15.013 — INDUSTRIAL ECONOMICS FOR STRATEGIC DECISIONS

FALL 2013

(Version: 8/3/2013)

This subject is designed to provide a working knowledge of the analytical tools of industrial economics that bear most directly on the strategic decisions that firms must make. The kinds of decisions that will be of interest to us include: pricing and output; advertising; investment in new production capacity; the introduction of new products, brands, and quality variations; investments in R&D; and the use of patents. Throughout the course, our emphasis will be on industry structure, its relationship with the way firms interact strategically, and its implications for market power. The analysis of industry structure, strategic interactions among rival sellers, and strategies for entering an industry, or for deterring entry or controlling its impact, will be covered with a mix of theory and case material.

Students taking this course should have a good background in microeconomics — specifically, course 15.010 or its equivalent. In addition, some background in finance (course 15.401 or the equivalent) is strongly recommended.

No textbook will be assigned for this course. However, a set of readings and cases should be purchased from MIT Copytech, East Campus, which is now located in E34-146. Also, from time to time we will post additional readings on Stellar.

Grading in the course will be based on four different aspects of your performance:

- **Classroom participation** (28% of grade) — All students are expected to have read the assigned materials, to attend class, and to participate actively in class discussions.

- **Strategic oligopoly game** (15% of grade) — You and your teammate will be graded on your performance, measured by your cumulative profits, in this semester-long game. Your performance will be evaluated relative to the overall average performance of both sections of 15.013, not the performance of your industry.

- **Exercises** (32% of grade) — We will assign 9 written “exercises” over the course of the semester. **You are only required to turn in 8 of these exercises.** (If you do all 9, we will drop the lowest grade.) You may do these exercises individually or in groups of up to three students. To receive credit, exercises must be submitted on time, and as hard copies.

- **Final exam** (25% of grade) — This will be an in-class exam. (Closed-book, but you can bring an 8.5 x 11” sheet of paper with notes, formulas, etc. on both sides.)
Class Attendance: Students are expected to attend all classes, and to arrive in class promptly. Students are also expected to have done the required reading and be prepared to participate actively in class discussion. I will begin most classes by “cold calling” on two or three students.

Laptop Computers: Given the importance of classroom participation, we ask that you do not open your laptop computer during class. There are only two exceptions to this rule: (1) presentations and discussions of exercises, where spreadsheets or other results are on your computer; (2) students with special needs (e.g., handwriting difficulties), who get permission in advance to use their computers. The same rules apply to iPads, PDAs, smartphones, etc.

Group Work: You are expected to participate fully in any exercise or other assignment that has your name on it. It is absolutely unacceptable to “rotate” assignments among members of a group, or to take credit for an assignment in which you were not substantially involved. You may allocate the work needed to complete an assignment (e.g., one person does the internet research, another develops a spreadsheet model, etc.), but every member of the group must be substantially involved in the assignment.

DATES TO REMEMBER

Monday, September 9 Please submit via the template on Stellar a short (1- or 2-paragraph) “biography” describing your background and interests. Include a photograph, and the phonetic spelling of your name.

Wednesday, September 11 Exercise 1 is due. In addition, you should turn in a note on your choice of partner for the strategic oligopoly game.

Monday, September 23 Trial Play of Strategic Oligopoly Game. (Submit by 5:00pm.)

Monday, September 30 First real play of Strategic Oligopoly Game.

Monday, October 14 NO CLASS, Columbus Day. However, game play must be submitted by 5:00pm.

Monday, October 21 NO CLASS, SIP week. However, game play must still be submitted by 5:00pm.

Wednesday, October 24 NO CLASS, SIP week.

Monday, November 11 NO CLASS, Veterans Day. However, game play is due by 5:00pm.

Monday, December 2 Last play of Strategic Oligopoly Game.

Monday, December 9 FINAL EXAM (90 minutes, in-class).

Wednesday, December 11 Debriefing, and results of strategy game. Discussion of additional topics as time permits.
TENTATIVE OUTLINE

Sept 4 Wed  Introduction: Sources and Uses of Market Power. Overview of the course. Market structure, market power and the value of the firm. Strategic decisions that affect market structure and market power. Competing in the market versus competing for the market.


Turn in brief biography and photo via Stellar/Google form. Be prepared to answer questions on learning curve and oil well problem.


Exercise 1 due. Hand in choice of game partner.


**Sept 18  Wed**  

Read:  
Apple Inc.: iPods and iTunes. [Ivey Case #9B05M046]  
Readings on Internet music stores: in course package and Stellar.

*Exercise 2 due.*

**Sept 23  Mon**  
 **Market Structure and Evolution: Information and Industry Transformation.**  
How does the greater availability of information affect industry structure? Can information technology transform entire industries? Will I.T. transform the medical industry? Asymmetric information in the medical industry. Analysis of WebMD. Predicting “the next big thing.”

Read:  
“WebMD (A).”  [HBS Case #9-701-007]  
“WebMD (B).”  [HBS Case #9-701-133]  
Readings on WebMD: in course package and Stellar.

*Trial play of Strategic Oligopoly Game.* Submit by 5:00 pm.

**Sept 25  Wed**  

Read:  
Lecture Notes on Vertical Structure, Sections 1, 3 and 4.  
Pindyck & Rubinfeld, Review Section 11.4.

**Sept 30  Mon**  

Read:  
Lecture Notes on Game Theory, Sections 1—6.  (Section 7 optional.)

*Exercise 3 due.*  
*First real play of Strategic Oligopoly Game.* Submit by 5:00 pm.
Oct 2  Wed  The Value and Use of Information. Decision making with asymmetric information, and the role of uncertainty. Does better information make a firm better off? Should you convey information to your competitors? Learning from nature and learning from others: oil, real estate, and R&D. Informational cascades and “wisdom after the fact.” Rational versus irrational bubbles. The 2008-2009 credit freeze.

Lecture Notes on Information and Strategic Timing of Investments.


Read:  Lecture Notes on Information and Strategic Timing of Investments.


Exercise 4 due.

Oct 14  Mon  NO CLASS. (Columbus Day.) However, game play is due by 5:00 pm.


Read:  Lecture Notes on Entry and Reaction to Entry.

Oct 21  Mon  No Class. (SIP week.)  However, play of strategic oligopoly game is due by 5:00pm.

Oct 23  Wed  No Class. (SIP week.)
Oct 28 Mon  


“American Airlines Value Pricing” (A) [HBS Case #9-594-001] and (B) [HBS Case #9-594-019].

*Exercise 5 due.*

Oct 30 Wed  


Read: Lecture Notes on Game Theory, Section 8.

Readings on Commercial Aircraft Industry (course package and Stellar).

Nov 4 Mon  


*Exercise 6 due.*

Nov 6 Wed  


Read: Pindyck & Rubinfeld, review Section 11.5.

Lecture Notes on Bundling and Brand Proliferation, Sections 1-2.

Nov 11 Mon  

NO CLASS. (Veterans Day.) *However, game play is due by 5:00 pm.*

Nov 13 Wed  

**Deterrence via Brand Proliferation.** Discussion of attribute space and its use in economic analysis. Local competition among brands in attribute space. Choosing the attributes for new brands. Brand proliferation, entry deterrence, and market power. Analysis of the breakfast cereal industry.

Read: Lecture Notes on Bundling and Brand Proliferation (complete).


*Exercise 7 due.*
**Nov 18  Mon**  

Read:  
Lecture Notes on Network Externalities, Sections 1-5.  
“Philips’ Compact Disk Introduction (A).” [HBS Case #9-792-035]

**Nov 20  Wed**  

Read:  
Lecture Notes on Pricing

**Nov 25  Mon**  

Read:  
Lecture Notes on Network Externalities, Section 6.  

*Exercise 8 due.*

**Nov 27  Wed**  
**Network Markets: Credit Cards (continued).** Strategic aspects of card issuance. Pricing and profitability. Competition and market dynamics in card issuance. Discussion of Capital One Financial Corporation. The impact of electronic money, including “bitcoins.”

Read: “Capital One Financial Corporation.” [HBS Case # N9-700-124]
Dec 2  Mon  R&D, Patenting, and Licensing. Implications of R&D and innovation for industry evolution and market structure. The race to innovate. Making the R&D investment decision: strategic and non-strategic aspects. Patents as options. Sleeping patents and the decision to adopt a new innovation. Licensing decisions. The use of licensing to gain market power.

Read:  Lecture Notes on R&D and Patent Licensing.

Exercise 9 due.
Last play of Strategic Oligopoly Game. Submit by 5:00 pm.


Read:  Lecture Notes on R&D and Patent Licensing.

“Economics of Patent Pools”

Dec 9  Mon  FINAL EXAM. (Closed-book, but you can bring an 8.5 x 11” sheet of paper with notes, formulas, etc. on both sides.)

Dec 11 Wed  Wrap-Up Class. Results of strategic oligopoly game – meet your competitors! General discussion of topics related to course.