

Strategy of Innovation

Preliminary Syllabus. Subject to change.

Instructor: Professor Annamaria Conti
E-Mail: annamaria.conti@unil.ch
Time & Location: Tuesday, 8:30 – 12:00, Zoom
Office Hours: By Appointment

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 startups and incumbents) 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.

NB: This course is open to PhD students.

Required Materials

1. **Book:** Strategic Management of Technological Innovation, Melissa A. Schilling, McGraw Hill
2. **Other Readings:** Will be posted on Moodle (no required text).
3. **Course Packet:** includes business cases (<https://hbsp.harvard.edu/import/699530>)

Grading Policy

A. Class participation (of which 5% to participation in discussion to group presentation)	20%
B. Midterm	60%
C. Group Presentation+Report	20%

PhD students are required to write a 15-page critique of a paper the instructor will provide to them. In their report, the students will: 1) provide a clear and concise summary of the paper; 2) describe the endogeneity issues the authors face; 3) provide an assessment of whether and how these issues are addressed; 4) describe the relevance of the research question by comparing the paper to the extant literature.

A. CLASS PARTICIPATION (20%)

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)?

Five percent of the participation grade will be specifically allocated to the participation in the discussion to the group presentations.

B. MIDTERM (60%)

The midterm exam will be in-class, closed-book, and consist multiple-choice questions. The midterm will require integration of all course concepts and frameworks covered to date. (The organization of make up exams will be discussed in class)

C. GROUP PRESENTATION+REPORT (20%)

Students should identify a relevant issue given the topics we covered in class and develop a plan to address this issue using the knowledge they acquired in class. Students are then required to: 1) produce a 3-page summary critically discussing the issue they have identified and 2) present the results of their investigation. Further details regarding the presentation will be provided in class.

Presentations will last for 25 minutes, followed by a 10-minute discussion. Be sure to fully cite all references. Also, make sure you send me your report one week in advance so that I can share it with the rest of the class.

Academic Honesty

Academic dishonesty is a serious offense.

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;*
- *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.*

Schedule of Sessions and Readings

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

Class 1

February 16

Readings:

Course Introduction

Schilling, M.A. *Strategic Management of Technological Innovation*, McGraw-Hill, 2017. Chapters 1 and 2

“Which market model is best?” *The Economist*, September 12th, 2020

Class 2

February 23

Readings:

Watch: Cross the innovation chasm: Geoffrey Moore

<https://www.youtube.com/watch?v=NJHmCcWMT9g>

Same as Class 3

Class 3

February 23

Readings:

Evolution of Technological Innovation and The Nature and Evolution of Technology Markets

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.

Catalini, Christian and Tucker, Catherine. When early adopters don't adopt. *Science*, 2017, vol. 357, no 6347, p. 135-136.

Schilling, M.A. *Strategic Management of Technological Innovation*, McGraw-Hill, 2017. Chapter 3

Class 4

March 2

Readings:

Competition and Technological Evolution I and II

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

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

Lepore, Jill. "The Disruption Machine," *The New Yorker*, June 23, 2014

Christensen, Clayton, Michael Raynor and Rory McDonald. "What is Disruptive Innovation?" *Harvard Business Review*, December 2015 p. 44-53

Gans, Joshua. "The Other Disruption," *Harvard Business Review*, March 2016, pp. 78-84

Gans, Joshua. "Keep Calm and Manager Disruption," *MIT Sloan Management Review*, 2016, Vol 53(3).

Case: Netflix in 2011 (HBS 615-007)

Case Preparation Questions:

1. Is Netflix's move to online streaming a disruptive innovation in the movie rental industry? Why?
2. Analyze the first business model of Netflix (DVD per mail/pay per rental) using the Theory of Disruption. Why was it unsuccessful? How did Netflix react?

Class 4a

March 9

Readings:

Innovation as Process

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

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

Case Preparation Questions:

1. How proprietary or defensible is BIG's system? Could one of the major toy companies replicate it? Why or why not?
2. 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)?
3. Can BIG replicate its system in other industries?

Class 4b

March 9

Readings:

Innovation and Experimentation

Thomke, Stefan and Jim Manzi. "The Discipline of Business Experimentation." *Harvard Business Review* December 1 2014 Vol. 92 Issue 12, p70-79

Case: Team New Zealand (A) (HBS: 9-697-040)

Case Preparation Questions:

1. How would you evaluate Team New Zealand's use of simulation in the design process? What are its advantages and disadvantages? How did their approach to simulation differ from that used by other syndicates?
2. Which yacht construction strategy should Team New Zealand follow? Why? How much improvement would you expect from each?

Class 5

March 16

Readings:

Lead User Analysis

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.

Hippel, Eric Von., Ogawa, Susumu S., et De Jong, Jeroen. "The Age of the Consumer-Innovator." MIT Sloan Management Review: MIT's journal of management research and ideas, 2011, vol. 53, no 1, p. 27-35.

Case:

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

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. 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?

Video

<https://www.youtube.com/watch?v=tNKrX1QxN6U>
<https://www.youtube.com/watch?v=31iUEuwi740>

Class 6a

March 23

Readings:

Organizing for Innovation

Schilling Book: Chapters 10 (*excluding managing innovation across borders*) and 12

"Google Grows UP", the Economist, August 1st 2020

Case:

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

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 6b

March 23

Readings:

Organization and Incentives for Internal Innovators

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

Case:

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

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 7

March 30

Readings:

Incentives and the Organization of External Innovators

Schilling Chapter 8

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:

Video: Quantum Computers Explained – Limits of Human Technology, Kurzgesagt: <https://www.youtube.com/watch?v=JhHMJCUmq28>

Case Preparation Questions:

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

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 8

April 6

Readings:

Value from Intellectual Property: Patents & Beyond

Schilling Chapter 9

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

Video: <https://www.entrepreneurship.org/learning-paths/intellectual-property/intellectual-property-and-strategy>

Case:

Intellectual Ventures (HBS: 9-710-423)

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 and online IP platforms?

Class 9

April 13

Readings:

Geography and Innovation

Richard Florida. "The Transformation of Everyday Life."

Glaeser, Edward. "Engines of innovation". *Scientific American*, 2011, vol. 305, no 3, p. 50-55. (incl. Bettencourt, West "article")Catalini, Christian. "Microgeography and the direction of inventive activity". *Management Science*, 2017, vol. 64, no 9, pp. 4348-4364."Way to make a leaving", *The Economist*, September 12th 2020

"Cities growing apart",

https://www.richmondfed.org/publications/research/econ_focus/2012/q2-3/~media/02CD36EC3291410AA9B3F762F14860D7.ashx

Video:

https://www.frdb.org/page/events/categoria/rdb-lectures/scheda/frdb-lecture-enrico-moretti/doc_pk/11124**Class 10**

April 20

Readings:

Drivers of Commercialization StrategyTeece, David. "Profiting from Technological Innovation: Implications for integration, collaboration, licensing and public policy." *Research Policy*, Vol. 15, Issue 6, 1986, pgs. 285-305. (Only read pages 287-297.)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.Gillette, Felix and Gerry Smith. "All Over But The Streaming." *Bloomberg Businessweek*, August 5th 2019, pgs. 10-13**Class 11**

April 27

Readings:

Setting a Standard and Network Effects

Schilling Chapter 4

Case:

Fasten: Challenging Uber and Lyft with a New Business Model (HBS: 9-616-062)

Case Preparation Questions:

1. What explains the rapid growth of ridesharing companies such as Uber and Lyft?
2. What explains Fasten's successful entry into the Boston market?
3. Is Uber's valuation too high or too low?
4. Is the rideshare market winner takes all?
5. How will the self-driving vehicle technology affect the industry?

Group Presentations**May 4, 11, 25****Midterm Exam****May 18**