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
  - $P_D > P_F \times (1 - n + n(1-s)) = P_F \times (1 - n \cdot s)$

Yield Management Summary

- $P_D > P_F \times (1 - n \cdot s)$
- 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

<table>
<thead>
<tr>
<th>Camcorder Hedonic Price Regression Results</th>
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<tbody>
<tr>
<td>Variable Name</td>
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<tr>
<td>-------------------------------------------</td>
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<tr>
<td>Base Price (VHS-C)</td>
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<td>Sony Hi 8 mm</td>
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</tbody>
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*JVC mini-DV camcorder with a 3 inch monitor, color viewfinder, image stabilization, low weight, JPEG format and not on sale is worth:

Value = $347.26 \times 1.959 \times 1.129 \times 1.129 \times 1.098 \times 1.074 \times 1.337 \times 1.656 = $2,556.05.