

STRAMGT 538: Financial technology

Course Overview

This class will provide an overview of the rapidly evolving world of financial technologies. New market entrants are promising to change the way we borrow, save, invest, and transact. Incumbents enjoy substantial market power but are struggling to keep up technologically as they wrestle with antiquated core infrastructure. We will analyze the emerging competitive landscape and the strategic dynamics in play. The class will begin with a short review of digital platform economics in which we will cover basic concepts such as network effects and economies of scale. We will then dive into a series of case studies and industry analyses. Particular attention will be paid to the areas of payments, alternative credit, and virtual currencies.

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. She serves on the boards of directors for Expedia and financial technology startup Ripple. She spent 8 years as a high level advisor to Microsoft in a variety of roles, including consulting chief economist. 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, as well as startups AppSheet, Mines.io, and Sense.io (acquired by Cloudera).

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COURSE REQUIREMENTS

- I. **Class Participation (30%)**
- II. **Final Project Assignment:**
 - Presentation (15%)**
 - Final Paper (40%)**
 - Individual Write-up (15%)**

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. See the course policy sheet (posted on Canvas) for details.

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?
- 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 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. Attendance policies are posted on the course policy page on Canvas. Please use your name cards.

II. FINAL PROJECT ASSIGNMENT (70%)

Your final project assignment consists of **three parts**. The first must be submitted (as a powerpoint or pdf) on Canvas by 2 p.m. on the final day of class. The second and third must be submitted by May 13, 2016 at 4 p.m. All of the parts pertain to the assignment whose details are given below.

The first two parts are done in a group. You should form groups of 4-6 students. We will make use of a sign-up list for group projects to facilitate group formation. Your group may have one or more students added to it by the instructors if needed.

The **first part** (15%) is a group presentation on the last day of class. The groups have one minute per student in the group to make their presentations, and two minutes for questions and answers. Given the time constraints of the class, the group does NOT need to have reached their final conclusions at the time of the presentation, but should present relevant facts and issues as well as the framework you are using for your analysis.

The **second part** (40%) is a 4 to 6 page paper (12 pt., 1.5 spacing, 1 inch margins, page count not including any figures or references) summarizing the group's findings for the project.

The **third part** (15%) is to be completed INDIVIDUALLY without discussion with group members. This individual submission should be one-half to one page (same format as above). The submission should highlight the most important general lessons and themes from the group project.

Project description: Choose one of the following three topics. You may also propose your own topic – with email approval – but all topics must make use of class concepts.

1. Starting a FinTech business: pick a FinTech business idea and analyze its prospects for success using course concepts
2. Advising an existing FinTech 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 within Financial Technologies: 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; Mobile payments in a particular region; Insurance; New models of credit scoring for underserved populations.

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.