

**K. J. SOMAIYA INSTITUTE OF MANAGEMENT STUDIES AND RESEARCH,**  
**Vidyavihar, Mumbai- 400077**

**Program: PGDM –IB, FS & Comm & (Batch2017-19), Trim I**  
**Subject: Managerial Economics**  
**(End Term Exam)**

**Maximum Marks: 50**

**Duration: 3 hours**

**Date: 3<sup>rd</sup> October, 17**

**QUESTION I: Read the case study and answer the questions given below: 15 Marks**

**Taxi Service Sector in India**

Taxi service sector in India is undergoing lot of changes. Taxis have arrived in mega cities like Mumbai in 1911 and are still very important mode of commutation. There are around 1,00,000 taxis in Mumbai itself. Most of them are operated independently by taxi owners/ drivers. Fare calculation is based on Taxi regulation and is decided per meter. Any changes in the same are published in the newspapers which guarantee that consumers are aware of the price per meter. High level of competition amongst themselves due to their large number takes care that taxi fares do not raise much even if once in a while they will come together, go on a strike and ask for raise in the fares. Slowly in 1990s Cool cabs (AC) taxis were introduced with rise in per capita incomes which started charging larger fare per km.

Soon afterwards from 2006 onwards the demand for hassle-free and safe travel started rising which gave rise to radio-taxis in India. Its main USPs were ease of booking, safety, customer service and accurate fare meters. The added services like GPS, 24\*7 customer support, electronic fare meter, and other tangible and non-tangible features started boosting demand for such services. The demand further started rising due to growing urbanization, corporate growth, rising per capita income. Customers started depending on these services as public transport worsened further and became more unreliable. Young working class, especially women started finding their services better and safer. In a metro city like Mumbai, where finding a parking lot is a major hassle, people started preferring taking a radio cab even if they own a car. Slowly their demand rose to tier II cities, industrial hubs and in corporate parks. India witnessed high growth rate of around 25 % in this sector.

Radio cab service was first introduced in Mumbai by a private company - Meru Cabs. It started its operations in the year 2006. Initially it was thought to be too expensive and would appeal to very small number of commuters. Within a short time of six years, it became well recognized. It created brand, loyal customer base and used technology to its fullest advantage. Meru realized very early that cab service will work at certain critical network size. If the service is available only in limited parts of a city, it will not become

popular and hence will not become financially viable as the fixed costs of setting up a back-office and maintenance workshop will be too high to amortize over a limited fleet size. Within few years it scaled up from 45 cabs in 2007 to 5,500 across Mumbai, Delhi, Bangalore and Hyderabad. Initially it received the first mover advantage in terms of capturing market share, creating brand, creating a large fleet of cabs to create barriers of entry for other players. Meru has a back office looking after 25,000 bookings daily. The analytics based on past data helped it to predict the trends for next few weeks and deploy the resources accordingly.

But slowly it became clear that Meru was not operating as per the expectations of its investors. Because of its fast growth, the organization became unable to manage cab drivers. Drivers remained unsatisfied due to low returns and quite often would go on strike. Many drivers would sign up and quit or join rivals. This started resulting in lower operating cycles as out of 5,500 cabs only 3,500 to 3,800 cabs remained in actual operations. At the same time within a short period of time many new players like EasyCabs, SAVAARI, TabCab had entered the market. The competition started killing the profit margins very fast and survival became difficult for almost all the players.

Early 2010s saw the rise of taxi aggregating sector. The existing players in Radio cab sector could not stand with the changes of technology and consumer expectations. Mobile app-based service adopted by this sector helps in fastening the entire process of booking, navigating and cash transaction. Most of the Radio cabs were slow to respond to the rapidly changing consumer's demands which had started using app-based technology. Ola and Uber emerged as two dominating players in this market. Both, Ola and Uber used a different business model of enrolling independent cab owners on a commission basis as against 'own-the-fleet' model used by most of the existing Radio cab players. This helped them to reduce their fixed cost which gave them an edge in competition. Ola and Uber could easily capture their market by relentlessly introducing new and better services like Ola Share, Uber COOL, hourly rentals, inter-city cab booking, monthly subscription, Ola-play, etc. By introducing prices as low as Rs. 49 for first 8 kms they also tried to give a tough competition to local auto rickshaws. The ride hailing market in India today is around \$10 Billion size. It is accounting for 25 to 30 % of trips in mega cities like Mumbai, Bangalore and Delhi.

Not everything is going well in this sector as well. Both the companies are facing tough time to make profits are surviving only with the help of their investors hoping for the better returns in future. Getting trained, well groomed and reliable drivers are the major challenge in front of both the companies. Though not owning your own cabs helped them to reduce the fixed cost, it also became a problem in controlling and monitoring the behavioural problems of the drivers. Few bad incidences with women travellers brought them into public criticism with more pressure of government to control them. Both the companies have realized that it is difficult to make consumers pay more from highly price sensitive Indian consumers who were lured to this sector by introducing very low prices. It is yet to be seen how this sector will develop further to create value for its stakeholders like consumers, investors, taxi drivers and owners.

Questions:

- a. What type of market structure taxi service in depicted before the emergence of radio taxis? Explain your answer with the help of few characteristics of the respective market.
- b. Identify the determinants of demand for rising radio cab sector?
- c. What type of market structure Meru Cabs depicted when it set up its operations in 2006? What kind of advantages it enjoyed over small taxi owners? Why it could not retain it in the long-run?
- d. What is the market structure of ride-hailing sector? Explain your answer with the help of few characteristics of the respective market.
- e. Do you think that Ola and Uber are trapped in Prisoner's dilemma? Explain your answer.

**QUESTION II: Numerical problems (Any Three)**

**15 Marks**

1. A sports retail store faces a demand equation for hokey stick given by
$$Q_d = 800 - 1.5P - 0.5P_y,$$
Where  $Q_d$  is the number of pairs sold per month and  $P$  is the price per hokey stick in Rs. And  $P_y$  is the price of hockey ball.
  - a. The store currently charges  $P = \text{Rs. } 80$  per stick and  $\text{Rs. } 50$  per hockey ball. At these prices determine the number of hockey sticks sold. What will be the total revenue?
  - b. If management were to raise the price to  $\text{Rs. } 150$ , what would be its impact on hockey sticks sold? On the store's revenue from hockey sticks?
  - c. Compute the price elasticity of demand first at  $P = \text{Rs. } 80$ , then at  $P = \text{Rs. } 150$ . At which price is demand more price sensitive?
  - d. If the income elasticity for hockey sticks is found out to be  $0.8$  and income is supposed to rise by  $3$  percent next year, how much the demand for hockey sticks would rise?
  - e. Is product  $Y$  a substitute or a complementary? Explain.
2. ABC Enterprises is a small firm in steel office chairs industry which is perfectly competitive. The market price of each chair is  $\text{Rs. } 100$ . The cost function is
$$TC = 50,000 + 40Q + 0.04Q^2$$
  - a. What is the profit maximizing output?
  - b. What is the average cost at this output?
  - c. What is the profits/loss earned by ABC Enterprises?
  - d. If this firm is a typical one in the industry, is the industry in equilibrium? Why?

3. Fill in the blanks in the following table.

Units of output	Fixed cost	Variable cost	Total cost	Marginal cost	Average fixed cost	Average variable cost	Average total cost
0			200				
1			225				
2			245				
3			257				
4			277				
5			302				
6			336				
7			370				
8			426				
9			498				
10			590				

4. The XYZ Company produces readymade garments. Its costs have been analysed as follows:

Overhead labour	Rs. 50,000 per year
Utilities	Rs. 10,000 per year
Materials	Rs. 40 per unit
Mfg labour	3 hours / unit Rs 8 per hour
Other labour	2 hour / unit Rs. 8 per hour
Packing material	Rs. 5 per unit
Packing labour	30 minutes / unit Rs. 6 per hour
Shipping cost	Rs. 20 per unit
Plant operation	Rs. 80,000 per year
Selling price	Rs. 800 per unit

- Calculate the breakeven quantity
- Calculate the breakeven revenue.
- Find out the breakeven quantity and breakeven revenue if the company intends to earn minimum profit of Rs. 10,000.

**QUESTION III : Answer any Two**

**10 Marks**

- a. 1. True or False: “Price can be substituted for MR when firm’s equilibrium has to be considered in Perfect Competition”. Explain.
2. What is the difference between Incremental and Sunk cost? What is more relevant for decision making? Explain.
- b. Explain to which market structure following industry belong to along with their peculiar characteristics?
  1. Two wheeler sector
  2. Beauty parlors in Mumbai
- c. “Sometimes prices remain rigid in oligopoly market structure.” Do you agree with the statement? Explain with the help of graph.

**QUESTION IV: Answer any One of the following:**

**10 Marks**

- a. Explain the concept of Price discrimination with the help of an example. What are the conditions necessary for price discrimination?
- b. What do you understand by the terms “Monopoly deadweight”? When can monopoly firm have socially desirable effects?
- c. Explain the concepts of Economies and Diseconomies of scale with appropriate examples. In what way the concept of Economies of scope different than economies of scale?

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