15.S06 Innovation-Driven Advantage
Spring 2015 – E51-325
Section A: MWF 08:30am-10:00am
Section B: MWF 10:00am-11:30am

Teaching Assistants:
Chuan Zhang (czhang86@mit.edu, Section A)
Elana Berger (elanab@mit.edu, Section B)

COURSE PURPOSE
In what sense can organizations ever claim to “manage” innovation? Creativity, invention, innovation: this sounds like a list of activities that should resist any attempt to routinize them. If we were to ask a random set of people in the streets where good ideas come from, chances are that they would mention something like a “Eureka moment” or a “Flash of Genius.” Think of Archimedes in his tub, or Isaac Newton’s otherworldly contemplations being interrupted by the fall of an Apple.

And yet, we now understand that there is much more to the creative process and innovating than merely luck. There is ample research suggesting that innovation is often a collective process, rather than the work of lone geniuses. In the same vein, we understand much more about the kinds of environments that are more likely to be fruitful grounds for an elevated rate of creative insights.

The course has four parts. The first simply tries to answer the question “where do innovations come from?” Fifty years ago, we thought we knew the answer to this question: from the R&D labs of large, vertically integrated, diversified corporations such as AT&T, Merck, DuPont, GE, IBM, etc. With the demise of the Central R&D lab as an engine of innovation, we now know that a firm cannot count solely on its internal capabilities to innovate successfully. As a result, we will spend the time to explore alternative sources for ideas, such as local innovation ecosystems, distributed crowds, or latent innovators (e.g., participants in innovation contests).

The second part of the course asks how people engaged in the innovation process (the so-called “smart creatives” in the parlance of a recent book by Eric Schmidt and Jonathan Rosenberg) can ever be managed. We know that they tend to be an unruly bunch. Command and control is unlikely to work well. But what will? And should we think about rewarding innovators if they happen to work for someone else — a firm we are thinking about acquiring, or a start-up would like to partner with us?

The third part of the course tries to shed light on the innovative process itself. Are there best practices that one can bring to bear? Or is everything we know contingent of the details of the industry, the time period, etc. Can we ever hope to be systematic? So we will talk about stage-gate product and service development processes, as well as portfolio techniques and ways to think about building an experimentation capacity for your organization.
The fourth and final part of the course tries to link these insights to the central problem of competition in innovation-intensive industries. Everyone talks about “disruptive innovation” these days. The term has become a buzzword. I will try to help you think clearly about it. This will start from a set of clear definitions (e.g., “disruptive” is just a different way to say or mean “novel,” why do we need a new term at all?). But the more interesting insights, I believe, will come from drawing connections between the first part of the class — which are organizational in nature — with the central problem of strategy: resolving the tension between the creation and the capture of economic value.

**Attendance & Class Preparation**

We will open every class by asking someone to briefly summarize one of the reading, or to briefly summarize the case. In the case of a reading, you should be able to briefly outline the problem that the article addresses, describe the core points of the readings, and offer your analysis of the strengths and weaknesses of the reading’s central argument. In the case of a case, you should be able to identify the key issues, problems and opportunities facing the central protagonists, to articulate and evaluate alternative approaches to the problems, and to describe the course of action that you recommend and the reasons for your recommendations.

**Recommended Books**

Students often ask me to recommend a book, or set of books, about innovation strategy, or the management innovation. And I am usually reluctant to do so. The reason is that there is no book that is truly integrative of different perspectives. The typical book on innovation starts from an interesting nugget of wisdom, and then extends it over the course of an entire volume to try to persuade the reader that the “problem of innovation” has been solved. The shelf life of this kind of guru-authored work is extremely short – on the order or months. The books I list below are not perfect, but in my view, they at least escape this rather common trap. Certainly, reading them made me mull their key ideas over, and they have inspired some research. I am hoping that you will find their reading rewarding as well. If you find yourself pressed for time this semester, do not worry. They are not required for the class. Just a suggested reading list on your next long flight to Asia or Europe.


REQUIREMENTS, GRADING, & DUE DATES

- **Active Class Participation (20%).** For each class, each student is expected to prepare readings and case studies, listen closely to class discussion, and share their ideas. More than one absence from the class will severely impact this component of the grade.

- **Four Individual Case Memos (4×5%=20%).** We will be asking you to write four short case memos, out of possible seven cases. These will center on a question (or set of questions) useful to help you focus on the strategic dilemma faced by the protagonists in the case. Two pages maximum. Grading will be on a √/√+/√- basis. The cases eligible for a case memo are: Google X, Threadless, Netflix, NIH, Disney/Pixar, Le Petit Chef, and GE.

- **Group Homework Assignments (10%+10%=20%).** Three group homework assignments will be given, but your group should only complete two of them. Assignment #1 asks you to outline the contours of novel grant mechanism designed to stimulate high-risk research at the National Institutes of Health (NIH). Assignment #2 asks you to design a project portfolio for Le Petit Chef, a French microwave oven company. Assignment #3 asks you to “core” a new baby-sitting/nanny platform, with particular attention given to platform governance issues. Four to five pages, plus exhibits.

- **Innovation Challenge Report (10%+30%=40%).** Please select an innovation-related challenge that your previous or current employer used to face, or is currently facing. Before February 13th, write an initial memo describing the challenge, why it proved vexing, and initial thoughts about solutions (two pages max.). Let it simmer for a while. On the last day of class, a final report (7 pages min., 10 pages max., plus exhibits) will be due. The goal is to use the frameworks of the class to show how your perspective on this particular challenge has evolved, and what novel approaches you feel you could bring to bear to help your organization tackle the challenge.

COURSE MATERIALS

Assigned case readings are available on Stellar. The site is a critical complement to the lectures. Before each class, Stellar will include links to points of interest (e.g., company websites), as well as supplementary reading materials and reading guides for several of the cases included in the course. We will also post the slides after each lecture. Finally, Stellar will include key course information such as the syllabus, assignments, due dates, and updates. You should check the site on a regular basis.

GROUP FORMATION

You should organize into groups of exactly four students to complete the group assignments. It is of no consequence if the composition of your group spans the two sections for the class, with one caveat: On February 25th, it is imperative that you appear in class with your whole group. Please take this constraint into account when forming your groups! The TAs will create a Google document to help the group formation process.
## Course Outline

### Introduction

W Feb 4

### Sources of Innovation

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<tr>
<th>Topic</th>
<th>Case/ Speaker</th>
<th>Day</th>
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<tbody>
<tr>
<td>Innovating from Within</td>
<td>Google X</td>
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<td>Feb 6</td>
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<td>User Innovation &amp; Crowdsourcing</td>
<td>Threadless</td>
<td>M</td>
<td>Feb 9</td>
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<td>Prizes &amp; Contests</td>
<td>Netflix Prize</td>
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<td>Feb 11</td>
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<td>Ecosystem Stakeholders*</td>
<td>Negotiation Exercise: Flash of Genius</td>
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<td>Feb 13</td>
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<td>Local Innovation Ecosystems</td>
<td>Guest Lecturer: Scott Stern</td>
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<td>Feb 17</td>
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### Managing Innovators

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<tr>
<td>Incentives for Innovation</td>
<td>Breakthrough Research Grants</td>
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<td>Feb 18</td>
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<td>Building an Innovation Culture</td>
<td>Guest Lecturer: Paul English</td>
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<td>Vertical Integration and Innovators’ Incentives</td>
<td>Case: Disney and the Pixar Acquisition</td>
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### Organizing the Innovation Process

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<tr>
<td>Managing Innovation Project Portfolios*</td>
<td>Le Petit Chef</td>
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<td>Feb 25</td>
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<tr>
<td>From Staged to Spiral PD Processes</td>
<td>Guest Lecturer: Steven Eppinger</td>
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<td>Feb 27</td>
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<tr>
<td>Lean Start-up &amp; Experimentation</td>
<td>Guest Lecturer: Christian Catalini</td>
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### Bringing Innovations to Market

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<td>Commercialization Strategies</td>
<td>Lecture</td>
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<td>Mar 4</td>
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<td>Thinking Clearly About Disruption</td>
<td>Lecture</td>
<td>F</td>
<td>Mar 6</td>
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<td>Platforms Everywhere?</td>
<td>Lecture</td>
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<td>Mar 9</td>
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<td>Simple Rules</td>
<td>Guest Lecturer: Don Sull</td>
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<td>Mar 11</td>
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### Wrap-up

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<td></td>
<td>Case: GE and the Industrial Internet</td>
<td>F</td>
<td>Mar 13</td>
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*These two sessions will last 30 minutes more than usual: Section A will run from 8:00am to 10:00am; Section B will run from 10:00am to 12:00pm.
Class 1  Introduction

February 4


Questions for Discussion
The article describes three ways to organize a team in charge of “reinventing the cookie.” First read until page 128, right before the paragraph that begins with “The Mattson kitchens are a series of large…” I’d like you to ponder the following question (before you learn the results of this unusual experiment): If you had the choice, which team would you have liked to manage, and why? [Try to record your opinion honestly]. Then read until the end. Where you surprised by the result? Why/Why not?

Class 2  Innovating from Within

February 6


Optional Reading

Questions for Discussion
Should Google X (1) be dramatically pared down or shut down; (2) continue at about the same level of corporate funding; (3) be dramatically scaled up (e.g., 2× the level of funding?) Why/why not?
How should the performance of a division like Google X be evaluated?

Class 3  User Innovation & Crowdsourcing

February 9

Case: Threadless: The Business of Community [HBS #9-608-707]


Questions for Discussion
What are the barriers to entry for this kind of business? In what other industries might this model work? What should be Threadless’ response to the offer from the large retailer, and Why?
Class 4  **Finding External Innovators: Prizes & Competitions**  
February 11  
*Case: Designing the Netflix Prize (A) [HBS #9-615-015]*


**Questions for Discussion**
Why is Hastings choosing to design a contest to solve the Cinematch performance problem?
Is Cinematch an appropriate setting for such a contest? Why?
What contest design parameters would you recommend Hastings adopt as he is setting up the contest?

Class 5  **Incentives for Ecosystem Stakeholders**  
February 13  
*Case: Flash of Genius*

In-Class Video Excerpt: *Flash of Genius, 2008.*


Class 6  **Engaging a Local Innovation System**  
February 17  
*Guest Lecturer: Scott Stern*


Class 7  **Incentives for Innovation**  
February 18  
*Case: Funding Breakthrough Research at the NIH [Sloan #15-161]*

Hartford, Tim. “*The Airplane that Saved the World.*” Slate, May 16 2011.

**Questions for Discussion**
What is the problem that Joan is trying to solve? How does it manifest itself in the day-to day?
What features (if any) of the HHMI model should Joan think about importing into the new proposed R99 “breakthrough research” grant mechanism?
How would you design the R99 grant program? Think along multiple decisions (eligibility, review process, timeline and renewal, evaluation, etc.)
Class 8  Building an Innovation Culture  February 20
Guest Lecturer: Paul English, co-founder of Blade, LLC and kayak.com

Lemann, Nicholas. 2014. “When G.M. was Google.” The New Yorker, December 1, pp. 76-82.

Optional Reading

Class 9  Vertical Integration and Innovators' Incentives  February 23
Case: The Walt Disney Co. and Pixar Inc. [HBS #9-709-462]

Questions for Discussion
Which is greater: the value of Pixar and Disney in an exclusive relationship, or the sum of the value that each could create if they operated independently of one another or were allowed to form relationships with other companies? Why?

Assuming that Pixar and Disney are more valuable in an exclusive relationship, can that value be realized through a new contract? Or is common ownership required?

If Disney does acquire Pixar, how should Bob Iger and his team organize and manage the combined entity? What challenges do you foresee, and how would you meet them?

Class 10  Managing R&D Project Portfolios  February 25
Case: Le Petit Chef [HBS #9-602-080]


Questions for Discussion
What should Brigitte propose? Specifically, which projects should she fund and why? How should she handle the executive meeting?

How would you change the portfolio process at Le Petit Chef?

Class 11  From Staged to Spiral Product Development Processes  February 27
Guest Lecturer: Steven Eppinger

Class 12  **Lean Start-up Methodologies & Experimentation Capacity**  March 2  
*Guest Lecturer:* Christian Catalini


**Questions for Discussion**

Why is it so difficult for venture capital firms to identify future winners? And for a large firm to identify high-potential projects? Could you adopt the VC model within a large firm? And if so, how? Under which conditions would you prefer performing an experiment over using historical data? What about the other way around?

Class 13  **Commercialization Strategies**  March 4


**Questions for Discussion**

Did your former company rely more on secrecy or IP to appropriate the knowledge generated by its innovations? What were the company’s key complementary assets? Were they tightly held/controlled by your company, or fairly generic in nature?

Class 14  **Thinking Clearly About Disruption**  March 6


**Optional Reading**


Class 15  **Multisided Platforms & Platform Strategy**  March 9

Class 16  **The Challenges of Execution**  
Guest Lecturer: Donald Sull


Class 17  **Wrap-up: Enterprise Transformation**  
*Case: GE and the Industrial Internet [HBS #9-614-032]*

**Questions for Discussion**
How would you assess GE’s Industrial Internet initiative? How realistic is the proposed revenue model change to outcomes-based services? Focus on one of GE’s Business Units and develop one specific action plan for Comstock and Ruh to work together to accelerate Industrial Internet efforts over the next three years.