yz709-econ-sup1

Question 1(y2021p7q2b)

(b) Proposal 2: The college is buying apartments in the next phase of the North West Cambridge development for use by graduate students and students with dependents. The options are to buy a) a range of apartments, from utilitarian to luxurious, which would be rented out at different amounts; or b) a block of apartments all of the same size, which would be rented out at the same price.

(i) Use an economic perspective to make a persuasive argument for option a) or b), defining and explaining relevant concepts. [5 marks]

(ii) If Proposal 2, option a) is accepted, how might the college decide how much to charge for each grade of apartment? [5 marks]

- (i):
  - a) is a better option.
  - Since different people have different reservation prices, which are the highest prices they could accept, the college could make more profits by charging different prices to other people, capturing all the consumer surplus to achieve Pareto efficiency. The consumer surplus is the total amount people could save based on their reservation price. Pareto efficiency is when there are no ways to make some people better off without making anyone worse off on a surplus perspective (consumer surplus for the students and producer surplus for the college).
  - College accommodations could be differentiated from others by providing necessary facilities such as catering and gyms, ensuring the safety of the students and offering special facilities such as the college bar and common rooms. It could act as a discriminating monopoly to maximise its profits. The college could even propose a mandatory rule saying first-year students must live on the college's main site.

- (ii):
    - The college could survey people's reservation prices for each type of apartment. After gathering the demand curves for all grades of the apartment (price against demand quantities) from the survey data points. For each demand curve, draw a vertical line to find the intersection point between the demand curve and the available supply of that type of apartment and charge people the price at that point. (y value of the point coordinates).
    - If the survey takes too long, the college could even do some data analysis using publicly available room renting costs in that area and classify those rooms into grades aligned with the college accommodation classification. For each type of apartment, calculate the medium price.

> 💡 Comments:

Question 2(y2016p4q7)

(a) Describe three ways in which information goods and services markets differ from the market for coal or for potatoes. [6 marks]

- Information goods and services generally do not need extra physical storage space, while coal or potatoes have a physical size and need to be stored somewhere.
- Information goods and services have a fixed and low marginal cost and no capacity constraints. In contrast, coal or potatoes have a varied marginal cost that changes based on supply and demand and capacity constraints.
- Information goods and services have a strong lock-in effect because it is hard to switch between companies. It is much easier to switch between different coals mining companies or different potatoes vendors.

(b) What are the usual effects of these differences on the structure of such markets? [4 marks]

- Monopolies are common in the information goods and services industries because of the network externality effect but are less common in coal or potato markets.
- The information goods and services market gives out free goods and services but profits from advertisements on the sites. The coal or potatoes are sold to customers for gaining profits.
- People usually be locked into a specific information provider and rarely switch, but may usually buy coal or potatoes from different companies or vendors.

(c) You are the CEO of a car company considering adoption of Android as the platform for the entertainment, navigation and related systems in your next generation of vehicles. Should the app store be run by your company or by Google, and how should the safety case for apps be established? [5 marks]

- Our car company should have control of the app platform because we need to ensure selected and imported apps would not distract drivers and cause severe car accidents.
- If the car accident is related to the app, the app writer has to take half accountability for not providing a safe app. If the app has already reminded users not to use it while drivers are driving the car, then the app writer can skip the responsibility because the driver's ignorance caused the car accident.

(d) You are an academic advising the Secretary of State for Transport on how vehicle app stores should be regulated. What would your advice be, both in terms of the UK public interest and the likely effects of EU regulation? [5 marks]

- Define the accountability takers under a car accident. If the app writer didn't remind people not to use it if they are driving the car, then under a car accident, app writers have to take half accountability, the driver takes the other half; otherwise, app writers can skip the responsibility.
- Car vendors need to ensure they only select safe apps imported into their app platform and ensure users would not import unauthorised apps. Vendors also need to do regular checks upon app safety; whenever they have a system update, they must ensure the system is back-compatible, i.e., apps would work properly and safely on old systems.

💡 Comments:

Question 3(y2021p7q3b)

(b) What are the economic arguments for and against making code you write open source? [6 marks]

- For:
  - It might attract talented people to join the team if they are interested in the open-source codes; this brings positive externalities and brings down our cost of advertisement to hire talents.
  - Share maintenance costs with the community. With active community involvement for the open-source project, bugs may reveal and be dealt with more effectively.
  - Agile development strategy works well with open-source projects because we can start small and continuously deliver different versions of the software based on the feedback we gained from the community. Hence, this speeds up the delivery of the software.
- Against:
  - Less Monopoly rent because with open-source codes, we would not have a comparative advantage compared to other firms; competitions restricted us from being a market price maker.
  - Asymmetric information between our firm and our competitors is not desired. If we shared our project on the open-source platform, but the competitor kept it closed-source, they would gain more information than us. This may result in a high customer churning rate as they come up with better software with more features that we don't

💡 Comments:

Question 4(y2019p7q2)

(a) Describe five different types of auctions. [5 marks]

- English bid or ascending bid:
  - The price starts at a reserved price and is raised until only one person is left who would become the winner.
- Dutch bid or descending bid:
  - The price starts high and stops decreasing until somebody bids, who would become the bid winner.
- First-price sealed bid:
  - One bid per bidder is sealed in an envelope, and then the highest-price bidder would become the winner and pay their price.
- Second-price sealed bid:
  - One bid per bidder is sealed in an envelope; the highest-price bidder would become the winner but pay the second-highest bid price.
- All-pay bid:
  - Everyone pays at every round until one bidder left, who would become the winner of the bid.

(b) If you were in the business of selling advertisements, what would be an efficient way to price them? [5 marks]

- Use a tweaked second-price auction mechanism.
- We want to ensure advertisers target relevant users, users see more relevant advertisements, and both advertisers and users are more likely to use our business platform.
- Each advertisement would have a quality value e_i that depends on the relevance of the ads and the clickthrough rate from users, $e_i = \text{revelance} \times \text{clickthrough rate}$. Suppose bidder bid prices p_i, and then we would have an ad-rank for each ad $a_i = p_i \times e_i$

- After getting a list of ranks, assume we sorted the list to get $\{a_1, a_2, ...\}$. The the actual cost per click for bidders would be $p_i \times \frac{a_{i+1}}{a_i}$.

(c) How might one political candidate achieve a better price per advertisement than their opponents? [5 marks]

- If the tendency of an image could be circulated rapidly and widely from one internet user to another, then it will have a better clickthrough rate, thus under the same price, it will have a better rank.
- Better rank leads to fewer costs per click.
- E.g., Trump attracts more attention, and his ads are better clickbait, so he paid less in his advertisement than Clinton.

(d) What are bidding rings and what might game theory tell us about them? [5 marks]

- Bidding rings when the bidders collude to bid low, then have a private auction later to split the proceeds.
- If two bidders have colluded to bid at a low price, and the third bidder does not collude, then he needs to pay more than the other two bidders' prices to become the bid winner; if the third bidder colludes with the other two, then he only needs to pay one-third of the low price they would like to bid. Therefore, it is easy to form bidding rings among bidders.

Comments: