Exploitative Priority Services

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Priority Services Have Innate Structural Barriers to Competition

- Priority Customers vs. Premium Customers
- Priority – lines/queues
- Medical Treatments
- Ads market (Google and Facebook sponsored ads)
- Extortionate Priority Visa Fees (The Guardian)

Extortionate £800 'priority' visa fee fails to deliver

With the Super Priority Service the implication is you'd receive a visa straight away – it took 38 days

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- Shipping (Amazon)
- Toll Roads
- Heathrow 12 pound priority security screening.
- Corona tests

Willingness to pay for priority

- n customers
- If k are ahead of you in line your waiting cost is kc.
- Every priority agent is served before any regular.
- Within each group - a random order.
- equ. $kc + (1/2)(n-k)c = p + kc/2$
- $cn/2 + kc/2 = p + kc/2$
- $p = cn/2$ (is independent of k!)

Model 1 single service provider

- Measure 1 of consumers seek to get service from a server. Service time is 1.
- Server can serve only single consumer at a time. The disutility of a consumer if he pays the price p for priority and a measure of q consumers are ahead of him in the line is q + p.
- The firm decides on the price of priority and then customers form an equ. by choosing simultaneously P or R (priority, regular). Priority customers are served before non-priority customers and within each group the service order is random.
- We assume that indifferent customers choose P.

Proposition 1:

- In the unique subgame-perfect equilibrium the firm charges the price $p = ½$ and <u>all</u> customers buy priority.
- The firm provides no surplus with the priority service, yet extracts a revenue of ½. Customers are worse off with priority service than without it.
- $(1/2)Pr + p = Pr + (1/2)(1-Pr) \Rightarrow p = 1/2$

Model 2: two service providers.

- Stage 1: two providers simultaneously choose prices for their priority services: p_1 and p_2.
- Stage 2: customers decide whether they go to firm 1 or firm 2 and whether they buy priority service or go for the regular one.
- $n_i^p(p_1,p_2)$ customers getting priority in firm i.
- $n_i^r(p_1,p_2)$ customers getting regular service in firm i.
- $n_i(p_1,p_2)= n_i^p(p_1,p_2)+n_i^r(p_1,p_2)$ total measure of customers in firm i
- $n_1(p_1,p_2)+ n_2(p_1,p_2)=1$

Proposition 2:

- In a unique pure strategy subgame perfect equilibrium prices are (1/4,1/4) and
- $n_1^p(p_1, p_2) = n_2^p(p_1, p_2) = 1/2$
- The two firms provide no surplus with the priority service but extract the monopoly price from their customers!
- Customers' joint welfare gain can be negative also under competition

Model 3: Single Service Provider and Heterogeneous Customers

- the distribution of waiting costs is given by cdf F on support $[c_*, c^*]$ with $c_* \geq 0$ and density f.
- The firm names a price p for the priority and customers choose priority service iff their willingness to pay for the service is at least p.
- Let c(p) the type who's indifferent at price p.
- $-p-c(p)\frac{1-F(c(p))}{2} = -c(p)\left[(1-F(c(p)) + \frac{F(c(p))}{2}\right]$
- $c(p) = 2p$.

Comparing Consumers' Welfare

- Without priority
- $\int_0^{c} -c/2 \; f(c)dc = -E(c)/2$
- With priority

$$-\int_0^{c^*} c\left(1 - F\left(c^*\right) + \frac{F\left(c^*\right)}{2}\right) f\left(c\right) dc + \int_{c^*}^{\bar{c}} \left(-p\left(c^*\right) - c\frac{1 - F\left(c^*\right)}{2}\right) f\left(c\right) dc$$

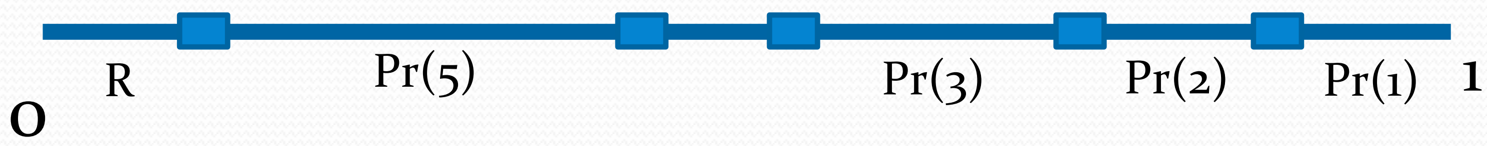
Proposition 3:

- If F satisfies *Increasing Failure Rate*, i.e.
- $1-F(c)/f(c)$ *is decreasing*,
- then the total welfare of all customers declines due to the option of priority service.
- For the uniform [0,1] case half of the consumers buy priority and their total disutility is 5/16. Instead without priority service its E(c)/2 = 1/4

Racketeering

- Causing a problem for the purpose of then benefiting from solving it.

Model 4: Multiple Priorities



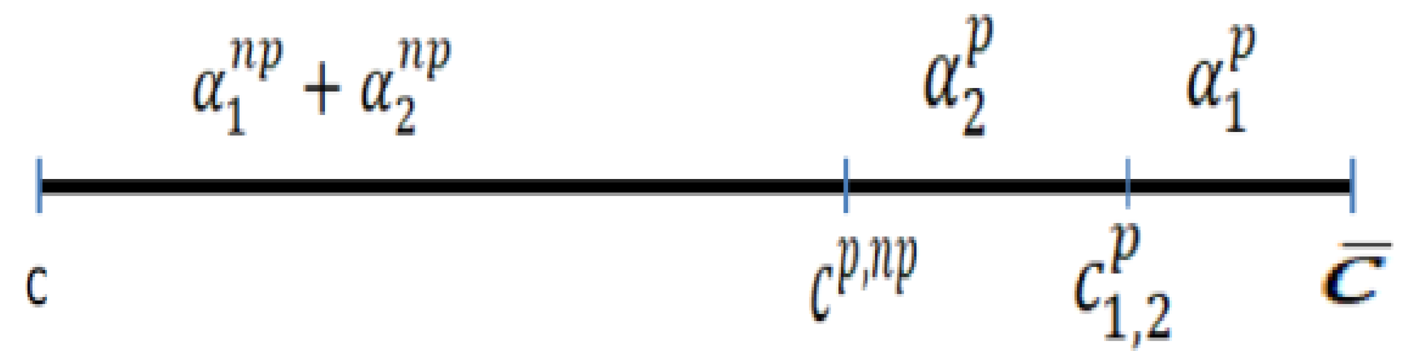
Proposition 4:

- Assume that the distribution F satisfies the IFR assumption. Then the customers' welfare if the provider sets the optimal prices for k priority classes is lower than the case of n priority service as $k \to \infty$

Not Price Discrimination (PD)

- Unlike PD the monopoly excessive revenue builds on the negative externalities among customers, and the fact that the “good” called priority is less valuable the more people purchase it.
- The degree of surplus extraction is typically greater that the customers’ total surplus itself . This can never happen in a standard monopoly framework with or without price discrimination.
- Excessive power of service providers remains also when we depart from the monopolistic market structure, and introduce competition. This again won’t be the case with price discrimination of any degree.

Model 5: two service providers and heterogeneous customers.



Equilibrium Conditions:

- (1) Type with waiting costs $c_{1,2}^{p}$ must be indifferent between getting priority service from firm 1 and firm 2.
- (2) Both firms' non-priority service has the same waiting time.
- (3) Type with waiting costs $c^{p,np}$ is indifferent between getting priority service from firm 2 and (any) non-priority service.
- (4) (consistency) there is a mass of α_{1}^{p} with costs equal or higher than $c_{1,2}^{p}$.

- (5) (Consistency): there is a mass of α_2^p of consumers with waiting costs between $c^{p,np}$ and $c_{1,2}^p$
- (5) $\alpha_1^p + \alpha_2^p + \alpha_1^{np} + \alpha_2^{np} = 1$

Proposition 5:

- In a Bertrand competition over prices for priority service the firms always extracts positive profits.

- Proposition 5: If $F(x)=x^{\theta}$ for $\theta\geq 1$, then customers are better off without priority service.

- In particular this is the case under uniform distribution of the cost.
- Conjecture (verified by examples) this is also the case for $\theta\leq 1$

Market Power

- “Market power arises where an undertaking does not face sufficiently strong **competitive pressure**.” (EC Competition Act 1998)
- Who are the typical victims of priority service?
- The remedy

Extensions

- Non-linear cost function
- Endogenous pricing of the basic service