Competitive Strategy: Week 2

Sources of Competitive Advantage

Simon Board

Added Value of a Monopolist

- Recall from last week
  - Cooperation: Maximise size of pie.
  - Competition: Maximise your share of the pie.

- Without monopolist there is no pie.
  - But monopolist is not guaranteed everything.
  - Pie is shared with complimentors, buyers and suppliers.
Exercising Market Power

- Econ 101: Monopoly holds back supply to increase profits.
- The Card Game.
  - I have 26 black cards.
  - You have 26 red cards.
  - $100 for pair
- How is $2600 split?
- What if I destroy 3 cards. How is $2300 split?
- Lesson: Be on the short side of the market.

Case Study: De Beers

- Why are diamond so expensive?
- Hold back supply.
- Only 150 merchants invited to buy diamonds at each “sight”.
- Advertise heavily. Invented engagement ring.
- “Diamond is Forever” discourages resale.
Case Study: Nintendo

- Nintendo invented NES in 1983.
- Cheap hardware
  - 8-bit processor dated to the 1970s.
- Limited power of software firms
  - Limited to 5 titles a year. Exclusivity condition.
  - Nintendo charge markup.
  - Virtuous circle: Popular → software ↑ → popularity ↑ →
- Limited power of buyers
  - In 1988 retailers requested 110m units. Supplied 33m units.
- Nintendo gets very large slice of pie.
- Danger: limiting supply reduces the pie, invites entry and creates ill will.

Monopoly and Quality Choice

- Choose quality to maximise value of marginal consumer.
  - Customer type is $t$. Let $t \sim F(\cdot)$.
  - Customer $t$ has valuation $qt$ for quality $q$.
  - Firm chooses $(p, q)$ to maximise profits. Letting $t^*$ be marginal type, firm equivalently chooses $(t^*, q)$ to maximise
    \[ \Pi(t^*, q) = (p - c(q))(1 - F(t^*)) \]
    \[ = (qt^* - c(q))(1 - F(t^*)) \]
  - First order conditions for $(t^*, q)$:
    \[ t^* - \frac{1 - F(t^*)}{f(t^*)} = \frac{c(q)}{q} \quad \text{and} \quad t^* = c'(q) \]
- Assumes firm only sells one type of good.
Classification of Differentiation

- Consider two products: A and B

- Vertical differentiation
  - If $p_A = p_B$ then everyone prefers A to B.
  - Both can coexist if $p_A > p_B$.
  - Audi A6 vs. VW Jetta.

- Horizontal differentiation
  - If $p_A = p_B$ then some prefer A and some B.
  - Subaru Forrester vs. VW Jetta.

Porter on Vertical Differentiation

- Generic Strategies

- Cost strategy (Aiwa)
  - Locate at mass market position.
  - Pro: Economies of scale. Ability to survive price war.
  - Con: Obsolescence, low margins.

- Value Strategy (Bang & Olufsen)
  - Produce high quality and please upper end of customers

- Avoid being “Stuck in the Middle”
  - HP and Compaq in PCs.
  - Intuition: Value Added lowest when in the middle.
Classification of Opponents’ Reactions

- With competition firm positioning has direct and indirect effects.
- Direct effect: How does change affect firm’s profits, *ceteris paribus*.
- Indirect effect: How does your change affect your opponent’s strategy?
  - Say a strategy is “aggressive” if it lower’s opponents profits.
  - Strategic compliments: By becoming more aggressive, opponent becomes more aggressive. e.g. Bertrand competition.
  - Strategic substitutes: By becoming more aggressive, opponent becomes less aggressive. e.g. Cournot competition.

Case Study: TWA

- In Jan 1993 was in chapter 11
  - TWA was bottom of consumer ratings.
  - Passengers abandoning airline (and lots of empty seats).
  - Excess capacity in industry.
- TWA removed 10–40 seats from each plane to increase legroom.
  - Case of vertical differentiation.
  - Customer rating increased to the top.
  - By the end of 1993, average revenue per seat up 30%
- How did competitors react?
  - TWA increased its price as demand rose.
  - TWA also lowered its capacity.
  - This prompted other airline to raise their prices.
Competition and Vertical Differentiation

• Suppose firm increases its quality
  – Goes from middle-market strategy to value strategy

• Direct Effect
  – Lose many customers in middle of the market.
  – Gain high value customers at the top.

• Increase aggressiveness towards other value firms
  – Opponents may be aggressive lower price (e.g. Epson).
  – Opponents may back off and increase quality (e.g. Ford).

• Decrease aggressiveness towards lower end of the market.
  – Opponents likely to increase prices in the middle of the market.
  – May encourage new entry in the middle.

Patenting Strategy

• Vertical differentiation often determined by patents.

• Patents vs. Trade Secrets (Merck vs. Coca Cola)
  – Patents provide legal protection
  – But information becomes public

• Protective patents
  – Patent all substitutes (inc. inferior technology)

• Defensive patents
  – Patent holes in competitors process.

• Licensing patents
  – Increase the pie but lose market share.
Horizontal Differentiation

• Hotelling’s Model
  – Consumers located uniformly on line $[0, 1]$.
  – Consumers have transport cost $cd$, where $d$ is distance.
  – Firms have zero costs.

• Minimal differentiation: Both firms located at $1/2$.
  – Bertrand competition: both set $p = 0$. Zero profits.

• Maximal differentiation: Firms located at 0 and 1.
  – Given prices $(p_0, p_1)$ demand is given by
    \[ q_0 = \frac{1}{2} + \frac{p_1 - p_0}{2c} \quad \text{and} \quad q_1 = \frac{1}{2} + \frac{p_0 - p_1}{2c} \]
  – Profit maximisation implies $p_0 = p_1 = c$ and $\Pi_0 = \Pi_1 = c/2$.

• Intuition: Profit is determined by added value.

Minimal of Maximal Differentiation?

• Both firms make larger profits under maximal diff.
  – But there is individual incentive to move into the middle.
  – Expect firm might move inwards little, but not to middle.

• Other reasons to clusters
  – Be where the demand is.
  – Keep costs down.
  – Attract customers (e.g. clothing stores in Yorkville).
  – Help detect price cuts by competitors.
  – No price competition (e.g. political parties, radio shows).
Entry in Hotelling

- Suppose 2 firms are located at \((a, 1 - a)\).
  - Let \(d = 1 - 2a\) be the distance between the firms.
  - Equilibrium prices will now be \(p = cd\).

- Now new entrant enters at \(1/2\).
  - Prices are now \(p = \frac{1}{2}cd\).
  - Profit of entrant is \(\frac{1}{4}cd^2\).
  - Let \(F\) be fixed costs.
  - Entry profitable if \(d \geq 2\sqrt{F/c}\)

- Suppose first two shops were owned by one firm. Then block entry by reducing \(d\).

- Example: Cereal market.

Switching Costs and Loyalty

- What is cost of switching from between you and competitor?
  - High switching costs soften price competition.
  - However lead to intense competition over unaligned customers.
  - Example: Cheap bank accounts for students.
  - Example: Frequent flyer schemes.

- Creating loyalty:
  - Give the best deals to your loyal customers.
  - Say thank you.
  - Allow your competitor to have loyal customers.
**Networks**

- A Network Good has a higher value the more people that use it.
- Exclusive network is analogous to large differentiation.
- Should you open the network?
  - Pro: Increases the pie. Virtuous circle as more compliments for bigger network.
  - Con: Makes entry easier and lowers prices.
  - Pro: Low prices make initial investment more likely.
- Example: Intel formed AMD as competitor by licensing 8086.
- Example: MS reduces performance of competing software.

**Many Characteristics: Hedonic Pricing**

- Product’s value is sum of attributes
- Example: House prices.
  - Location, Number of bedrooms, Swimming pool.
- Example: Dell Computers
  - Processor, Memory, Monitor.
- What do prices reflect?
  - In perfectly competitive industry, prices reflect costs.
  - In focus group, prices reflect valuations.
  - In oligopolistic industry, prices also reflect market power.
  - Lesson: Be careful how you interpret regression.
Hedonic Price Regression

- Regression on laptop prices:
  \[ P = 1375 + 212 \times \text{Sony} + 127 \times 1\text{GB} + 378 \times 2\text{GB} \]

- Statistical issues
  - Omitted variables. Is Sony valuable because measure of quality is missing?
  - Interaction effects. Are characteristics compliments? Is Sony better at making high powered machines?
  - Functional form. Run regression in levels or percentages?

Assignment

- According to the long tail theory, how does Netflix differ from Blockbuster?
- What type of differentiation is this?
- What kind of customers will this affect?
- In the longer term, how will this alter consumers’ purchasing behaviour and tastes?