices and CILO (Course Intended Learning Outcome) covered Or Maximum 6 questions with internal choices and CILO covered (as an example)	3*10 Or 6*5	30
B	Compulsory Case Study with minimum of 2 questions	20	20
			50

Section A

Q1. A. Just in Time (JIT) brings down the inventory levels for manufacturers, but at the same time increases the cost of holding inventory for suppliers. Why would a supplier agree to such an arrangement? (5 Marks) CILO2

Q1. B. Why is quantification of SCM performance results required? In an international supply chain are there some areas where quantification is not possible, if yes, identify such areas and if, no, then why is it so? (5 marks) CILO 2

Q2.

1. In the global tuna supply chain, harvesting for the cannery business became extremely competitive in the late 2000s and early 2011s, when U.S. and Japanese lead firms decided to vertically disintegrate their operations due to the falling price of tuna. Rather than engage in the less profitable harvesting activities, the U.S. and Japanese multinationals and trading companies firmly held onto the highest value-adding segments—distribution and retailing—and formed tightly weaved, inter-firm production networks with their suppliers, rather than direct ownership. Why do the lead firms resort to such practices? What factors should be the focus of the actors in such global supply chains (particularly to packed seafood markets) to improve their positions over the period? CILO 1 (5 marks)

2. In the smartphone industry, each of the early pioneers developed smartphones with different sets of features, components and operating systems in China. However, when BBK began to develop smart phones for multiple smartphone manufacturers, the main technology used in phones became more generic, decreasing the uniqueness of the technology related to each individual phone brand. This envisages the possible changes in the supply chain

Turn Over

governance structure. As a consultant to BBK kindly suggest the possible outlook of changes that BBK should adopt for future markets? CILO 01 (5 marks)

Q3. For a large FMCG company, the broad parameters of their products are that they are packed in cartons and 45 cartons can be used to build a pallet of 1.2 X 1 X 1 meter. They had 200 stock keeping units (SKU) most of which were fast moving. All cartons as well as individual packs are bar coded. For the mother warehouse to distribute in the national capital region (NCR), they ideally want a warehouse in Haryana, say about 30-50 KM from the center of Delhi, and for Delhi a sales depot within the Delhi state in the outskirts, where warehouse rental will be cheaper.

Volumes are 13000 cases in mother warehouses. 13000 cases went out of the warehouse every day on 25 days working. The depot at Delhi would have 7500 cases in and 7500 cases out. Inventory policy was simple- seven days of rolling stock and seven days of safety stock in the depot and 15 days in each mother warehouse. They would ideally like completely racked warehouses with 1+4 pallet high with reach stackers, they also like to have levelers in the loading and unloading docks to improve productivity. Kindly, advise them on preparing the list of points they must focus upon while getting in negotiation with 3 PI if they go for a stand-alone warehouse option. (Make all necessary and suitable assumptions in giving your solutions and list out your assumptions clearly)? CILO 03

Section B

The chief executive officer (CEO) of the European tyre company (ETG) was on a visit to India and was discussing the plans of expansion in India with their distributors. ETC is a very large international tyre manufacturing company with a great product range starting from tyres of two wheelers to cars to aircrafts and serves a large number of customers who are original equipment manufacturers (OEM) such as manufacturers of cars and trucks.

They also manufacture tyres of varying quality such as radial tyres, tubeless tyres, steel-belted radials, and normal nylon-corded tyres.

They were marketing specialty tyres in India through their agents, who were also big Indian manufacturing companies. In view of the growth of Indian market by around 12 per cent every year as well as increasing market share for the truck and car manufacturers for whom they were global suppliers, the management of ETC felt that they should aggressively target the Indian market for all types of tyres.

The company's distributors also agreed with their views and as they had reached their capacity limitations in existing plants. They were game for a new plant by ETC as a joint venture. ETC had laid out its conditions that they would hold majority stake (51 per cent) and the management would be under their control. These conditions were acceptable to the Indian partners.

The company also agreed that the priority should be for manufacture of tyre for commercial vehicles as the market had a huge replacement demand. A commercial vehicle runs anywhere from 6000 to 18,000km per month as compared to private cars which run only 2000-3000 km on an average. As the life of the tyre is dependent on the kilometres run by vehicles, commercial vehicles tyres become the focus for any tyre manufacturer in India.

ETC needed to take the following two basic decisions that were highly logistics and SCM-dependent

- Plant location
- Outbound distribution model

Bangalore, Chennai, Pune, and Delhi (Noida) were the main auto manufacturing centres of India. Delhi did not have any commercial vehicle manufacturing unit; hence, the choice of the plant was narrowed down to the nearness to the other three centres, as ETC also hoped to be an OEM supplier to the major commercial vehicle manufacturers.

In terms of inbound materials movement, ETe required a few basic raw materials such as natural and synthetic rubber, carbon black, steel belts, and nylon tyre cords, which were imported or sourced locally.

The market in India for commercial vehicle tyres is estimated to be very huge, considering the annual production of 2,50,000 units of commercial vehicles with a minimum of four tyres for a light commercial vehicle and a maximum of 14 tyres for a semi-articulated 40' trailer. Currently, it is estimated that 30 lakhs commercial vehicles are on the road. Even if one set of replacement of tyres is done every year by each vehicle, the demand could be as much as 15 million tyres per annum.

The commercial vehicle population is almost evenly distributed between north, south, and western regions; the eastern part covers less areas. The eastern part has a population of 20 percent of the fleet and other regions share the balance equally.

There are several sizes in commercial vehicles. The tyres are rated by their outer diameter and casing width and the thickness in terms of the number of layers of cords in terms of ply. A typical truck tyre would be denoted 1000x20x20PR (ply rating), which would mean the outer diameter is one meter, the casing width is 20 cms. And it has 20 ply of nylon cords.

Natural rubber	Thiruvananthapuram (90% of natural rubber is produced in Kerala)
Synthetic Rubber	Nearest port
Carbon Black	Gummidipoondi (Chennai) Indian Rayon Plant
Steel Cords	Imported fully

Imported goods come in containers of 20 feet size and cost Rs. 1.50 per tonne-km. The empty containers have to be delivered to the port from where they are picked up from. The 20 feet containers can hold 18 tonnes of any cargo mentioned here.

For outbound or inbound areas, domestic trucking can be assumed to be done in vehicles with double-axle rigid chassis of 22' long body and 8' width with ten tyres. This vehicle can take a payload of 15,500kg the prevailing freight rate is Rs. 1.25 per tonne km, with a loading (10 percent extra freight) of ten percent for eastern sector due to paucity of return load. An outbound vehicle of this configuration can take 102 tyres of aforementioned sizes and will be full by volume. The inbound trucks however can load the full weight capacity of the truck of 15,500 kg as the inbound materials are of high density and heavy.

The company wanted to put in a capacity of 3500 tyres a day on an average working of 25 days a month. They expected that they would supply one-fourth of this quantity each to OEM's in Chennai, Hosur, Pune, and Jamshedpur; the balance would be sold in the secondary market.

The Indian partner explained to the ETC management that the company needs to have some warehouses in some states in their own name, whether operated by them or outsourced by them. Otherwise, the tyres sold would attract four per cent additional central sales tax, which the dealers would not be able to pass on to their customers.

Having obtained all the data, the ETC management has to decide on the two critical factors mentioned here.

Question

If you were a consultant advising ETC, what would you recommend to the management on the two decision factors? Justify your recommendations on the basis of quantitative and qualitative analysis.

(Note: Each decision factor carries 10 marks)