Information Economics, Spring 2018
Final Project

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For the final project, students need to apply what they learn in this course to write a research article for a self-selected topic. There is no restriction on the research topic, as long as it is broadly related to the scenario described below. There is also no restriction on the research scope. However, to make sure that your topic is "good," i.e., challenging enough while doable, you are strongly encouraged to discuss with the instructor about your project. Students should form teams to do the project. Each team should have **two to four** students.

1 The scenario

The advance of technology has significantly changed our life. In particular, online courses has changed the way we learn. By recording in-class lectures and make them open online, universities make Open Courseware (OCW). By adding online quiz and discussion forums, universities make Massive Online Open Courses (MOOCs) to further enhance the learning experience, student-student interaction, and student-instructor interaction. Today, university professors are not the only online course makers. Many individuals make and offer online courses through online learning platforms. Hahow in Taiwan is one example.

Different players make online courses for different reasons. For a university, it may offer OCW and MOOCs simply to help the general public. Even if it wants to improve its reputation, its objective is not for profit. Some individual online instructors, however, may do this in the hope of earning money or become famous. Similarly, an online course platform may be for-profit or non-profit. Even if it is non-profit, it still needs to be financially sustainable. It is thus critical for a platform to find a successful business model.

There are at least three business models existing as current practices. First, one may sell an online course. The instructor (or sometimes the platform) lists a price of a course, and then some learners pay to access to the course materials forever. Second, one may offer an online course for free but sell certificates. This is what MOOC platforms like Coursera and edX did (and are still doing) when they were founded in 2012. Third, one may offer an online course for free but sell value-added services. These value-added services are typically physical products or services, such as physical books or materials, tutor hours, face-to-face meetings with the instructor, etc. Fourth, just like what happens on online music, videos, and books, one may sell subscriptions. A learner may subscribe to a course (or a set of course) by paying a per-period fee to obtain the access to the materials during the membership period. There are of course other models.

While online courses raise many new issues (e.g., is it possible for online education to replace at least some part of traditional education?), let's focus on its business model: How may one be profitable by making online courses or running an online course platform? Note that instructors (including university professors and individuals) and platforms need each other. Therefore, one should take the strategic decisions of the platform(s) into consideration when studying an instructor's (or instructors') business model selection problem, and vice versa. Learners (or consumers who pay for courses, certificates, value-added services, and/or subscriptions) of course also make decisions. Decentralized decision making then naturally emerges. Information asymmetry then follows.

In this final project, you are invited (actually forced) to study a problem related to the business model of online courses. As we list above, there are so many issues to investigate! Please take a look at current practices, form your own research topic, and apply the knowledge and techniques you learn in this course to study it.

2   Tasks and their due times

Students should sign up by providing the names of team members and preferred presentation date to `https://goo.gl/forms/ej962q4coj3TjMTK2` by *23:59, June 8*. Teams who do not sign up by the due time will be assigned a presentation date by the instructor. If too many teams select the same date, the allocation will be determined randomly. Students who do not have a team will not be allowed to do the project.

The lecture on *June 1* is dedicated for proposal discussions. Students may use the classroom to do discussions with their teammates. The instructor will be in the classroom for the students to consult.

Each team needs to submit one *report* and give one *presentation* on either *June 15 or 22*. Students need to make slides for their project presentations. Reports and slides should be uploaded to CEIBA. The due time of slides is *8:00 AM* of the presentation day. The due time of reports is *8:00 AM* of the day after the presentation day.

3   Project, report, and presentation

Each team should write a research paper as their final project. In the paper, one should introduce the problem, list related works, formulate a model that describes the problem, analyze the model to find equilibria, and finally make interpretations about the results. Numerical studies may help if analytical solutions cannot be obtained.

You should always start by describing the background and motivation of your problem. Then the problem should be defined. If possible, you should explain why the problem is interesting, i.e., challenging and important. Real-world observations are good for motivating your study.

The problem should have the flavor of decentralized decision making, information asymmetry, or both. You should identify where in your problem people make decisions in a decentralized manner with, if any, asymmetric information. Game-theoretic models and/or the principal-agent model should be applied to analyze the problem.

You may want to do a literature review for your project. You do not need to read 100 papers before you write your paper. However, you need to provide a list of roughly five to ten papers that address similar issues as yours. More importantly, you may want to contrast your paper with theirs and specify what is new in your paper.

You may write your report in English or Chinese. In either case, please make sure that it is readable. As a researcher, you should write professional reports. Some general suggestions for formatting your report can be found on the course website. Limit your report to *twelve pages*, including everything.

Each team needs to do a presentation for the final project. The presentation should be given with slides. The length of each presentation, though typically around 20-25 minutes, will be determined after the number of teams are fixed. You may do your presentations in English or Chinese. In either case, please make it comprehensive and interesting.

4   Grading

1. 10% for project sign up. As long as a team signs up in time, it gets full credits.

2. 60% for project quality, including the selection of the topic, the completeness of the analysis, and the contribution of the findings.

3. 30% for project presentation. A presentation will get good grades if it is clear, interesting, well-organized, and under a good time control.