ISOM 4020: Innovation Management and Technology Entrepreneurship

Fall 2021

Professor Ohchan Kwon

Class Time and Location

- Time: Wednesday and Friday 4:30 – 6:00 p.m.
- Venue: LSK 1010
- Canvas: https://canvas.ust.hk/courses/39321
- Zoom link: https://hkust.zoom.us/j/97041771649

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.

The course focuses on the critical choices entrepreneurs need to make to take advantage of a new opportunity while facing extreme uncertainty and resource constraint. The cases and assignments offer an opportunity to apply the framework to various 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 startup company with influence on strategy development and implementation
- Have a career as an investment professional who has to evaluate startup 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

There is no required textbook for this class. We will instead use various reading materials and cases for our learning, which will be available on Canvas. Lecture slides and notes will be available on Canvas before each class.

The following books may provide additional insights for those of you who want to find more practical advice on building a startup. In the class, we will visit some of the advice from these practitioners, critically evaluating the validity and effectiveness of their claims.

> Masters, B. and Thiel, P., 2014. *Zero to one: notes on start-ups, or how to build the future*. Random House.
>
> Osterwalder, A. and Pigneur, Y., 2010. *Business model generation: a handbook for visionaries, game changers, and challengers* (Vol. 1). John Wiley & Sons.
>
> Scheinrock, J. and Richter-Sand, M., 2013. *The Agile startup: Quick and dirty lessons every entrepreneur should know*. John Wiley & Sons.

Requirements, Grading, and Due Dates

Grading will be based upon the following components: 1) class participation (50%), 2) team project (30%), and 3) final exam (20%).

1. **<u>Class Participation (50%)</u>**

1-a) Individual Assignments (30%)

Throughout the semester, you are required to complete six short assignments. These assignments are designed so that you can apply the concepts and frameworks introduced in the class to real-world cases and examples. They will be given roughly weekly basis between Class 3 and 16. The detailed assignment questions and accompanying templates will be provided in due course.

Your assignment will be graded based on ✓+/✓ basis. ✓+ is given if the quality of analysis is superb. All other participation demonstrating adequate understanding and efforts will receive ✓. Plagiarized work, as well as submission after the deadline, will not be counted.

1-b) In-class Participation (20%)

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. Therefore, I assign 20% of the total scores based on your in-class participation.

There are mainly two channels through which you can earn participation credit. First, based on your assignment submissions, I may ask some of you to present (just with a few sentences) the summary of your analysis in class. Second, in the classroom you can participate in discussions and ask clarifying questions related to concepts and examples. Such participation helps the learning of all of us, so it will be counted as participation credit.

For the second type of participation, I require you to send me and the TA an email summarizing your participation activities in each class within 48 hours of that class. By doing so, we can be on the same page regarding your participation performance, which will lead to a fairer and more transparent assessment and performance feedback.

2. **Team Project (30%)**

In the team project assignment, you are required to analyze real startups using the theories and frameworks discussed in the course. We use CNBC's Disruptor 50 (https://www.cnbc.com/cnbc-disruptors/) as a channel to identify fast-growing innovative startups. By the end of the semester, your team needs to produce an about 10-slide pitch deck describing the business of the assigned startup, and some supporting materials such as a spreadsheet for the business model analysis.

The team will be constructed in the following steps. First, in Assignment 2, all individual students should prepare one slide describing the customer value proposition of the company you choose from the Disruptor 50 list. Second, based on various evaluation schemes (including peer evaluation), we will select about twelve ideas that we will pursue further. Students pitching these ideas will take the role of founder, and the founders will recruit other team members to pursue the team project collectively. The maximum team size is six.

3. **Exam (20%)**

We will have one in-class exam on November 12, Friday (tentatively). The details will be announced later.

Attendance Policy and COVID-19 Contingencies

Students in good conditions are strongly recommended to attend face-to-face classes. For those who cannot participate in face-to-face classes for valid reasons, we will provide Zoom links so that you can attend the classes remotely but on a real-time basis. While we do not check your attendance formally, be mindful that attending classes on a real-time basis is the necessary condition to earn class participation credits.

Communication Policy and Office Hours

I strongly encourage you to contact me or TA regarding any issues related to this course. If you contact me via my email (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 Chao Ieong. He can be reached at imcyeung@ust.hk.

Course Outline and Readings

(*) denotes required readings.

Module I. Identifying Entrepreneurial Opportunities

Class 1 Course Overview & Logistics September 1 Wed

Assignment 0 (by September 8): Self-introduction.

Class 2 Who/What/When/Where/Why of Entrepreneurship September 3 Fri

Reading:

(*) Bussgang, Jeffrey. "Are You Suited for a Startup?." (2017).

Class 3 Sources of Innovative Ideas September 8 Wed

Reading:

Agarwal, R., S. K. Shah. 2014. Knowledge sources of entrepreneurship: Firm formation by academic, user and employee innovators. *Research Policy* **43**(7) 1109–1133.

(*) Graham, Paul (2011), "Organic startup ideas." www.paulgraham.com/organic.html

Assignment 1 (by September 15): Profiling startup founders.

Class 4 Dealing with Entrepreneurial Uncertainty September 10 Fri

Reading:

(*) Felin, T., A. Gambardella, T. R. Zenger. 2020. Value Lab: A Tool for Entrepreneurial Strategy.

***** September 14 – Add/Drop Period Ends *****

Module II. Entrepreneurs' Toolkits

Class 5 Designing Customer Value Proposition September 15 Wed

Reading:

Christensen, C.M., Hall, T., Dillon, K. and Duncan, D.S., 2016. Know your customers' jobs to be done. *Harvard Business Review*, *94*(9), pp.54-62.

(*) Hale, Kevin. "How to Evaluate Startup Ideas." https://www.ycombinator.com/library/6e-how-to-evaluate-startup-ideas

(*) Kim, W.C., 2005. Blue ocean strategy: from theory to practice. *California Management Review*, *47*(3), pp.105-121.

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

Osterwalder, A. and Pigneur, Y., 2010. *Business model generation: a handbook for visionaries, game changers, and challengers* (Vol. 1). John Wiley & Sons. pp. 22–25.

Assignment 2 (by September 23): 1) Describing customer value proposition, 2) Lytro case analysis.

Class 6 Identifying Minimally Required Resources and Capabilities September 17 Fri

Reading:

Porter, M.E., 1985. *Competitive Advantage*. New York: Free Press. Chapter 2: The Value Chain and Competitive Advantage.

***** No Class on September 22 – Public Holiday *****

Class 7 Case Discussion: Lytro September 24 Fri

Case: Lytro, mimeo, MIT Sloan School.

Class 8 Designing Business Model September 29 Wed

Reading:

Hamermesh, Richard G., Paul W. Marshall, and Taslim Pirmohamed. "Note on Business Model Analysis for the Entrepreneur." Harvard Business School Background Note 802-048, January 2002.

McGrath, R.G. and MacMillan, I.C., 2009. *Discovery-driven growth: A breakthrough process to reduce risk and seize opportunity*. Harvard Business Press. Chapter 5 & 6.

McGrath, R.G., 2010. Business models: A discovery driven approach. *Long Range Planning*, *43*(2-3), pp.247-261.

Assignment 3 (by October 6): 1) Idea evaluation exercise, 2) Zipcar case analysis.

***** No Class on October 1 – Public Holiday *****

Class 9 Testing Uncertain Ideas October 6 Wed

Reading:

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

Class 10 Case Discussion: Zipcar October 8 Fri

Case: Zipcar, HBS Case 803096-PDF-ENG.

Class 11 Pitch & Team Building October 13 Wed

Reading:

(*) Carteron, Nicolas (2020). "Pitch Deck Teardown: Airbnb." https://medium.com/pitchdecks/pitch-deck-teardown-airbnb-df213beab2ce

CB Insights (2021). "The Early Pitch Decks Of 25 Startups Before They Became Billion-Dollar Companies." https://www.cbinsights.com/research/billion-dollar-startup-pitch-decks/

Hale, Kevin. "How to Design a Better Pitch Deck." https://www.ycombinator.com/library/6q-how-to-pitch-your-startup

Hale, Kevin. "How to Pitch Your Startup." https://www.ycombinator.com/library/4T-how-to-design-a-better-pitch-deck

(*) Sequoia Capital, "Writing a Business Plan." https://www.sequoiacap.com/article/writing-a-business-plan/

Assignment 4 (by October 21): Netflix case analysis.

Class 12 Module II Summary October 15 Fri

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

Module III. Entrepreneurial Strategy Compass

Class 13 Disruption Strategy **October 20 Wed**

Reading:

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

Class 14 Case Discussion: Netflix **October 22 Fri**

* Netflix, HBS Case 607138-PDF-ENG.

Assignment 5 (by October 28): Getty Images case analysis.

Class 15 Value Chain Strategy **October 27 Wed**

Guest speaker: Edward Li (Founder and CEO, Starlity)

Class 16 IP Strategy & Case Discussion: Getty Images **October 29 Fri**

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

Reading:

Levin, Peter, and Jeniffer Li. "Open Source: From Community to Commercialization." https://a16z.com/2019/10/04/commercializing-open-source/

(*) 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.

Assignment 6 (by November 4): Beepi case analysis.

Class 17 Platform Strategy **November 3 Wed**

Reading:

(*) 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 18 **Case Discussion: Beepi** **November 5 Fri**

*** Beepi, mimeo, MIT Sloan School.**

Class 19 **Module III Summary** **November 10 Wed**

Assignment 7 (by November 21): Pitch deck.

Class 20 **In-class Exam** **November 12 Fri**

Module IV. Acquiring Resources for Growth

Class 21 **Fundraising** **November 17 Wed**

Guest speaker – To Be Confirmed.

Class 22 **Venture Competitions** **November 19 Fri**

Guest speaker: Donny Siu (Acting Director, HKUST Entrepreneurship Center)

Class 23 **Student Presentations** **November 24 Wed**

Class 24 **Student Presentations (cont'd) & Course Wrap-up** **November 26 Fri**

(Last update: 2021-08-30)