Competitive Strategy: Week 2

Sources of Competitive Advantage

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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 $\rightarrow$ software $\uparrow$ $\rightarrow$ popularity $\uparrow$ $\rightarrow$
- 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

$$\begin{aligned} \Pi(t^*, q) &= (p - c(q))(1 - F(t^*)) \\ &= (qt^* - c(q))(1 - F(t^*)) \end{aligned}$$

  - 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 it 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.
  - Extract through licence payment? Bargaining.

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 by $p = cd$.
- 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:

$$P = 1375 + 212 \times \text{Sony} + 127 \times \text{1GB} + 378 \times \text{2GB}$$

- 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

- Read "Economics Focus: Profiting from Obscurity", The Economist, 7th May 2005.
- 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?