

STRAMGT 517: Topics in Digital Business

Course description

This class will guide students through in-depth research projects focusing on specific case studies of digital businesses, where students select topics individually or in teams. The research projects must be framed using principles from economics and strategy. The course will review conceptual frameworks from the economics of platform markets, such as economies of scale, network effects, entry strategies for new businesses as well as defensive strategies by incumbents. Possible topics include financial technology, virtual currency, internet marketplaces, the sharing economy, online advertising and advertising technology, big data, and analytic.

Course Overview

The goal of this class is to produce an independent research project. This class is a great fit if you are considering starting a business or joining a startup in the digital platforms space, or if you are trying to decide what type of business or sector to focus your job search on. The class will provide the structure and conceptual framework for you to analyze your ideas rigorously and thoroughly.

The bulk of your grade will be determined by your final paper due at the end of the class. Class sessions will be mandatory, but the time will be used by student-led presentations as well as small breakout and large group discussions. You will be required to deliver progress updates on your work regularly – this will be your opportunity to receive feedback and guidance from myself, your classmates, and a set of mentors who have opted in to help with the class, primarily from the local VC community.

Background on the Instructor

Professor Athey's research focuses on the economics of the internet, online advertising, internet search, the news media, and market design. For the last seven years she has served as a high level advisor to Microsoft, working as chief economist for several years. Her consulting work focused on all aspects of internet search and online advertising, but also covered other platform businesses including cloud computing. She is also actively involved in policy debates around the impact of the internet on the news media, antitrust issues around internet search, and privacy issues on the internet. Both her research and consulting make use of "big data," including data about internet search and web browsing as well as large scale experimentation, and bring together economic theory and statistical tools from machine learning and econometrics. She is also active in the new area of virtual currency, serving on the Board of Directors of the financial technology startup Ripple Labs, on the board of the virtual currency

industry group Coin Center, and working on research on Bitcoin. She serves as an advisor for venture capital firms X/Seed and NYCA.

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COURSE REQUIREMENTS

- I. **Class Participation (30%)**
- II. **Final Project Assignment (70%)**

I. CLASS PARTICIPATION (30%)

Students are expected to participate in class actively and constructively. Absence, tardiness, and lack of preparation will have a negative impact on your grade.

Class Discussion.

In evaluating class participation, we will consider the following:

- Is the participant a good listener?
- Are the points that are made relevant to the discussion? Are they linked to comments of others?
- Do the comments show evidence of having completed assigned readings and homework assignments?
- Do they move the discussion forward by introducing new aspects or issues to consider, or do they restate points that have already been made?
- Do they demonstrate willingness to take risks and test new ideas, or are they “safe”?

Please keep in mind the following:

- Well posed questions are not only a legitimate way to interact but should be an important part of our discussions.
- In most of the issues we discuss, there is some controversy in the industry and even within firms about the best course of action for the relevant parties, or what the role of government regulation should be, or whether the big firms are behaving in a way that is good for the internet ecosystem and innovation. Enlightened debate about the best plan to implement can add significantly to the understanding of the issues.
- Because of the varied backgrounds in the class, many of you will have important contributions to make based on your personal experience. We will try to learn about your backgrounds over the course of the term, but you are encouraged to bring these experiences to bear in the discussion.

Class Attendance. You are expected to attend every class. That said, other demands or illness may require you to miss a class. In that light, please be aware of the following:

- You are allowed one excused absence. Missing more than one class or having any unexcused absences is sufficient grounds for failing the course.
- To excuse your absence from class, please email the instructor and karinal@stanford.edu

- Note that if you arrive more than 10 minutes late to a class or leave more than 10 minutes early, you must follow the above instructions for the absence to be considered excused.
- Students with extraordinary circumstances who may need to miss more than one class should contact Professor Athey at athey@stanford.edu in advance.

In addition, please observe the following attendance policies:

- As a courtesy to your classmates, please arrive on time. Failure to arrive more than 10 minutes after the start of class will be considered an absence.
- Please use your name cards.

III. FINAL PROJECT ASSIGNMENT (70%)

For your final project, you will write a research paper that you can imagine is an **Investment Committee Memo** for a hypothetical VC / PE / hedge fund about a business or industry of your choosing.

Your final project assignment consists of **three parts**: an intermediate student-lead class discussion, a final project presentation, and a written paper.

The **first part** is a **class discussion** that you must give to the class prior to final presentations. You should be able to describe what got you interested in it and what your hypotheses are. You are encouraged to present industry facts and background, what you think is interesting about the problem, as well as whatever analyses you have already conducted, if any. You are not expected to show final results or recommendations at this point. This is an opportunity to frame the key questions and solicit feedback from the class. Please limit your presentation to **5 minutes** and we will have an additional 5-10 minutes per team for Q&A.

The **second part** is a final presentation. This presentation entails sharing the findings of your paper. You do not need to put a lot of time into visual aids for this presentation. The presentation should be 5-7 minutes with 5 minutes for Q&A. You do not need to repeat industry background in this presentation that has already been covered in prior discussions.

The **third part** of your assignment is the memo itself.

Please write a 6 to 12-page paper (12 pt., 1.5 spacing, 1 inch margins, including subheadings for the key concepts, page count not including any figures or references) addressing one of the following topics. You may also propose your own topic – with email approval – but all topics must make use of class concepts.

1. Starting a digital platforms business: pick a business idea and analyze its prospects for success
2. Advising an existing digital platforms business: pick an existing business and analyze its history and current strategy challenges using course concepts

3. Analysis of a particular industry / niche / business model: pick a “space” and discuss how you expect it to evolve in the next 5-10 years. What are the defining dynamics today and how will they evolve? Examples could include: Alternative credit marketplaces in a particular region; a type of marketplace platform.

In each case your paper should explicitly address *all* of the following concepts (and please use subheadings for the main level bullet points below, but not the sub-bullets):

- Who are the customers? If this is a platform business – what are the different sides of the market?
- What is the key value proposition for each customer group/side of the market?
 - What is the specific customer need addressed by this company / companies in this industry?
 - What would happen if this company didn't exist – what is the customers' next best alternative to meet their needs?
 - How much better is this solution compared to the next best alternative?
- What is the business model? Pricing strategy (for each side of the market)?
- What's new about this idea? Why did it not exist before and what made it possible?
- What are the barriers to entry?
- What is the competitive advantage? How sustainable is it?
 - What are sources of direct (same-side) and indirect (cross-side) network effects? How strong are they?
 - Are there economies of scale?
 - What is the role of data?
 - What is the role of proprietary technology or know-how?
 - Is there room for exclusive dealing? Would it be important?
- What is the expected industry structure?
 - What does competition look like today? How is it likely to evolve?
 - Is there room for multiple players in a steady state, or is this a winner-take-all market?
 - Are there different options for vertical integration and what are the tradeoffs?
- What are the key risks in front of this business / idea / industry? What are the most likely reasons for it to fail?
- What are regulatory issues?
- **Do you think this business is likely to prosper in the next 5-10 years? Do you recommend investing behind it (assuming valuation and team issues aside)?**

Note that you are not writing a pitch from the point of view of an entrepreneur. Rather, you are evaluating an idea someone else has presented to you. **You are expected to evaluate ideas or existing businesses objectively.** Your grade will not depend at all on whether you present a positive or a negative view on a business idea, no matter how (un)popular it is at the present time.