Justus Liebig University Giessen
Faculty 02 - Economics and Business Studies
Chair VWL I

Competition Policy and Strategy

Assignment 9

Aufgabe 9.1 (Investment in Services)
In a market for a homogeneous good, two retailers ($i = 1, 2$) and one producer are active. There is Bertrand competition at the *downstream* level. The retailers have the ability to offer service e. Investing in this service shifts the demand curve upward: $p(q, e) = (41 + e) - q$. It holds that $e = e_1 + e_2$. The cost function of the *downstream* handler is $C(q_i, e_i) = wq_i + e_i^2$, where the variable w denotes the linear wholesale price set by the *upstream* producer. Production of the good continues to incur a constant marginal cost of $c = 1$ at the level of the producer.

a) Show that in equilibrium none of the retailers will invest in services. Interpret this result in economic terms. Calculate profits, consumer surplus, and welfare.

b) Now assume that the *upstream* firm merges with **both** *downstream* firms. Both *downstream* divisions will continue as separate business units. Assume that the internal wholesale price is equal to the marginal cost $c = 1$. Determine the price of the good in equilibrium and the service offered. Calculate profits, consumer surplus, and welfare. Should the competition authority allow the merger?

Assume that instead of merging, the three companies enter into a vertical agreement as follows. The upstream producer enters a franchise agreement (two-part tariff) with the retailers: It sells the good at wholesale price $w = 1$ to the retailers, who also pay it a franchise fee T. At the same time, exclusive sales territories are defined in this contract in such a way that each retailer monopolistically serves 50% of the consumers.

c) Determine the price of the good in equilibrium and the quality of service offered. Calculate the profits and the consumer surplus. Explain your solution.

Now consider a situation where the franchise agreement is as follows: The upstream monopolist binds the retailers to set the retail price at its optimal price under vertical integration and continues to charge a franchise fee T. The exclusive sales territories remain.

d) Determine the price of the good in equilibrium and the quality of service offered. Calculate the profits and the consumer surplus. Explain your solution.

Now assume that the upstream producer can force retailers to set the retail price at its optimal price under vertical integration while setting a minimum sales volume per retailer.

e) Determine the price of the good in equilibrium and the quality of service offered. Calculate the profits and the consumer surplus. Explain your solution.

Aufgabe 9.2 (Exclusive Supplies & Transfer Payment)
A good is consumed by only one consumer. Their inverse demand function for this good is $P = 100 - Q$. A monopolist, the *Incumbent*, produces the good at marginal cost $c_I = 20$. There are no fixed costs in production.

a) Determine the price, quantity, consumer surplus, and the monopolists profit that result in equilibrium.

b) Another firm, the *Entrant*, now decides whether entry is profitable. The *Entrant* produces at marginal cost $c_E = 10$. There is no cost of entry. In the case of market entry by the *Entrant*, there will be Bertrand competition. Will the *Entrant* enter the market? Determine the price and consumer surplus in equilibrium. What are the profits of the two firms?

c) The monopolist considers whether they could prevent the *Entrant* from entering the market by forming a long-term supply contract with the consumer. If such a contract is concluded, the consumer agrees to purchase the good only from the *Incumbent*. To compensate for this restriction, the *Incumbent* pays the consumer a transfer t. How large does this transfer have to be for the consumer to agree to a long-term supply contract. Will such a contract be formed? Can the *Incumbent* prevent entry?

Aufgabe 9.3 (RPM)
Describe and explain the following concepts.

a) What is meant by ”resale price maintenance”? How is this treated under EU law?

b) Describe the difference between *Inter*-Brand and *Intra*-Brand Competition.

c) In the context of *Intra-Brand Competition*, describe a free-rider problem that may arise. How can this be solved by a vertical agreement?