

## Economics 380: Homework 2

2 November, 2006

1. Empirical evidence suggests that, during the 1970s, a firm with an IBM 1400 was as likely to purchase a new IBM as a firm who did not previously own an IBM. In contrast, a firm with an IBM 360 was more likely to purchase an IBM as a firm who did not previously own an IBM. Software from the IBM 1400 could not run on succeeding generations of IBMs, while software from the IBM 360 could run on succeeding generations. How do you interpret these results.

2. First time subscribers to The Economist pay a lower rate than repeat subscribers. What kind of price discrimination is this? Why would this be desirable? Will this work?

First time subscribers to Premiere pay a higher rate than repeat subscribers. Why would this be desirable? Will this work?

3. Cement in Belgium is sold at a uniform delivered price throughout the country (including transport costs). Is this an example of price discrimination?

4. Coca-Cola announced that it is developing a “smart” vending machine that can change the price depending on the temperature outside. Half the time, temperature is high and demand is  $p(q) = 6 - q$ . Half the time, temperature is low and demand is  $p(q) = 4 - q$ . The cost of a can of coke is  $c \leq 2$ .

(a) Suppose Coca-Cola uses the old vending machines, that can only charge a single price. What should this price be? What are their profits?

(b) Suppose Coca-Cola uses the “smart” vending machines. What should prices should they charge? What are their profits?

(c) How much should Coca-Cola be willing to pay for the “smart” vending machines?

5. You have just built a 1000 room hotel. In the summer the hotel is full; in the winter there is at most demand for 500 rooms. Your manager suggests you should divide the price of building the hotel equally between all customers, whether they come in summer or winter, since they all occupy one bedroom. Is she correct?

6. (a) Consider the NutraSweet case, where the Holland Sweetener Co. entered the Aspartame market. At the time of entry, NutraSweet had meet-the-competition clauses with Coke and Pepsi, so that NutraSweet would have the option to retain Coke and Pepsi’s business by meeting

any rival bids. How does the meet-the-competition clause affect the profits of Holland? How would it affect the entry decision of Holland? Using our “taxonomy of business strategies”, is this a direct or a strategic effect?

(b) While NutraSweet had meet-the-competition clauses with Coke and Pepsi, it did not have such clauses with smaller drinks companies. Given this, what entry strategy should Holland have followed? Why did NutraSweet not sign meet the competition clauses with the smaller drinks companies?

7. If you buy a playstation game in Canada it will not work on a European playstation. Why does Sony build in this incompatibility? What factors affect the decision to make two countries systems incompatible?

8. You run a coach company and have to decide what size of coach to buy. Each day you can rent a coach out for a price  $p(q) = 500 - 10q$ , where  $q$  is the number of seats. The coach has no operating cost, but must be scrapped after 250 days. When you buy the coach, the cost of  $x$  seats is  $c(x) = 5000x$ . What size coach should you buy?

9. What is the difference between second-degree and third-degree price discrimination? Name three examples of price discrimination in the airline industry. Include at least one example of second-degree price discrimination and at least one example of third-degree price discrimination.

10. Suppose an airline is using yield management.

(a) Intuitively, when would the airline increase its price? When would the airline decrease its price? Explain why.

(b) Instead of yield management, the airline could simply use a fixed price. When will there be little loss from using a fixed price? That is, for what kind of flights will the lost profit be small?

Do the following after “Bidding for Contracts” lecture.

11. In 1995, Glaxo made a £9bn takeover bid for the Wellcome drugs company. Wellcome was worth a similar amount to six major drug companies, but Glaxo had particular synergies that made its valuation a little higher. While Zeneca and Roche were considering higher bids, they eventually declined, not wanting to pay the tens of millions of bidding costs. Wellcome eventually accepted the £9bn Glaxo bid. What strategies should the Wellcome shareholders have used to increase the takeover price? Explain how these strategies would work.

12. You are bidding for a used car at an auction.

(a) A car is likely to have private-value and common-value components: provide an example of each.

(b) Explain how the common value components can lead to a winner's curse.