

# Practice problem set 27

## Platforms & e-markets

This problem set constitutes recommended material for the relevant lab. The choice of tasks to be presented instructionally in every lab is in the discretion of the individual teacher. Students are expected to work on practice problems, however, are not required to submit written solutions. It is non-negotiable policy in this course to not provide hand-outs with the solutions of practice problem sets.

1. Regarding the two-sided platforms we distinguished two types of externalities.

- (a) Explain what the *pure-usage* externality is.
- (b) Explain what the *membership* externality is.

*Homework 14 – 2017*

2. Consider a Rochet – Tirole platform in which every match results to a transaction without monetary transfer between the end-users. The platform's cost is  $C = 100,000 + 2x$ , where  $x$  is the total number of transactions. If the platform increases the price for the buyers by some percentage, this will result to a decrease in transactions by the same percentage. If the side-price for the buyers is 10, find the side-price for the sellers assuming price neutrality.

*Final exam – April 2017*

3. Explain what price neutrality is and how it can be used to distinguish a platform from a market.

*Final exam – April 2017*

4. In the software platforms war between Microsoft and Apple, what was the key element that both companies initially neglected but finally it played a major role in the development of the industry? Explain briefly this specific part of the story.

*Final exam – April 2017*

5. [Review question] Consider a market where there are two differentiated goods. The demand for good 1 is given by  $q_1 = a - bp_1 + dp_2$  and the demand for good 2 is given by  $q_2 = a - bp_2 + dp_1$ , where  $a > 0$  and  $0 < d < b$ . The production cost of each good is zero.

- (a) Suppose that both goods are produced by the same firm (a monopolist). Compute the prices set by the monopolist.
- (b) Suppose now that each good is produced by a different firm and the firms choose prices simultaneously. Compute the Bertrand-Nash equilibrium prices and confirm that they are lower than the monopoly prices.
- (c) Now assume that each good is produced by a different firm but the firms set prices sequentially; in particular, firm 2 can observe the price set by firm 1 before setting its own price. Compute the subgame-perfect equilibrium price of firm 1 in this two-stage game.

*UoL: 2004 za / 2010 za*