ECO 650: Final Exam 2017

December, 13, 2017

1 Bundling (10. pts)

CMG Sports Club offers 3 basics services (fitness facilities, Swimming pool, Spa & Massages). CMG Sports Club only offers annual membership. Consumers fall into three types:

Consumers	Fitness Facilities	Swimming pool	Spa & Massages
Type A	120	30	50
Type B	80	60	20
Type C	100	20	70

On an annual basis, Fitness facilities and Spa& Massages each costs 20 per member and access to the pool costs 5 per member. The firm cannot discriminate among consumers. We assume there is 1 consumer of each type (A and B and C) and who wants one unit (annual membership) of each product.

Questions:

1. Determine the best pricing strategy for CMG Sports Club if it offers an annual card fee per service? (2 pts)

2. Determine the optimal price if CMG offers only a Gold card membership (Free access to the 3 services- pure bundling)? (2 pts)

3. Determine the optimal fee for any Silver access card (2-services access card-mixed bundling)? (3 pts)

4. Comparing profits in each alternative case, what is the best pricing strategy for CMG Sports Club? (1 pt)

5. Why bundling strategies may be profitable? (2 pts).

2 Vertical Relations (10 pts.)

Assume there is one upstream firm U that relies on one downstream firm D to sell its product to consumers. The unit cost of the product is c. Consumers' demand is given by $q = a - p$, where $a > 0$ is a parameter, q is the quantity demanded and p is the final price charged to consumers. In what follows, we consider a two-stage game in which U offers a take-it-or-leave-it contract to D (or bargain with D over a contract) in stage 1, and D chooses its price in stage 2.

Questions:

1. U offers a take-it-or-leave-it linear contract w to D. Determine the equilibrium contract, price and profits.(1 pt)

2. Assume now that U and D merge. Determine the optimal price p and profit. Compare the result with question 1 and comment. (1 pt)

3. Consider now that U offers a take-it-or-leave-it two-part tariff contract (w, F) to D. Determine the equilibrium contract, price and profits. Consider instead that U offers a Resale Price Maintenance contract defined by $(w, \bar{p})$ to D in which $\bar{p}$ is the resale price? Determine the equilibrium contract, price and profits. Comments. (2 pt)

4. Assume now that in stage 1 U and D bargain (with equal power) over the contract w. Determine the equilibrium contract, price and profits. Compare the result with that of question 1. (2 pt)

5. Assume now that U and D bargain (with equal power) over the contract (w, F). Determine the equilibrium contract, price and profits. Compare the result with question 3. (2 pt)

6. Assume that D can also buy the product at cost $\bar{c} \in [c, a[$ from a competitive fringe. Determine the equilibrium contract (w, F), price and profit depending on the level of $\bar{c}$, when U makes a take it or leave-it offer and when U and D bargain. Comment. (2 pts)