EE481: Industrial Economics

Overview

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Contact Information

- My office: Room 525, Economics Department
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Textbooks

- Textbooks
  - Carlton, D.W. and J.M. Perloff, *Modern Industrial Organization*, 4th Edition, Pearson Addison-Wesley Press, 2005. (Maintext, abbreviation = CP)
  - Rasmusen, E., Games & Information, 3rd. Edition, Backwell, 2001.
  - Church, J. and R. Ware, *Industrial Organization: A Strategic Approach*, International Edition, McGraw-Hill Press, 2000. (Supplement text, CW)
  - Tirole, J.., *Industrial Organization*, The MIT Press, 1989.

Other Readings

- Harvard Business Review (http://hbr.org/)
- The Economist (http://www.economist.com/)
- Prachachat Online (http://www.prachachat.net/)
- Bangkokbixnews (http://www.bangkokbiznews.com/home/)

Grading

- 20% Homework and Essay
- 10% Presentation
- 30% Midterm Exam
- 40% Final Exam

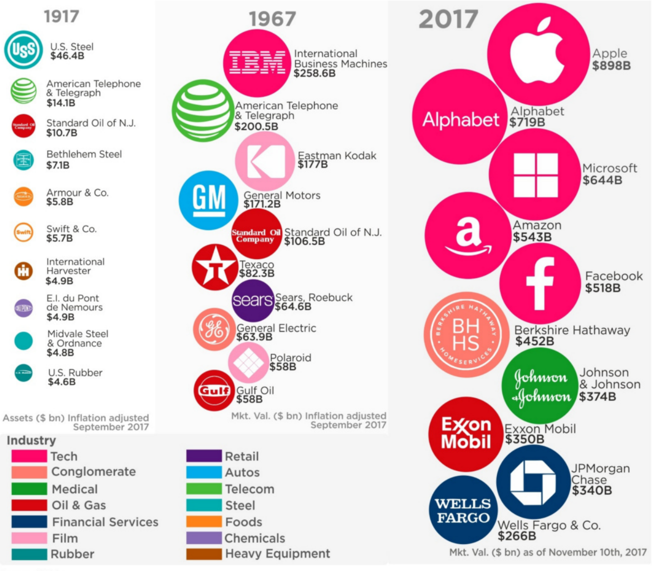
The Works

- Late homework = 50% of the earned points
- There may be a few essays assigned.
- Presentation (VDO presentation towards the end of the class)

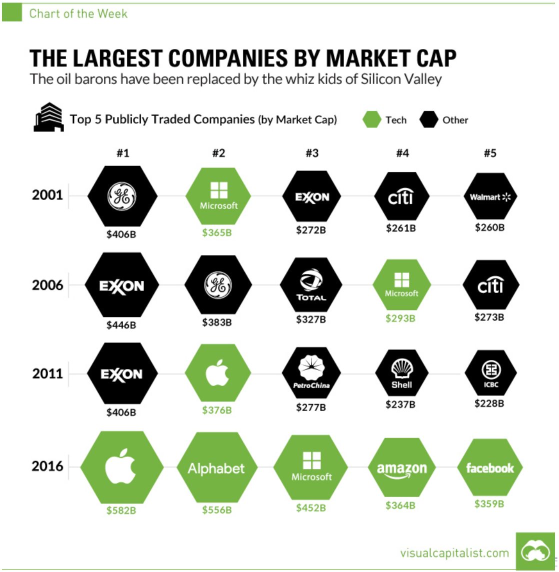
The Purpose of this Course

- The purpuse of this course is **NOT** to teach you how to do business.
- This course will teach you how to apply economics theory to explain firms behaviors.
- This course will enable you to view business situations from the society's perspective using economics tools.
- Most importantly: "What matters is how much you learn, not how much I teach."

Large companies in the US market



Large companies in the US market



What is Industrial Organization?

- "The Study of the structure of firms and markets and of their interactions" (Carlton and Perloff, 2005)
  - For example: a study of how **tech companies** **compete** in the **social network market**.
    - firms -> tech companies
    - market -> social network market
    - interactions -> how firms compete, strategies they use
  - Or .. a study of how **car companies** set price of their products.

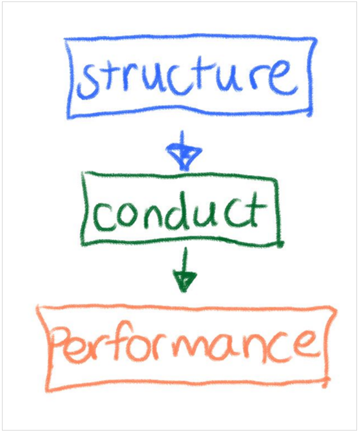
Major tools used in this course

1. Structure-Conduct-Performance (SCP)
2. Game Theory
3. Price Theory
4. Transaction Costs Theory

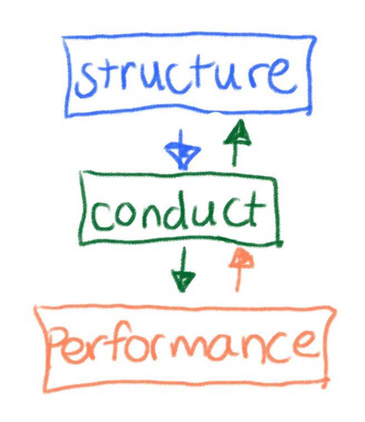
Structure-Conduct-Performance

- Structure = Factors that determines competitiveness of the market, i.e. number of firms, barriers to entry, etc.
- Conduct = behavior of firms, i.e. whether they are collusive, type of competition strategies used, etc.
- Performance = Competition outcomes, i.e. whether firms can deliver the most efficient outcome or the highest benefits to the consumers.

Structure-Conduct-Performance



Structure-Conduct-Performance



What will you learn in this course?

1. Learn how to analyze the **market structure** of an industry
   - Monopoly, duopoly, oligopoly, perfect competition
   - Barriers to entry
   - Product differentiation
   - Vertical integration
2. Learn about different competition strategies (**conducts**) firms adopt to compete
   - Collusion, Merger, Advertising, R&D, Pricing bahavior, etc.
3. Learn how we can asses firms' **performance** from the society's point of view
   - Price, Production Efficiency, Equity, etc.
4. Learn what the government can do in order to promote for more desirable outcomes (**performance**).
   - Anti-trust policy, Government Regulation

Questions we will explore (for example)

- Why do firms offer price match deals?
- Why do firms sometimes sell their products in bundles?
- Why do firms form a cartel?
- Why do manufacturers set price for their retailers?

The Objective of a Firm

What do you think is the main objective of a firm?

The Objective of a Firm

- Firm = an organization that transforms inputs into outputs
- Neo-Classical Theory of the Firm **(we use this theory in this course)**
  - Most firms maximize profits
  - Firms utilize its resources in the most efficient way
- There are some other theories of the firm, for example, managerial and behavioral theories. We don't use them in this course.

Ownership and Control

Who owns firms?

Ownership and Control

Three Basic Forms of Ownership

1. Sole proprietorships - owned by 1 owner
2. Partnerships - owned by multiple owners
3. Corporations - companies whose capital is divided into shares. A corporation raises funds through two channels
    1. from shareholders (equity owners)
    2. from debt holders (banks, people who buy the company's corporate bonds)

Separate Ownership and Control

If the owners are not the ones who run everything,
how do you think the owners should control their firm?

Separate Ownership and Control

- Managers (employees) may not have an incentive to maximize the owners' (shareholders') profits.
- The owners have to find ways to make the managers maximize their owners' interests.

How?

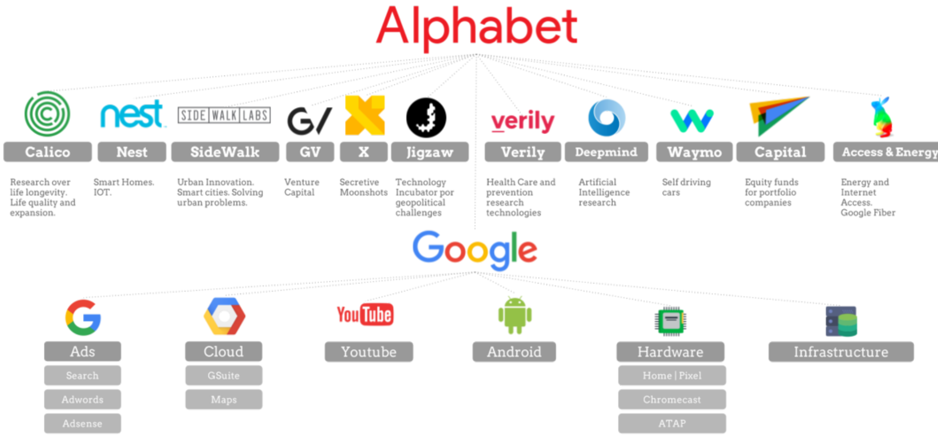
- Use performance-related benefits (compensation depends on company's performance).
  - profits
  - ranking
  - revenue
  - etc.

How do firms grow?

Size of Firms, Mergers and Acquisitions

- Smaller firms are easier to administer but larger firms can 1) do more activities and 2) experience economy of scale/scope.
- How do firms increase their size?
    - Keep accummulating assets and invest
    - Vertical Merger
    - Horizontal Merger
    - Conglomerate Merger

Why do firms grow?



How do you define market?

Types of Costs (you should know about this already)

- Firms minimize costs in order to operate efficiently. However, what kind of cost it minimizes? Some important types of costs:

1. Fixed Costs (F)
2. Variable Costs (VC)
3. Total Costs ($C = F + VC$) or ($TC = F + VC$)
4. Average Cost ($AC = \frac{C(q)}{q}$) or ($ATC = \frac{TC(q)}{q}$)
5. Average Variable Cost ($AVC = \frac{VC(q)}{q}$)
6. Average Fixed Cost ($AFC = \frac{F}{q}$)

Types of Costs (Fill in the Blank)

Output	F	AFC	VC	AVC	TC	ATC	MC
0	100	-	0	-	100	-	-
1	100	100	10		110		10
2	100		19	9.5	119	59.5	
3	100	33.3	25	8.3	125	41.7	6
4	100		32		132	33	
5	100		40	8.0		28	8
6	100	16.7	49	8.6	149	24.8	
7	100	14.2	60	9.1		22.9	11
8	100	12.5	73	9.8	173	21.6	13
9	100	11.1	88	10.8	188	20.9	

Short Run vs. Long Run

- Short Run - not enough time to change the factors of production or production technology.
- Long Run - long enough time to allow change in the factors of production or production technology.

Economy of Scale

- Economies of scale (or increasing returns to scale) - AVC falls as output increases
- Constant returns to scale - AVC is constant
- Diseconomy of scale (or decreasing returns to scale) - AVC increases as output increases
- Minimum Efficient Scale (MES) - the minimum units of output required to produce in order to achieve the lowest long-run average cost.

Indivisibilities Create Economies of Scale

1. Long-run fixed costs, Set-up costs
2. Specialized resources and the devision of labor
3. Volumetric returns to scale
4. Economies of massed reserves

Economy of Scope

- There are positive spillovers (cost-saving, cost-sharing) effects when 1 firm produces more than 1 type of products.

$$C(q_1, q_2) < C(q_1, 0) + C(0, q_2),$$

where $C(\bullet)$ is the cost function, q_1 is output of product 1, q_2 is output of product 2.

Reference and Further Reading I

Carlton, D.W. and J.M., Perloff.
Modern Industrial Organization. 4th Edition.
Pearson Addison Wesley Press, 2005.

Church, J. and R. Ware.
Industrial Organization: A Strategic Approach. International Edition.
McGraw-Hill Press, 2000.