ISOM 4020: Innovation Management and Technology Entrepreneurship

Fall 2020

Professor Ohchan Kwon

Class Time and Location

- First class on September 7; Final class on December 4
- Meets every Monday 3:00 – 4:20 p.m. and Friday 10:30 – 11:50 a.m.
- Canvas web page: https://canvas.ust.hk/courses/33012
- Zoom links for online class: https://canvas.ust.hk/courses/33012/external_tools/2420
- Announcement, (some) assignments, and discussions via Microsoft Teams

Course Overview

Thanks to recent developments in various technologies, we see more entrepreneurial opportunities than ever before. In almost all industries, a large number of entrepreneurs armed with novel technologies are challenging incumbent businesses. Existing firms are monitoring entrepreneurs' market entry closely and adjusting their current business strategies. Investors are also paying close attention to entrepreneurial activities to seize new investment opportunities. It implies that all students need to understand what makes certain technology-based ventures successful and what makes them less successful. Regardless of initial career choice, most students will be asked to engage in different types of technology-based entrepreneurship at some point in their careers.

This course provides an integrated strategy framework to start and scale technology-based ventures. The course focuses on the critical choices that entrepreneurs need to make to take advantage of a new opportunity while also facing extreme uncertainty and resource constraint. The cases and assignments offer an opportunity to apply the framework to a diverse range of industries affected by emerging technologies, such as analytics, artificial intelligence, and digital platforms. After finishing the course, students will be able to identify and evaluate novel opportunities and develop business models and strategies to increase the chance of success.

This course is open to all students interested in technological innovation and entrepreneurship. The class is particularly appropriate for those seeking to:

- Become an innovation-driven entrepreneur, or work in a start-up company with influence on strategy development and implementation
- Have a career as an investment professional who has to evaluate start-up innovators
- Practice as a management consultant whose practice focuses on innovation-driven firms or high-tech industry segments

- Work in the "entrepreneurial side" of a large company aiming to develop new product lines based on novel technologies

Course Readings

Most background reading materials will be posted on Canvas and Teams before each class. This course includes a few Harvard Business School (HBS) cases and notes. I will announce how you can access those materials shortly.

Requirements, Grading, and Due Dates

Grading will be based upon the following components; 1) class participation (30+%), 2) individual assignments (40%), and 3) two team projects (30%). There is no mid-term or final exam in this course.

1. **Class Participation (30+%)**

   - In-class participation (10%)
   - Community participation (20%)
   - Etc bonus points (~5%)

This course is designed to be an interactive, discussion-based one. Participation is a critical element of this course because we learn from diverse perspectives. Such a principle must hold even when the course is offered in either online or hybrid mode. Therefore, I assign 10% of total scores based on your in-class participation.

In reality, students may face difficulty in participating in online environments for a variety of reasons. Similarly, the instructor faces difficulty in encouraging continuous participation from students. To maintain high-quality teaching, this course uses digital technologies actively. In particular, we will use [Microsoft Teams](#) for continued discussions before and after class. To encourage your participation here, I assign 20% of total scores based on your community participation.

For each topic, there are two main groups that you can participate in. First, you can ask clarification questions related to concepts and examples covered in classes in the "Clarifications" group. I will then address ambiguity either in class or on Teams. Second, you can post examples and news that are not directly mentioned but seemingly related to concepts in class in the "Discussions" group. Here, everyone can share their thoughts. I will mention high-quality posts during class as well.

For both categories, your participation will be evaluated based on ✓+/✓ basis. ✓+ is given if the comment or question is contributing significantly to the class discussion and classmates' learning. All other participation will receive ✓. Notice that there is no penalty for "wrong" answers, so please do participate without feeling pressure.

2. **Individual Assignments (40%)**

   - Lytro (10%)
   - Netflix (10%)

- FreshTec (10%)
- Getty Images (10%)
- Beepi (10%)
- ***One case assignment with the lowest score will not be used for final grading.***

As an individual basis, you will be required to analyze five cases throughout the semester. To help you prepare for class discussion, I will send a survey that contains discussion questions and online polls related to specific cases and topics <u>one week before each session</u>. Answering the questions will not take much time once you understand the underlying concepts introduced during the lecture and read the assigned readings carefully. Students should respond to the survey one day before the case is discussed.

3. **Team Projects (30%)**

- Zipcar (10%)
- Case study (20%)

A group project is designed for students to apply the framework discussed in the course to real-world strategic issues that entrepreneurs face. To accomplish the goal, teams of five students assume the role of technology-based entrepreneurs who consider commercializing a new idea/technology. Students will be assigned to a group by the instructor's discretion.

Each team uses the toolkits discussed in the course to analyze real-world cases. In the first team project, which is due October 10 (tentative), you will be asked to analyze the business model of Zipcar. In the second team project, which is due November 28, you will be asked to choose one recent technology-based start-up firm and analyze its entrepreneurial strategy. Detailed instruction on the team projects will be announced later.

Last but not least, all team members are expected to contribute sincerely. After each team project assignment, I will administer a survey asking about team dynamics.

Communication Policy and Office Hours

I strongly encourage you to contact me or TA regarding any issues related to this course. <u>For issues or questions related to course contents, please consider using the course discussion forum on</u> <u>Microsoft Teams first</u>. By doing so, every classmate can follow any important discussions between you and myself. Course-related information from my end will be communicated through this channel as well.

For issues that you do not want to disclose to other classmates, the best way to contact me is by simply sending me a message on [Microsoft Teams](). If you contact me via my email address [ohchankw@ust.hk](), please begin your email subject with [ISOM4020]. You can also use office hours, which are by appointment.

For other technical issues, please contact the TA first. This course's TA is Olivia Chan. She can be reached at [imolivia@ust.hk]().

Course Outline and Readings
* indicates required readings for individual/team assignments

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Module I. Identifying Opportunities for Value Creation

Class 1   **Course Overview & Logistics**   **September 7 Mo**

Class 2   **Sources of Innovation & Entrepreneurship**   **September 11 Fr**

Agarwal, R., & Shah, S. K. (2014). Knowledge sources of entrepreneurship: Firm formation by academic, user and employee innovators. Research Policy, 43(7), 1109–1133. http://doi.org/10.1016/j.respol.2014.04.012

Class 3   **Technology S-Curve**   **September 14 Mo**

Abernathy, W. J., & Utterback, J. M. (1978). Patterns of Industrial Innovation. *Technology Review*, 80(7), 40-47.

Foster, Richard N. *The S-curve: A new forecasting tool*. Macmillan, 1986.

Class 4   **Product Market Fit and Value Proposition Design**   **September 18 Fr**

Christensen, Clayton M., et al. "Finding the right job for your product." *MIT Sloan management review* 48.3 (2007): 38.

* Kim, W. Chan, and Renee Mauborgne. "Creating new market space." *Harvard business review* 77.1 (1999): 83-93.

* Moore, G. (2002). *Crossing the Chasm*. Harper Business. Chapters 1 & 2.

*** September 19 – Add/Drop Period Ends ***

Class 5   **Case Discussion: Lytro**   **September 21 Mo**

* Lytro, mimeo, MIT Sloan School.

Class 6   **Testing Uncertain Ideas**   **September 25 Fr**

Eisenman, T., Ries, E., and S. Dillard. Hypothesis-Driven Entrepreneurship: The Lean Start-Up, HBS Note 9-812-095.

Module II. Assembling Resources for Value Capture

Class 7   **Acquiring Resources from External Partners**   **September 28 Mo**

Sahlman, William A. "How to write a great business plan." *Harvard business review* 75.4 (1997): 98-109.

*** No Class on October 2 – Public Holiday ***

Class 8   **Designing Start-up Firms**   **October 5 Mo**

Boudreau, Kevin. "Notes on Designing Your Company." *Harvard Business School Strategy Unit Working Paper* 16-131 (2018). Part I: Designing Your Company.

Class 9   **Formulating Strategies as Start-ups**   **October 9 Fr**

Gans, J., Scott, E. L., & Stern, S. (2018). Strategy for start-ups. *Harvard Business Review*, *96*(3), 44-51.

*** October 10 – Zipcar Assignment Due ***

Class 10   **Case Discussion: Zipcar**   **October 12 Mo**

   * Zipcar, HBS Case 803096-PDF-ENG.

Class 11   **(Back-up Class)**   **October 16 Fr**

Module III. Entrepreneurial Strategy Compass

Class 12   **Disruption Strategy**   **October 19 Mo**

* Christensen, Clayton, and Michael Raynor. *The innovator's solution: Creating and sustaining successful growth*. Harvard Business Review Press, 2013. <u>Chapter 2: How Can We Beat Our Most Powerful Competitors.</u>

Class 13   **Case Discussion: Netflix**   **October 23 Fr**

* Netflix, HBS Case 607138-PDF-ENG.

*** No Class on October 26 – Public Holiday ***

Class 14   **Value Chain Strategy**   **October 30 Fr**

<u>Ben T. Smith IV | Managing the Startup-Big Company Relationships.</u>

<u>Marc Andreessen | The Pmarca Guide to Start-ups, part 5: The Moby Dick theory of big companies.</u>

Class 15   **Case Discussion: FreshTec**   **November 2 Mo**

* FreshTec, HBS Case 511059-PDF-ENG.

Class 16   **Intellectual Property Strategy**   **November 6 Fr**

Schilling, Melissa. *Strategic management of technological innovation*. McGraw-Hill Education, 2019. <u>Chapter 9: Protecting Innovation.</u>

Pisano, Gary P., and David J. Teece. "How to capture value from innovation: Shaping intellectual property and industry architecture." *California management review* 50.1 (2007): 278-296.

Class 17   **Case Discussion: Getty Images**   **November 9 Mo**

* Getty Images, HBS Case 713515-PDF-ENG.

Class 18   **Platform Strategy**   **November 13 Fr**

Eisenmann, Thomas R., and Scott Duke Kominers. "Making markets." (2018). HBS Note 818096-PDF-ENG.

* Edelman, Benjamin. "How to Launch Your Digital Platform: A Playbook for Strategists." *Harvard Business Review* 93, no. 4 (2015): 90–97.

Class 19   **Case Discussion: Beepi**   **November 16 Mo**

* Beepi, mimeo, MIT Sloan School.

Module IV. Course Wrap-up

Class 20   **Life Cycle of Start-up Firms**   **November 20 Fr**

Class 21   **Designing Your Career as an Entrepreneur**   **November 23 Mo**

Bussgang, Jeffrey. "Are You Suited for a Start-up?." (2017).

Class 22   **(Back-up Class)**   **November 27 Fr**

*** November 28 – Final Project Due ***

Class 23   **Student Presentations**   **November 30 Mo**

Class 24   **Student Presentations**   **December 4 Fr**

(Last update: 2020-09-05)