EXAM **THE ECONOMICS OF STRATEGY**

7 May 2008 Rune Stenbacka

Time limitation: 4 h

Answer (in English or Swedish) all the five questions below! Please observe that the questions do not have equal weight!

1. (a) Define briefly the following concepts: (1) Bertrand equilibrium, (2) network externalities, (3) critical mass of a network, (4) hold-up problem, (5) vertical restraints, (6) customer poaching, (7) pure bundling, (8) mixed bundling, (9) perfect price discrimination, (10) behavior-based price discrimination. (10 p)

(b) Define carefully market power as well as market concentration. Present the main measures of market power and market concentration. Exemplify your answer. (5 p)

2. (a) During the lectures we demonstrated that the effects on consumers of price discrimination depend on the market structure. Explain why price discrimination intensifies competition in an oligopolistic industry and how this prediction differs from the effects of price discrimination with monopoly. (5 p)

(b) European competition law ("Article 82") specifies that it is illegal to abuse a dominant market position. Explain the contents of Article 82 and exemplify which type of business practices might be illegal under Article 82. (10 p)

3. Assume that we can classify the route between Göteborg and Helsinki as a duopoly with airlines B and F. Suppose that each day there are 60 consumers with a reservation price of 400, and another 120 consumers with a reservation price of 160. If the two carriers set a common price, we assume that they share equally all those customers willing to pay that fare. Let us suppose, for simplicity, that each airline is flying a plane with a 200-seat capacity. Furthermore, we neglect fixed costs and assume that the marginal cost of serving a single passenger for either airline is 100. Let us limit our analysis to two possible prices for each airline: either a high price = 400 or a low price = 160.

(a) Construct a payoff matrix and calculate the Nash equilibrium. (8 p)

(b) Make use of the payoff matrix to show that the Nash equilibrium does not maximize industry profits. (2 p)

(cont !)

4. (a) In many markets firms try to create switching costs through the establishment of long-term customer relationships. Present a general evaluation of how such customer relationships affect market performance both from a short-run and a long run perspective. Exemplify your answer. (5 p)

(b) Two firms are engaged in Bertrand competition. There are 10000 people in the population, each of whom is willing to pay at most 10 for at most one unit of the good. Both firms have a marginal cost of 5. Currently, each firm is allocated half of the market. It costs a customer s to switch from one firm to the other. Customers know what prices are being charged. Law or custom is assumed to restrict the firms to charging whole-euro amounts (e.g., they can charge 6 euro, but not 6,50 euro). Suppose initially that s = 0. What are the Nash equilibria of this model? Why does discrete (whole-euro) pricing result in more equilibria than continuous pricing? (3 p)

(c) Consider the market characterized in (b). Suppose that s = 2. What is (are) the Nash equilibrium (equilibria) of this model? (3 p)

(d) Consider the market characterized in (b). Suppose now that s = 4. What is (are) the Nash equilibrium (equilibria) of this model? (3 p)

(e) Comparing the expected profits in (c) to those in (d), what is the value of raising customers' switching costs from 2 to 4 ? (1 p)

5. Consider a standard Hotelling model of horizontal product differentiation. Assume that the consumers are uniformly distributed on the unit interval $[0,1]$. Further, assume that the consumers face linear transportation costs. Assume that two competing duopolists, A and B, are located at the endpoints of the unit interval. More precisely, A is located at x=0 and B is located at x=1. Each consumer buys one unit of one of the goods. Finally, assume that the firms have constant, but firm-specific marginal costs so that firm A has marginal cost c_A, whereas B has marginal cost c_B. Calculate the Nash equilibrium in prices as well as the associated equilibrium profits. (15 p)

Good luck!