Pricing

Monopoly Pricing Formula

\[ \frac{p - mc}{p} = \frac{1}{\varepsilon} \]

\[ \varepsilon = -\frac{\%\Delta Q}{\%\Delta p} \]

is the elasticity of demand

- Price higher when demand is less elastic

Pricing

- If demand inelastic, increase price
- Charge more to the less elastic demanders
- Creates a problem of arbitrage
  - Consumers charged high prices attempt to buy at lower price
### Airlines

- Business travelers elasticity around .75
- Tourist elasticity around 2
- Profit on tourists maximized when price is twice marginal cost
- Desirable to charge business travelers more
- No solution when $mc \geq 0$, elasticity < 1

### Direct Price Discrimination

- AKA value-based pricing
- Charge based on customer characteristics
- Student, elderly
- Location
- Other purchases
- Problem: Arbitrage

### Indirect Price Discrimination

- Coupons
- Quantity discounts
- Other good purchases
- Solves arbitrage by “self-selection”
Examples

- Pharmaceutical pricing
- Armani’s brands
- 486SX, 487SX
- IBM LaserPrinter E
- Sony 74, 60 minute mini-discs

Means of Preventing Arbitrage

- Transportation costs
- Legal impediments to resale
- Personalized products or services
- Thin markets and matching problem
- Informational problems

Yield Management

- Reserve some seats for late arriving business passengers
- Tradeoff
  - Gain when plane fills and full fare passengers otherwise turned away
  - Cost of tourists turned away and plane doesn’t fill
  - Gain of business passengers not permitted to pay tourist fare
Yield Management Formula

- $P_D, P_F$ are discount, full fares
- Prob next person won’t pay full fare = $n$
- Prob plane doesn’t sell out = $s$
- Sell discount seat to next request if $P_D > P_F \times (1 - n + n (1-s)) = P_F \times (1 - n s)$

Yield Management Summary

- $P_D > P_F \times (1 - n s)$
- Sell more discount seats
  - As prob plane doesn’t fill increases ($s$)
  - Release more discount seats on empty flights
  - As prob next customer won’t pay $P_F$ ($n$)
- Adds 2-4% in revenue for airlines
- $500$ million per year to American

Softening Price Competition

- Reward the sales force on revenue, or net profits, not quantity
- Encourage non price deal sweeteners rather than price cuts
- Reduce quality to justify price cuts
- Create complex, difficult to compare, pricing
- Create loyalty of existing customers rather than attract competitors’ customers
- Reward loyalty
Peak-load Pricing

• At capacity, marginal costs include
  – Costs of expanding capacity
  – Value of unserved customers
• For electricity, airlines, hotels, marginal costs fluctuate dramatically
• Pricing should reflect likelihood of sellout or reaching capacity