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15.374 Organizing for Innovation

Spring 2024

E51-335 MW 8:30am-10:00am

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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 three 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 final 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.

Attendance & Class Preparation

We will open every class by asking someone to briefly summarize one of the readings, 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 reading, 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.

Class Slack Channel

The class has a slack channel: # org4innov_spring2024. Many of you have already been added to it. I am hoping that it will become a lively discussion forum, for issues of substance as well as class-related administrative matters.

Recommended (but completely optional) books

Students often ask me to recommend a book, or set of books, about innovation strategy, or the management of 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 of 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. You can consider this just a suggested reading list on your next long flight to Asia or Europe.

Schmidt, Eric and Jonathan Rosenberg. 2014. *How Google Works.* New York: Grand Central Publishing.
Gans, Joshua. 2016. *The Disruption Dilemma.* Cambridge, MA: The MIT Press.
Gertner, Jon. 2012. *The Idea Factory: Bell Labs and the Great Age of American Innovation.* New York: Penguin Press.
Harford, Tim. 2011. *Adapt: Why Success Always Starts with Failure.* New York: Farrar, Strauss & Giroux.
Johnson, Steven. 2010. *Where Good Ideas Come From: The Natural History of Innovation.* New York: Riverhead Books.
Lerner, Josh. 2012. *The Architecture of Innovation.* Boston, MA: Harvard Business School Press.
von Hippel, Eric. 2006. *Democratizing Innovation.* Cambridge, MA: The MIT Press.
Utterback, James. 1994. *Mastering the Dynamics of Innovation.* Boston, MA: Harvard Business School Press.

REQUIREMENTS, GRADING, & DUE DATES

- Active Class Participation (25%). 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.
- 360° Group Evaluation (5%). Each group member will be evaluated by all group members at the end of the quarter. Substantial evidence that group work has been unevenly completed will be penalized.
- Two Individual Case Memos (2×10%=20%). We will be asking you to write two short case memos, the first on the Netflix Prize case, the second on the Disney/Pixar acquisition case. 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.
- Innovation Culture Reflection Memo (20%). Each student will complete a memo analyzing, commenting, praising/criticizing one of the "culture decks," the first from Netflix, the second from HubSpot, the third a recent blog post authored by Brian Armstrong , CEO of blockchain company Coinbase. Are these to be understood as manifestos for human resources in an era where intellectual capital is prized above all? Are they instead thinly disguised pieces of corporate PR? Would you be drawn to work at a company that advertised its approach to culture and motivation in such a way? *Four pages maximum*.
- Group Homework Assignment (30%). Due March 10th in the evening. I ask you to design a project portfolio for Le Petit Chef, a French microwave oven manufacturer. The deliverables are (i) a memo—recommended length 4-5 pages; and (2) a PowerPoint presentation summarizing your recommendations which you might be invited to present to the class. Both will need to be uploaded onto Canvas, where you can find the precise deliverables and due dates.

COURSE MATERIALS

Assigned case readings are available on Canvas. The site is a critical complement to the lectures. Before each class, Canvas 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, Canvas 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 four students to complete the group assignment. Sophia has created a Google document to help the group formation process (see the link of Canvas).

Reading Material

The readings will be organized in four categories:

1. Required: This category includes my flipped classroom videos and any other essential textbook readings, articles, or cases that students simply must read to not be lost in class. The three case studies (Disney/Pixar, Netflix Prize, & Le Petit Chef) definitely fall in the required category.
2. Recommended: Here I list other articles that would be really beneficial for students to read, but fall short of an absolute requirement.
3. Optional: This is deeper but truly optional information if you start to get curious about the topics we are covering.
4. "Geek Out": This is the really in-depth stuff—mostly academic papers—that I don't expect students to read at all. But it's there for those who really want to go deep on a particular topic.

Office Hours

I am committed to making myself available to students for questions, class-related or not. Just e-mail me and we will find a time to chat, either on zoom or in-person.

Who Can Register?

I welcome students from all around campus (including the Schools of Science and Engineering), as well as cross-registrants from Harvard or Wellesley. Class discussion is greatly enriched by having students with a range of experiences and career aspirations. However, I have a strict "no listener" policy. If you wish to take the class, you will have to do so for credit.

Course Outline

	Introduction			
1	Organizing for Innovation	Case: The Bakeoff	M	February 5th
	Sources of Innovation			
2	Skunkworks	Lecture/Discussion	W	February 7th
3	Internal Contests	Genesis Labs @ Novartis	M	February 12th
4	External Contests	Case: Netflix Prize	W	February 14th
5	Engaging a Local Innovation Ecosystem	Guest Lecturer: Scott Stern	T	February 20th
	Managing Innovators			
6	Vertical Integration and Innovators' Incentives	Case: Disney and the Pixar Acquisition	W	February 21st
7	Organizational Moonshots: The "ARPA Model"	Guest Lecturer: Ilan Gur	M	February 26th
	Organizing the Innovation Process			
8	Introduction to Design Thinking	Guest Lecturer: Tony Hu	W	February 28th
9	Building an Experimentation Capability	Lecture/Discussion	M	March 4th
10	Corporate Venture Capital	Guest Lecturer: Sue Siegel	W	March 6th
11	Managing Innovation Project Portfolios	Case: Le Petit Chef	M	March 11th
	Wrap-up			
12	Innovation Management as a Career	Guest Lecturer: Derek Christensen	W	March 13th

Class 1 **Introduction** February 5th

Gladwell, Malcolm. 2005. "The Bakeoff." *The New Yorker,* September 5, pp. 124-133. [REQUIRED]

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: Skunkworks** February 7th

Guest Speaker: Benoit Schillings, Chief Technology Officer, Google X

X—the Moonshot Factory. "The Gimbal." Version 2.0, July 2018. [REQUIRED]

Franklin-Wallis, Oliver. 2020. "Inside X, Google's Top-secret Moonshot Factory." *Wired UK,* February 17th. Available at https://www.wired.co.uk/article/ten-years-of-google-x. [REQUIRED]

Lerner, Josh. 2012. "Where R&D Came From." Chapter 2 in *The Architecture of Innovation*, pp. 19-36. Boston, MA: Harvard Business School Press. [RECOMMENDED]

Nelson, Richard. 1962. "The Link Between Science and Invention: The Case of the Transistor." *The Rate & Direction of Inventive Activity: Economic and Social Factors*. National Bureau of Economic Research, Princeton University Press, pp. 549-586. [GEEK OUT]

Questions for Discussion

How has X designed its operations to facilitate rapid iteration through ideas? What sort of ideas might this lead X to overlook? How should X evaluate its employees? How should Alphabet evaluate the performance of a division like X?

Class 3 **Internal Contests** February 12th

Case: The Genesis Labs at Novartis [HBS #9-620-007]

Guest Lecturers: Ian Hunt, Head of Genesis Labs, Novartis Institutes for Biomedical Research
Joshua L. Krieger, Harvard Business School

Krieger, Joshua, Nanda, Ramana, Hunt, Ian, Reynolds, Aimee, and Peter Tarsa. 2023. "Scoring and Funding Breakthrough Ideas: Evidence from a Global Pharmaceutical Company." Working Paper, Harvard Business School. [RECOMMENDED]

Class 4 **"The Smartest People Do Not All Work For You"** February 14th
Prizes & External Contests

Case: Designing the Netflix Prize (A) [HBS #9-615-015]

MacCormack, Alan, Murray, Fiona and Erika Wagner. 2013. "Spurring Innovation Through Competitions." *Sloan Management Review,* **55**(1): 25-32. [RECOMMENDED]

Memo Questions
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?

Netflix Prize Memo due!

Class 5 **Engaging a Local Innovation System** February 20th
Guest Lecturer: Scott Stern, MIT Sloan

Guzman, Jorge, Fiona Murray, Scott Stern, and Heidi L. Williams. 2024. "Accelerating Innovation Ecosystems: The Promise and Challenges of Regional Innovation Engines." *Entrepreneurship & Innovation Policy and the Economy* **3**: 9-75.

Porter, Michael E. and Scott Stern. 2001. "Innovation: Location Matters." *Sloan Management Review,* **42**(4): 28-36.

Class 6 **Vertical Integration and Innovators' Incentives** February 21st
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?

Disney/Pixar Prize Memo due!

Class 7 **Organizational Moonshots and the "ARPA Model"** February 26th

Guest Speaker: Ilan Gur, Advanced Research and Invention Agency

Azoulay, Pierre, Erica Fuchs, Anna P. Goldstein, and Michael Kearney. 2019. "Funding Breakthrough Research: Promises and Challenges of the 'ARPA Model'." *Innovation Policy and the Economy* **19**: 69-96. [RECOMMENDED]

Hartford, Tim. *"The Airplane that Saved the World."* Slate, 5/16/2011. [OPTIONAL]

Reinhardt, Benjamin. 2020. "Why Does DARPA Work?" https://benjaminreinhardt.com/wddw

Class 8 **Introduction to Design Thinking** February 28th

Guest Lecturer: Tony Hu, Riccio Graduate Engineering Leadership Program

Brown, Tim. 2008. "Design Thinking." *Harvard Business Review*, **86**(6): 84-92. [REQUIRED]

Class 9 **Building and Managing an Experimentation Capability** March 4th

Anderson, Eric T. and Duncan Simester. 2011. "A Step-by-Step Guide to Smart Business Experiments." *Harvard Business Review,* **81**(9): 96-103. [RECOMMENDED]

Kerr, William R., Nanda, Ramana, and Matthew Rhodes-Kropf. 2014. "Entrepreneurship as Experimentation." *Journal of Economic Perspectives,* **28**(3): 25-48. [GEEK OUT]

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?

Innovation Culture Reflection Memo due!

Class 10 **The Ins and Outs of Corporate Venture Capital** March 6th

Guest Lecturer: Sue Siegel, Former CEO, GE Ventures & Licensing

Lerner, Joshua. 2013. "Corporate Venturing." *Harvard Business Review,* **91**(10): 86-94.

Class 11 **Managing Innovation Project Portfolios** March 11th

Case: Le Petit Chef [HBS #9-602-080]

Wheelwright, Steven C. and Kim B. Clark. 1992. "Creating Project Plans to Focus Product Development." *Harvard Business Review,* **70**(2): 70-82. [RECOMMENDED]

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?

Le Petit Chef Group Memo and slide deck due!

Class 12 **Wrap-up: Innovation Management as a Career** March 13th

Guest Lecturer: Derek Christensen EMBA '21, Google