

Preliminary Syllabus. Subject to change.

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Course Homepage: <http://t-square.gatech.edu>  
Time & Location: TSB (24754): Mon. & Wed., 9:35 – 10:55, Scheller College of Business, Room 221  
Office Hours: Mon. 11:00 – 12:00 or by appointment, Room 4420 (Above Auditorium), CoB

## Course Scope and Mission

Innovation increasingly plays a critical role in generating both economic growth and sources of competitive advantage. This course focuses on how firms (both new and old) can create and capture value from product, process, and service innovations. To do so, this course will introduce students to new tools and frameworks for examining both new and old problems related to innovation and technological change. This course consists of a mix between lectures and case studies, with an emphasis on class discussion and debate. While most of the case studies in class will focus on technology-oriented contexts, many of the insights developed during this course will be highly applicable to firms in non high-tech industries as well. By the end of the course, you will be able to:

- Conceptualize and identify opportunities for creating value through innovation
- Develop an understanding of how to capture the value of innovation through a variety of techniques
- Coherently integrate these principles with competitive and corporate strategies

A mastery of the tools and frameworks developed in this course will be useful to executives, consultants, entrepreneurs, government officials, investors, and any manager responsible for the introduction and implementation of new products or services.

## Required Materials

1. **Readings:** available on t-square (no required text).
2. **Course Packet:** includes business cases (available from HBSP: <https://cb.hbsp.harvard.edu:443/cbmp/access/23531955>)

## Grading Policy

A. Class participation	40%
B. Midterm	30%
C. Take-home case	30%

## A. CLASS PARTICIPATION (40%)

I expect every student to be prepared to answer questions on every lecture. The readings and the cases typically highlight a particular idea or model. I would like you to both *identify* key issues and problems and to *evaluate* the idea or model(s) presented. From the comparison of different approaches and models, we intend to highlight the comprehensiveness of the presented ideas, their underlying assumptions and their predictive ability. This will highlight the usefulness and limitations of an informed, analytical approach.

In a typical class, I will ask one or more participants to start the class by answering a specific question. Anyone who has thoroughly prepared should be able to handle such a lead-off assignment. After a few minutes of initial analysis, we will open the discussion to the rest of the class. As a group, we will then build a complete analysis of the situation.

Most managers spend very little time reading, and even less time writing reports. Most of their interactions with others are verbal. For this reason, the development of verbal skills is given high priority in this class. The classroom should be considered a laboratory in which you can test your ability to convince your peers of the correctness of your approach to complex problems and of your ability to achieve the desired results through the use of that approach. Things that have an impact on effective class participation include:

- Is the participant a good listener?
- Is the participant willing to interact with other class members?
- Are the points made relevant to the discussion? Are they linked to the comments of others?
- Do the comments add to our understanding of the situation?
- Does the participant distinguish among different kinds of data (i.e., facts, opinions, beliefs, concepts)?
- Is there a willingness to test new ideas, or are all comments "safe" (e.g., repetition of facts without analysis and conclusions)?

## B. MIDTERM (30%)

The midterm exam will be in-class, open book, and consist of two to three questions. The midterm will require integration of all course concepts and frameworks covered to date.

## C. FINAL (30%)

Thirty percent of your grade will come from a take-home case-based final. You will have until 5pm April 28 to complete the case and should be submitted directly to be via email. Your final case write-up should be no more 10 pages, in times new roman font, with 1" margins, and be double spaced. Appendices and title pages can also be included and do not count towards the 10 page limit.

The final case is the Encyclopaedia Britannica and is included in the case pack.

## GUIDELINES FOR CASE REPORTS

All case reports (both individual and group) should be no more 10 pages, in times new roman font, with 1" margins, and be double spaced. Appendices can also be included and are not counted towards the 10 page limit.

The reports should consist of a tightly focused analysis, diagnosis, and proposal that addresses what, in your opinion, are the crucial elements of the company's situation. Do not answer the questions from the syllabus directly. Thinking through the study questions, however, will help you in thinking through the case. Lastly, no outside information (articles, internet, etc.) should be used/consulted when analyzing the case. You should only make use of information provided within the case.

## Academic Honesty

Academic dishonesty is a serious offense. Georgia Tech has established a clear honor code that can be viewed in its entirety at: <http://honor.gatech.edu/>.

Examples of academic dishonesty include:

- *Possessing, using or exchanging improperly acquired written or verbal information in the preparation of any essay, laboratory report, examination, or other assignment included in an academic course;*
- *Substitution for, or unauthorized collaboration with, a Student in the commission of academic requirements;*
- *Submission of material that is wholly or substantially identical to that created or published by another person or person, without adequate credit notations indicating authorship (plagiarism);*
- *False claims of performance or work that has been submitted by the claimant;*
- *Alteration or insertion of any academic grade or rating so as to obtain unearned academic credit;*
- *Deliberate falsification of a written or verbal statement of fact to a member of the Faculty so as to obtain unearned academic credit;*
- *Forgery, alteration or misuse of any Institute document relating to the academic status of the Student.*

Suspected cases of academic dishonesty will be investigated by the Office of Dean of Students.

# Schedule of Sessions and Readings

Please note that I reserve the right to change readings and schedule at any time during the course.

## Section 1: Introduction

### Class 1

Monday, January 6

### Course Introduction

## Section 2: Creating Value Through Innovation

### Class 2

Wednesday, January 8

Readings:

### Evolution of Technological Innovation

Gladwell, Malcolm. "Smaller: The Disposable Diaper and the Meaning of Progress." *The New Yorker*, November 16, 2001.

Foster, Richard. "The S Curve: A New Forecasting Tool." Chapter 4 in Innovation: The Attacker's Advantage. New York, NY: Summit Books, 1986.

### Class 3

Monday, January 13

Readings:

### The Nature and Evolution of Technology Markets

Moore, Geoffrey A. *Crossing the Chasm*, Harper Collins, 2002. Chapters 1 and 2.

### Class 4

Wednesday, January 15

Readings:

### Competition and Technological Evolution

Gladwell, Malcolm. "The Televisionary." *The New Yorker*, May 27, 2002.

Christensen, Clayton. *The Innovator's Dilemma*: HBS Press, 2011. Chapter 3.

### Class 5

Wednesday, January 22

Case:

### Competition and Technological Evolution II

Continuous Casting Investments at USX Corporation (HBS: 9-697-020)

Case Preparation Questions:

1. Do you think Kappmeyer should sign the proposal? Why?
2. Rather than consider whether USX should install CSP in Mon Valley, consider the broader question of whether USX should invest in or participate in this technology.

### Class 6

Monday, January 27

Case:

### Innovation as Process

What's the Big Idea? (HBS: 9-602-105)

Readings:

Fleming, Lee. "Breakthroughs and the Long Tail of Innovation." *MIT Sloan Management Review* 49, no.1 (2007), pgs. 69-74.

Case Preparation Questions:

1. Why does BIG seem better able to identify and bring to market innovative toy

concepts, whereas the major toy companies feel they are in a period of a “lack of innovation” (p.3)?

2. How proprietary or defensible is BIG’s system? Could one of the major toy companies replicate it? Why or why not?
3. Can BIG replicate its system in other industries, such as lawn and garden?

## **Class 7**

*Wednesday, January 29*

Case:

## **Innovation and Experimentation**

Bank of America (A) (HBS: 9-603-022)

Readings:

Anderson, Eric T. and Duncan Simester. “A Step-by-Step Guide to Smart Business Experiments.” *Harvard Business Review* March 2011 Vol. 89 Issue 3, p98-105

Case Preparation Questions:

1. How would you characterize Bank of America’s new system for new developing services? Focus on its process, organization, management, and culture.
2. Compare Bank of America’s approach to other product development systems. What are the differences? What are the similarities? Does it matter if it is a product or service that is being developed?
3. What is the role of experimentation? How can companies maximize their learning from experimentation?
4. Decision point: Should Butler and Brady accept ten additional bank branches into its experimentation portfolio? Why or why not? Please be prepared to discuss your specific plans on how they should respond to senior management’s offer.

## **Class 8**

*Monday, February 3*

Case:

## **Lead User Analysis**

Innovation at 3M Corp. (HBS: 9-699-012)

Readings:

Urban, Glen L., and Eric von Hippel. “Lead User Analyses for the Development of New Industrial Products.” *Management Science* 34 (5), 1998, pgs. 569-582.

Gans, Joshua, and Eric von Hippel. “To Stay Ahead of Disruption’s Curve, Follow Lead Users”:

[http://blogs.hbr.org/cs/2012/12/to\\_stay\\_ahead\\_of\\_disruptions\\_curve.html](http://blogs.hbr.org/cs/2012/12/to_stay_ahead_of_disruptions_curve.html)

Case Preparation Questions:

1. How has 3M’s innovation process evolved since the company was founded? Why, if at all, does 3M, known as a “hothouse” of innovation, need to regain its historic closeness to the customer?
2. How does the Lead User research process differ from and complement other traditional market research methods?
3. Has the Medical-Surgical team applied the Lead User research process successfully? Why or why not?
4. What should the Medical-Surgical Lead User team recommend to Dunlop: the three new product concepts or a new business strategy? What are the risks to the new Lead User process at 3M? What are the risks to the Medical-Surgical business unit?

## Section 3: Capturing Value Through Innovation

### Class 9

Wednesday, February 5

Readings:

### Organizing Teams for Innovation

Gladwell, Malcolm. "The Bakeoff: Project Delta Aims to Create the Perfect Cookie." *The New Yorker*, September 5, 2005.

Clark, Kim, and Steven Wheelwright. "Organizing and Leading Project Teams." Chapter 8 in *Revolutionizing Product Development*. Free Press, 1992.

Case Preparation Questions:

1. How does team organization impact the innovation process?
2. How did the groups in the Bakeoff differ their approach to innovation and development?
3. Under what circumstances would you prefer each type of team?
4. How do the different modes of organizing innovation map to Wheelwright and Clark's typology for project teams? When are their teams more likely to be effective?

### Class 10

Monday, February 10

Case:

### Incentives and the Organization of Internal Innovators

Glaxo-Smith Kline: Reorganizing Drug Discovery (HBS: 9-605-074)

Readings:

Goffee, Rob, and Gareth Jones. "Leading Clever People." *Harvard Business Review* 85 no. 3 (2007), pgs 72-79.

Pisano, Gary "The Life Sciences Revolution: A Technical Primer" (HBS: 9-602-118)

Case Preparation Questions:

1. What is your assessment of Yamada's proposal for the Centers of Excellence in Drug Discovery (CEDD)? What are its strengths and weaknesses relative to other potential organizational structures for R&D?
2. Do you agree with Yamada's goal of providing researchers at GSK with incentives similar to those facing researchers by small biotechnology companies? If yes, to what extent will the CEDDs allow GSK to achieve this goal? If no, how, if at all, would you change the incentives provided in the CEDD model?
3. What are the key challenges that you think Yamada will face in implementing the CEDDs?

### Class 11

Wednesday, February 12

Readings:

### Agency and Innovation

Besanko, D., D. Dranove, M. Shanley, and S. Schaefer. *Economics of Strategy*. 2004. Read Chapter 14, pgs 476-501.

**Class 12**

Monday, February 17

Case:

**Incentives and the Organization of External Innovators**

D-Wave Systems (HBS: 9-604-073)

Readings:

Huston, Larry, and Nabil Sakkab. "Connect and Develop: Inside Proctor & Gamble's New Model for Innovation." *Harvard Business Review* 84 no. 3 (2006), pgs 58-67.

Case Preparation Questions:

1. Evaluate D-Wave's progress as a venture.
2. What are the strengths and weaknesses of D-Wave's Research Collaboration Network? Why do scientists collaborate with D-Wave? What do they get in return?
3. Should D-Wave centralize its R&D activities? If not, when should they do this, if ever?

**Class 13**

Wednesday, February 19

Case:

**Organizing Innovation Between Firms and Communities**

IBM and Linux (HBS: 9-903-083)

Case Preparation Questions:

1. How does the open source community manage itself? How does the open source development model differ from proprietary models?
2. Why is an alliance with the Linux development community potentially attractive to IBM? What could IBM accomplish in conjunction with the community that it could not on its own?
3. What can IBM offer that would be attractive to the Linux development community? What are the different options IBM could take? How is the community likely to react?
4. What are the risks and benefits of collaborating with this community? What barriers stand in the way of a successful alliance?

**Class 14**

Monday, February 24

Case:

**Value from Intellectual Property: Patents & Beyond**

Intellectual Ventures (HBS: 9-710-423)

Readings:

Rivette, Kevin G. and Kline, David. "Discovering New Value in Intellectual Property." *Harvard Business Review*, January/February 2000.

Case Preparation Questions:

1. Why is the market for IP so illiquid and inefficient today?
2. Does Intellectual Ventures have the right strategy to solve the IP market inefficiencies? Why or why not? How does it compare with the alternative IP intermediation models, in particular patent trolls, RPX, and online IP platforms?

**Class 15**

Wednesday, February 26

Case:

**Turning Academic Science into Commercial Technology**

SpudSpy (HBS: 9-605-059)

Case Preparation Questions:

1. What went wrong?
2. Why are Anderson and Huang so upset? Should they be?
3. Can the project be salvaged?
4. What's your assessment of Cohen's role thus far? What would you recommend to Cohen as his next steps? What are his options?
5. What's your assessment of the university's technology commercialization office? What should the role be of such offices?

**Class 16**

Monday, March 3

Readings:

**Drivers of Commercialization Strategy**

Teece, David. "Capturing Value from Technological Innovation: Integration, Strategic Partnering and Licensing Decisions." In Managing Strategic Innovation and Change. Oxford University Press. 1997. Pages 287-297 only.

Gans, Joshua and Scott Stern. "The Product Market and the Market for Ideas: Commercialization Strategies for Technology Entrepreneurs." *Research Policy*, Vol. 32, Issue 2, 2003, pgs. 333-350.

**Class 17**

Wednesday, March 5

Case:

**Innovation Ecosystems**

America Well (HBS: 9-510-061)

Readings:

Adner, Ron. The Wide Lens, Introduction and Chapter 1

Case Preparation Questions:

1. Do you share the assessment of the founders regarding the potential of Online Care to revolutionize healthcare delivery?
2. What value do you see "Team Edition" creating? What barriers to its adoption do you foresee?
3. Which of the new market opportunities did you see as most promising?
4. If you were in the shoes of American Well management, would you pursue any of the next- generation options (products or markets) in 2010, or would you just focus on the core platform with the core target market?



## Section 4: Innovation Platforms and Portfolios

### Class 18

Monday, March 10

### Setting a Standard and Network Effects

Case:

Electronic Arts in Online Gaming (HBS: 9-804-140)

Readings:

Shapiro, Carl and Hal Varian, Information Rules, Chapter 7, pgs 173-218.

Case Preparation Questions:

1. Microsoft's Xbox unit has accrued cumulative operating losses of \$3.5 billion through mid- 2004. Is this investment justified?
2. Why do video game platform providers choose to sell consoles at breakeven or loss-making prices, profiting instead from royalties charged to game publishers?
3. Will console-based online gaming emerge as a mass-market phenomenon? How important will network effects be?
4. What are the advantages and disadvantages to the approaches adopted by Microsoft and Sony for managing relationships with third-party providers of online-enabled console games? Why are their strategies so different? Is one strategy flawed?

### Class 19

Wednesday, March 12

### Midterm

### Class 20

Monday, March 24

### Lead Time and First-Mover Advantage

Case:

Adobe Systems, Inc. (HBS: 9-801-199)

Readings:

Lieberman, Marvin and David Montgomery, "First-Mover Advantages," *Strategic Management Journal*, 1988, Vol. 9, pgs. 53-55.

Case Preparation Questions:

1. How was Postscript established as a de facto standard? How did Adobe make money from Postscript, despite its being an "open" standard?
2. Which firm is currently in a stronger position to control de facto standards in the eBook space: Adobe or Microsoft?
3. What should Adobe do? How can they win the standards war? Should they focus on eDocs or eBooks? Will the eBooks market tip or will there be multiple standards? How can Adobe make money in this market?

### Class 21

Wednesday, March 26

### Portfolio Management

Case:

Le Petit Chef (HBS: 9-602-080)

Case Preparation Questions:

1. What should Gagné do? Specifically, which projects should she fund and why? How should she handle the executive meeting?
2. What factors explain Le Petit Chef's poor performance? What actions would you recommend to remedy the situation?

## Section 5: New Sources of Innovation

### Class 22

Monday, March 31

#### Internal vs. External Sources of Renewal

Case:

Intel Research: Exploring the Future (HBS: 9-605-051)

Readings:

Utal, Bro. "The Lab That Ran Away From Xerox." *Fortune*, 1983. Reprinted in Strategic Management of Technology and Innovation. New York, NY: McGraw-Hill, 2003.

Case Preparation Questions:

1. Why do firms get blindsided by new technologies? Is Intel more or less prone to this problem?
2. Evaluate Tennenhouse's approach to designing an exploratory research organization? What are its main elements? How do these elements work together? How could its design be improved?
3. Should Intel fund projects like PlanetLab and Sensor Networks? How do they generate value?
4. How can Tennenhouse measure the performance of his organization? And of the Berkeley Lablet?

### Class 23

Wednesday, April 2

#### Innovation through Corporate Venturing

Case:

Inxight (HBS: 9-699-019)

Readings:

Wolcott, Robert, and Michael Lippitz. "The Four Models of Corporate Entrepreneurship." *MIT Sloan Management Review* Vol. 49, no. 1, 2007, pgs. 75-82.

Case Preparation Questions:

1. Why has Xerox had trouble capturing value from its technology in the past?
2. Why has Xerox created Xerox New Enterprise as an incubator? How does the XNE structure work? How is it managed?
3. What technologies would fit well in such an incubator? What technologies would not?
4. What are the risks and benefits of Inxight's business model?
5. How aggressive should Trikha be in funding Inxight? How much money should he ask for for 1997?

### Class 24

Monday, April 7

#### Innovation through Internal Venturing

Case:

GE's Imagination Breakthroughs (HBS: 9-907-048)

Readings:

Stringer, Robert. "How to Manage Radical Innovation." *California Management Review*, Vol. 42, no. 4, 2000, pgs. 70-88.

Case Preparation Questions:

1. What is your evaluation of Immelt's new organic growth strategy? Why change GE's existing successful strategy? Is it reasonable to expect that a \$125 billion global giant can significantly and consistently outperform the underlying economic growth rate?
2. What action should the Transportation business take regarding the Hybrid

locomotive?

## Section 6: Wrap-up, Additional Topics, and Final

### Class 25

Wednesday, April 9

Readings:

### Geography and Innovation

Glaeser, Edward “Engines of Innovation” *Scientific American* 305, 50 - 55 (2011)

Kay, John “New York’s wonder shows planners’ limits” *Financial Times* March 27, 2013

Florida, Richard Rise of the Creative Class, Chapters 1 & 12.

### Class 26

Monday, April 14

Case:

### Open Innovation

Open Innovation at Siemens (HBS: 9-613-100)

Readings:

Chesbrough, Henry “The Era of Open Innovation” *MIT Sloan Management Review*, Spring 2003, Vol. 44, No. 3, pp. 35-41

Boudreau, Kevin J. and Karim R. Lakhani “Using Open Innovation to Identify the Best Ideas”, *MIT Sloan Management Review*, Fall 2013, Vol. 55 No. 1 pp. 41-48.

### Class 27

Wednesday, April 16

### Wrap-up

### Class 28 & 29

April 22 & 24

### Work on Final Case

Case Writeup:

The Crisis at Encyclopædia Britannica