EC 360: Industrial Organization
Lecture 6 - monopolization laws

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Sherman Act: monopolization

- Section 2 of the Sherman Act does not necessarily forbid monopolies, but rather the process of becoming a monopoly
  - Monopolization: obtain exclusive possession or control of a trade, commodity, or service
  - Attempts to monopolize
  - Conspiracies to monopolize

Structural monopoly

Natural monopoly

Recall Section 2 of the Sherman Act does not say anything about the structural conditions of monopolies, but rather only condemns those who attempt to become a monopoly

- **Natural monopoly**: there exist certain situations where breaking up the monopoly lowers welfare

- Graph 6.1

Superior efficiency

- Thought exercise
  - Suppose multiple firms exist in an industry, and one firm is much more efficient than the rest
  - While profit maximizing, the efficient firm sets a price that makes it unprofitable for other firms to enter
  - The efficient firm sets this price not as a result of a price war or predatory pricing, but based on it having lower costs
  - This leads to a lower price faced by the consumers
  - The efficient firm is the only firm left in the industry, and no other firm wants to enter
  - How (or why) would we punish this monopoly?
- Graph 6.2

Intellectual property

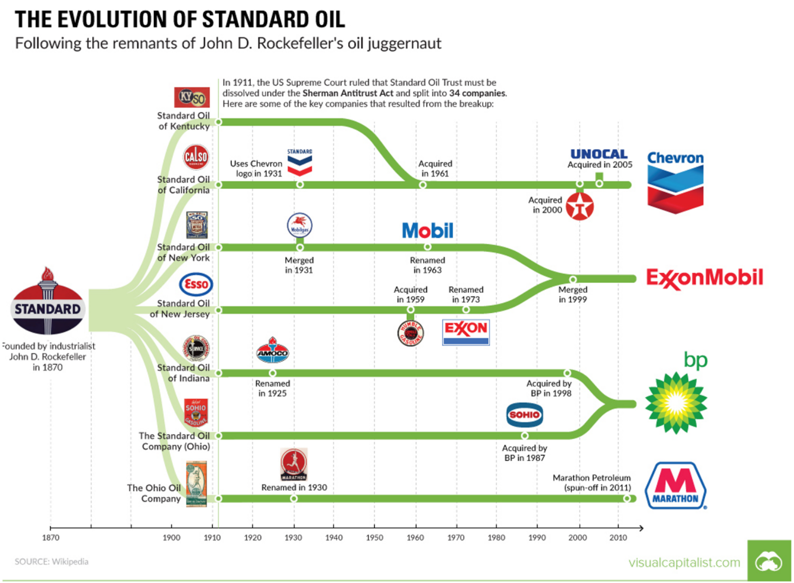
- We’ve discussed patents and the 20 year exclusive rights over the patented technology
  - R&D is extremely expensive
  - Patents make innovation profitable, creating incentives for firms to invest in costly R&D
  - Generally, improving technology is welfare improving
- After the 20 year patent, the technology is publicly available

Court cases

Standard Oil Company v. US (1911)

- In the 1870's, three businesspeople conspired to create the oil company Standard Oil
    - Over the next three decades, they bought a dominant amount of refineries in Ohio, Pennsylvania, New Jersey, New York, and California
    - Standard Oil received illegal discounts from pipelines and railroads, engaged in espionage, market allocation schemes, and even set up fake competitors
- The Supreme Court found Standard Oil guilty of an antitrust violation
    - They applied the rule of reason, noting that Standard Oil wasn't guilty merely because it was a monopoly, but rather how they became a monopoly
    - This case established the **abuse theory of monopoly**: only a monopoly who gained its power through abusive means (i.e. predatory pricing, forcing out competitors, etc.) was guilty of an antitrust violation

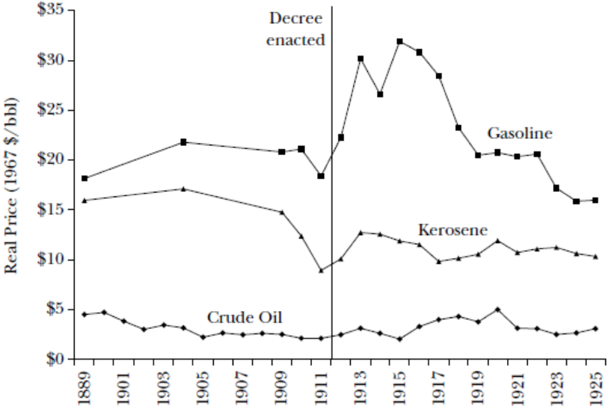
Standard Oil Company v. US (1911)



Standard Oil Company v. US (1911)

Figure 1

Real Petroleum Product Prices, 1899–1925



Notes: Gasoline and kerosene prices are deflated by the Consumer Price Index for all urban consumers. Crude oil prices are deflated by the GNP deflator.
Sources: Williamson et al. (1963); U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition* 224, 593-594 (U.S. Department of Commerce, 1975); Bureau of Labor Statistics internet.

US v. American Tobacco Company (1911)

- In 1890, five cigarette firms merged to form American Tobacco Company, accounting for 95% of the market
  - American Tobacco was found to have engaged in several activities with the intent to monopolize, such as ruining competitors and buying their businesses
  - American Tobacco expanded into new markets (i.e. snuff and cigar markets) and attained a dominant position
- The Supreme Court found American Tobacco guilty of monopolization
  - This ruling is consistent with the abuse theory of monopoly

US v. US Steel (1911)

- In 1901, US Steel formed as a combination of 180 independent steel producers, controlling 80-95% of the steel in the US
  - The 180 formerly independent producers (US Steel) engaged in price fixing; however, they did not engage in coercion or predatory pricing
  - At the time of antitrust suit, US Steel had a 40% market share and had abandoned its price fixing practices
- The Supreme Court found US Steel innocent of any antitrust violation
  - Although US Steel had enormous market power, it never used it excessively
  - This case is notable as a successful defense using the abuse theory

US v. Aluminum Company of America (Alcoa) (1945)

- Through 1912, Alcoa was the dominant manufacturer of aluminum
    - They controlled the two main patents to affordably produce aluminum
    - They were known to practice market division with foreign aluminum producers, and cut deals with electric companies to exclude competitors
- In 1912, Alcoa entered a **consent decree** with the US government
    - For the next 28 years, Alcoa had market share ranging from 33-90%, depending on the definition of the relevant market

US v. Aluminum Company of America (Alcoa) (1945)

- In 1945, Alcoa was found guilty of antitrust violation
  - They supplied enough aluminum such that it kept up with demand, which perpetuated Alcoa's market power
  - This successfully deterred entry for a long time, even though nothing explicitly anticompetitive had occured
- This is a notable **departure** from abuse theory
  - Alcoa never abused its monopoly power, rather it expanded its capacity to keep up with demand
  - Alcoa was condemned for being a monopoly
  - This case set precedent that anything other than becoming a monopoly accidentally was illegal

US v. Aluminum Company of America (Alcoa) (1945)

- “Many people believe that possession of unchallenged economic power deadens initiative, discourages thrift and depresses energy; that immunity from competition is a narcotic, and rivalry is a stimulant, to industrial progress; that the spur of constant stress is necessary to counteract an inevitable disposition to let well enough alone”
  2nd Cir. (1945)

US v. Griffith (1948)

- Griffith owned movie theaters in 85 towns in the southwest, and owned the only movie theater in 53 of these towns
  - They negotiated screenings using all of their theaters, giving them tremendoes buying power with film distributors
  - This buying power often gave Griffith exclusive rights to first-run movies in towns where it faced competition
- The Supreme Court found that although there was no monopolistic intent, the final result was a monopoly exerting market power, thus Griffith was guilty of an antitrust violation
  - This set precedent that intentions are not necessary to establish innocence or guilt in an antitrust case

US v. United Shoe Machinery Corporation (1953)

- United Shoe held patents on several machines used in shoe manufacturing, and had a substantial market share of 75%
  - United Shoe refused to sell its equipment to its client, instead requiring a leasing agreement: a 10 year contract, additional fees to return the machines early, requiring use of the machine as much as capacity and demand would allow, and all repairs done for “free” by United Shoe staffers
- The courts required United Shoe to omit all of the restrictive items in its leases
  - These items created artificial barriers and discouraged entry, which moved the market further from a competitive outcome

Grinnell test

Grinnell test

- *United States v. Grinnell* (1986) established the **Grinnell test** for antitrust cases, a **2-pronged test** for illegal monopoly

  1. The defendant has monopoly power in the relevant market
  2. The development of the defendent's monopoly power was a "willful acquisition of maintenance of that power", instead of as a result of superior products, business acumen, or a historical accident

- In other words, if the defendant is guilty, it's because they tried to become a monopoly, rather than just stumbling into monopoly power

Grinnell test: in practice

1. Define a relevant market, and show the defendant had market power in the relevant market (somewhat arbitrary)
2. Show the monopoly misused their market power (very difficult)
   - Conduct with a legitimate business purpose is fine
   - Any conduct with a predatory or exclusionary purpose is not

Aspen Skiing Company v. Aspen Highlands Skiing Corporation (1985)

- I will refer to Aspen Skiing as **Aspen** and Aspen Highlands Skiing as **Highlands**
    - Aspen owned 3 mountains for skiing in Colorado, Highlands owned one mountain
    - Throughout the 1970's, guests could buy a single pass to access all 4 mountains, with revenue divided amongst the mountains based on usage
    - In 1978, Aspen required Highlands to accept a fixed 15% of revenue, and made it much harder for customers to use the multi-site passes
    - Aspen decided to eliminate the multi-site passes

Aspen Skiing Company v. Aspen Highlands Skiing Corporation (1985)

- The courts used the Grinnell test and found Aspen guilty of an antitrust violation
    - The market was defined as the four mountains owned by Aspen and Highlands
    - Aspen was deemed to have market power
    - By eliminating the multi-site passes, Aspen was exerting market power over Highlands
- The case hinged on the fact that the multi-site passes existed prior to the violation, and eliminating them was predatory
    - If Aspen and Highlands had no history of cooperation, then there would be no reason to force them to cooperate

Eastman Kodak Co. v. Image Technical Services, Inc. (1992)

- Kodak produced and provided maintenance for copiers and other equipment
  - Eventually, independent service organizations (ISOs) entered the repair market, receiving repair parts from Kodak or the original parts manufacturers
  - In 1985, Kodak began selling replacement parts to their customers, on the condition that repairs be done by Kodak
  - They also pressured parts manufacturers to exclude ISOs from the repair market
- Image Technical and other ISOs claimed Kodak committed two antitrust violations
  1. Illegally tying their products to the repair of their products
  2. Monopolizing the market for service of Kodak equipment

Eastman Kodak Co. v. Image Technical Services, Inc. (1992)

- Market definition
  - ISOs claimed the markets were distinct: equipment market vs parts service market
  - Kodak claimed the equipment was useless without service, thus it was only a single market
  - The courts believed the two markets were distinct in the eyes of the buyer
- Market power
  - Kodak claimed that it lacked market power in the repair market, since it didn't have market power in the copier market
- The Supreme Court ruled in favor of ISOs, noting that Kodak had nearly 100% control of the repair parts market
  - This case highlights the importance of market definition

US v. Microsoft

US v. Microsoft (1999)

- The US took Microsoft to court for antitrust violations
  - Trial occurred October 1998 - June 1999
  - Microsoft was eventually found guilty of monopolization
  - The DOJ applied the Grinnell test
  - Microsoft argued that typical views of competition were obselete in analyzing an industry where technology and products are changing so fast

US v. Microsoft (1999): industry background

- Personal computers (PCs) flourished in the 1980's, as they were cheaper and more powerful than the alternative
- PCs have three main components
  - Hardware: the physical components of the PC
  - Operating systems: the most basic software that tells the hardware what to do
  - Application software: the software a user can interact with for typing, data analysis, gaming, etc.
- When IBM introduced PCs, they chose Microsoft's operating system, which caused Microsoft's windows OS to flourish
  - The US government claimed Microsoft used Windows' success to exclude other application software developers from the market

US v. Microsoft (1999): conflicting view of competition

- The US and Microsoft differed (drastically) in their respective views of the competitiveness of the industry
  - The US argued Microsoft had a dominating market share due to significant barriers to entry in the software industry, and that Microsoft took actions to defend their dominant position from competitive entry
  - Microsoft argued that software competition is fundamentally different than competition in other industries, and that Microsoft gained their market share and excess profit due to winning a competitive battle

US v. Microsoft (1999): Microsoft's expert economist

"Competition in the sofware industy is based on sequential races for the leadership of categories such as word processing, spreadsheets, personal financial software, games, operating systems, and utilities - not to mention currently unknown categories from which the next generation of "killer applications" will emerge. Many firms enter the race to lead or create a category. A firm can win the race for a category by virtue of being first to market with an innovative product desired by consumers, or by offering a product that consumers consider substantially better than existing products. That winning firm obtains a large share of sales in its category as a result of product superiority and scale economies. It charges prices that reflect the value to consumers of the intellectual property it has created, and it enjoys the profits that arise from its success and risk taking. However, its prices are constrained by the risk of being displaced, which also forces it to continue to innovate." - Richard Schmalensee

US v. Microsoft (1999): Microsoft's expert economist

- What was Microsoft's expert economist arguing?
  - In the tech industry, you are rewarded with profit for either having an innovative product, or a product that is significantly better than what was on the market
  - Technology has increasing returns to scale, thus a good product will necessarily make huge profit
  - This huge profit is offset by the risk of having your product replaced
  - Microsoft just has a lot of good products

US v. Microsoft (1999): elements of market power

- Using the Grinnell test, the US needed to define the market and provide evidence of monopoly power
  - The US defined the relevant market as the licensing of all Intel-compatible PC operating systems worldwide
  - Up to this point, Microsoft was the only firm in this market
- Microsoft defined the relevant market differently
  - They believed Apple's Macintosh should be included in the market, as well as "middleware" products that are compatible with any OS
- The Supreme Court sided with the US
  - The court believed that if Microsoft raised their prices a little, most consumers would not move to middlewares of Apple

US v. Microsoft (1999): elements of market power

- The DOJ provided evidence that Microsoft had 95% market share in the relevant market, and that they were exerting market power
- Microsoft countered
  - Microsoft was not exerting market power, but rather won the competitive race to be a "category leader"
  - Their observed market share was a result of many periods of successful (and costly) innovation

US v. Microsoft (1999): barriers to entry

- The DOJ argued that software development has substantial barriers to entry
  - Operating systems have large economies of scale and large sunk costs
  - Consumers prefer an OS that has a lot of applications already available
  - Software applications and OS's have substantial network effects
- Microsoft countered
  - There are no barriers to entry for a startup to enter the tech race
  - Trivial advances over the current category leaders are ineffienct, since no one would buy the product
  - Thus, firms try to "leapfrog" the category leader, and Microsoft was vulnerable to this

US v. Microsoft (1999): barriers to entry

- Although Microsoft's defense of leapfrog vulnerability appeared strong, an internal memo revealed they did not actually believe this was realistic
    - "Our high prices could get a single OEM (original equipment manufacturer) (Compaq might pay us $750m next year) or a coalition to fund a competing effort (say in India). While this possibility exists I consider it doubtful even if they could get a product out that they can market successfully, leapfrog us and would not deviate from their own standard to differentiate. Could they convince customer [sic] to change their computing platform is the real questions [sic]. The existing investments in training, infrastructure and applications in Windows computing are huge and will create a lot of inertia."

US v. Microsoft (1999): exclusionary conduct

- After proving Microsoft had monopoly power, the DOJ wanted to show they engaged in exclusionary practices
    - Java and Netscape were middleware companies that created products that made OS's interchangable, such as Netscape's internet browser
    - Microsoft developed Internet Explorer and distributed it at a **negative** price
    - Microsoft **bundled** the Windows OS with Internet Explorer
- The DOJ argued this behavior excluded middleware companies that produced browsers competitive to Internet Explorer
- Microsoft countered that bunding Internet Explorer benefited customers, the quality of Internet Explorer steadily improved, and bundling Internet Explorer was merely competitive practice

US v. Microsoft (1999): judicial decision

- Using the Grinnell test, Microsoft was found guilty of antitrust behavior
  - Microsoft had huge market share in the relevant market
  - Their behavior was consistent with monopoly, as they charged a high price and constructed barriers to entry
- Microsoft's strategy prior to the trial helped provide evidence for the decision
  - Microsoft did not consider competitor prices when pricing their OS
  - Microsoft raised the price of Windows 95 right before the release of Windows 98
  - The price of upgrading from Windows 95 to 98 was $89, when a price of $49 was economically feasible

Attempts and conspiracies

Attempts to monopolize

- Section 2 of the Sherman Act forbids "attempts to monoplize"
  - In the American Tobacco case, the Supreme Court interprets this to mean "employment of methods, means and practices which would, if successful, accomplish monopolization, and which through falling short, nevertheless approach so close as to create a dangerous probability of it"
- That is, doing the following two things together is illegal
  1. Exhibiting an intent to monopolize
  2. Being dangerously close to monopolization
- To show this, a plaintiff is required to prove three things
  1. The defendent engaged in anticompetitive behavior
  2. The defendant had specific intent to monopolize
  3. The defendant has a high probability of achieving monopoly power

Attempts to monopolize: specific intent

- To show **specific intent**, the plaintiff must show the defendant's behavior was meant to control the price in a relevant market, or exclude others from the market
  - This behavior is sometimes hard to separate from normal business practices
- Consider *Union Leader Corp. v. Newspapers of New England* (1959)
  - In this case, the relevant market was only big enough for a single firm
  - The firms in this market were trying to survive competition, not necessarily monopolize
  - The courts ruled that competitive superiority resulting in monopolization is not an antitrust violation
- The courts believed antitrust law should not "dampen the competitive zeal"
  - Antitrust law protects the competitive process, not the competitors

Conspiracies to monoplize

- Section 2 of the Sherman Act forbids attempts of two or more persons from conspiring to monoplize a market
- To prove an illegal conspiracy to monoplize, two criteria must be met
    1. Two or more persons took concerted actions with a specific intent to monoplize the market
    2. These persons made at least one overt act in furtherance of the illegal scheme
- Technically, the actions need not be successful
    - In practice, antitrust enforcers don't care about unsuccessful actions

Conspiracies to monoplize: dangerous probabilities

- To prosecute firms for attempts (conspiracies) to monopolize, the courts must determine if a firm in the relevant market has a **dangerous probability** of successfully acquiring monopoly power
- The courts look at four factors
  1. The relative size of the firm in question, in terms of its market share
  2. The structure of the industry
  3. The firm's conduct and business practices
  4. The performance of the firm and industry
- Generally, the courts do not find a dangerous probability for a firm with less than 30% market share, and seldom find it for a firm with 30-50% market share

Injury and damages

Injury and damages

- Recall Section 2 of the Sherman Act requires a plaintiff to show that injury occurred as a result of an antitrust violation (Pueblo Bowl-O-Mat case)

- Damages are calculated in a very specific way

$$D = (P_m - P_c) \cdot q_m$$

  - Observe the actual quantity (q_m) and price (P_m) charged by the monopoly

  - Determine the quantity (q_c) and price (P_c) that firms would have charged in a perfectly competitive market

  - Calculate damages based on the actual quantity sold (q_m) and the difference between the actual price (P_m) and the perfectly competitive price (P_c)

- Example 6.1