MGT 250: Technology Competition and Strategy

Syllabus for Winter 2017

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[1]This is a Draft syllabus. Some details regarding grading, teams, and guest speakers are subject to change.

Course Theme and Learning Objectives

This course covers business strategies for firms that make technology products. Internet-based goods, and products with digital components and network effects are an indispensable part of economic activity. Platform-mediated networks produce over half the revenue for over half of the world's 100 largest companies (e.g., American Express, Cisco, Time Warner). Technology entrepreneurship is commonplace. But many technology products face distinctive economic forces affecting supply (e.g., cost structures), demand (e.g., how value is created) and markets (e.g., industry organization, alliances, and competition). Managing and responding to these forces requires disctintive competitive strategies. Conversely, strategic errors can be devastating. What are these forces? How do they impact market outcomes in technology industries? And how should firms shape their competitive strategy?

This course provides you with tools to examine and answer these questions, and a new framework for thinking about technology competition and strategy. The insights from this course are valid for information and technology goods (hardware, software, online information goods, Internet and telecommunications services, consumer electronics, entertainment and media products) and other industries that have digitization and network effects, such as health care, banking, services, biotechnology, transportation and energy. The course employs a combination of simple but rigorous analytical models, emerging theories, and plenty of real-world examples, experiences, and formal cases.

Examples of Strategic Questions Discussed in Course

- How should firms adapt product design and launch strategies for network goods?
- How should multi-sided platforms drive adoption and which side should they charge?
- How should platform owners think about the ideal level of openness and control?
- When are exclusivity contracts between platforms and developers desirable and likely?
- How do companies become platform leaders?
- Why and how are standards wars fought?
- How do firms that contribute to a composite platform cooperate and compete?

Pre-requisites MBA core classes in economics (202A "Markets and the firm"), statistics (203A "Data analysis for managers"). You should feel comfortable with the material you've already learnt in these two classes – if necessary, **please go over your books and notes before this course commences**. Recommended preparation also includes 203B (Forecasting and Managerial Research Methods – or, prior knowledge of statistical data analysis techniques) and 204A (Marketing Management). Please also see the note about pre-course assessment.

	Topics	Activity	Comments	Bay.Area	Davis
1	Course Overview. How tech goods (information and network goods and platforms) are distinct.	Form student teams.		01/13, 2-5pm	01/14, 9a-12pm
2	Techniques for Monetizing heterogeneous consumers, balancing recurring vs. one-time revenues.		Project proposal.	01/13, 6-9pm	01/14, 1-4pm
3	Market equilibria under network goods, implications for product and price strategy.	Quiz.	Finalized Proposal.	01/27, 2-5pm	01/28, 9a-12pm
4	Design and Launch Strategies: versioning, launch timing, growth vs. profits.	Case: Cork'd	Guest Speaker	01/27, 6-9pm	01/28, 1-4pm
5	Revenue strategies for platforms and multi-sided markets	Quiz. Case: NeoPets	Project progress report.	02/10, 2-5pm	02/11, 9a-12pm
6	Platforms and Developers: Codependence and exclusivity	Case: Electronic Arts	Guest Speaker	02/10, 6-9pm	02/11, 1-4pm
7	Platform development and leadership, openness, control	Quiz. Case: PatientsLikeMe		02/24, 2-5pm	02/25, 9a-12pm
8	Platform envelopment and bundling.		Guest Speaker	02/24, 6-9pm	02/25, 1-4pm
9	Platform Ecosystems: Competition and Standards	Quiz.	Guest Speaker	03/10, 2-5pm	03/11, 9a-12pm
10	Course Wrapup		Project report and presentation.	03/10, 6-9pm	03/11, 1-4pm

Table 1: Mgx250 Technology Competition and Strategy: Schedule Overview.

1 Detailed Schedule

1.1 Overview and introductions — Bay: Jan 13-1; Davis: Jan 14-1

- **Introductions**. Students' background, ambition, expectations. Classroom technology.
- **Course overview**. Objectives, schedule, expectations, grading scheme.
- **Learning objectives**. How are hi-tech products different on the supply side (e.g., cost structures), demand side (network effects, complements, two-sided networks), and market structure (e.g., alliances, standards, compatibility)? What distinctive challenges, business phenomenon and competitive strategies emerge in response to these differences? How do these characteristics transform and disrupt existing industries or create new ones?
  - Hal R. Varian. "High Technology Industries and Market Structure". In: *Federal Reserve Bank of Kansas City Proceedings* (2001). URL: http://ideas.repec.org/a/fip/fedkpr/y2001p65-101.html.
  - Thomas Eisenmann. "Platform-Mediated Networks: Definitions and Core Concepts". In: *Harvard Business School* (2007), skip Appendix B-C.
  - Hemant K. Bhargava and Niraj Kumar. *Technology Competition and Strategy: Learning via Games*. 2014
- In-class exercise (described in Slides for session)
- **Optional reading**: Carl Shapiro and Hal R. Varian. *Information rules: a strategic guide to the network economy*. Boston, MA, USA: Harvard Business School Press, 1998. ISBN: 0-87584-863-X, Ch1; Ch2 p. 9-32; (Sebastian Morris. "Competition, Regulation and Strategy: The Information Technology Industry". English. In: *Economic and Political Weekly* 38.33 [2003], pp. 3494–3499); "Something to Stand on" (The Economist), https://goo.gl/alswyB
- What you should know and remember from 202A: Demand, supply, price elasticity, price optimization, different types of pricing schemes (e.g., linear price, two-part tariffs, bundles), uniform pricing pros and cons, price discrimination, game theory and Nash equilibrium.

1.2 Monetization with Heterogeneous Buyers — Bay: Jan 13-2; Davis: Jan 14-2

- **Learning objectives**. Durables: How do firms use product and price differentiation (including versioning and bundling) to maximize revenue? Consumables: How to balance one-time vs recurring revenues (or, fees for access vs. usage)? What if one-time and recurring demands can be separated over time (e.g., Durable + complementary Consumables).
  - Hemant K. Bhargava. "Multi-Part Tariffs: Teaching Note". UC Davis Working Paper, last revised February. 2009.
  - Hemant K. Bhargava and Manish Gangwar. *Practical Pricing for Digital Goods*. 2016. (You can ignore Section 3 and the Appendix.)
- **Optional reading**: Characteristics of information goods, and how they affect product differentiation, price discrimination, versioning (Carl Shapiro and Hal R. Varian. *Information rules: a strategic guide to the network economy*. Boston, MA, USA: Harvard Business School Press, 1998. ISBN: 0-87584-863-X, Ch. 2 p. 37-44; Ch.

3); The economics of free (Chris Anderson. "Free! Why $0.00 Is the Future of Business". In: *Wired* [2008]. URL: http://www.wired.com/techbiz/it/magazine/16-03/ff_free).

1.3 Network goods and platforms — Bay: Jan 27-1; Davis: Jan 28-1

- **Learning objectives**. What economic elements (including types of network benefits and costs) are important in analyzing network goods, multi-sided networks and platforms? How do network effects influence consumer valuations and adoption and when do they play a strategic role? What levers of control are crucial in managing and pricing products with strong network effects?
  - Thomas Eisenmann. "Platform-Mediated Networks: Definitions and Core Concepts". In: *Harvard Business School* (2007), Appendix B-C
  - Hemant K. Bhargava. *Pricing Strategies for Network Goods*. Working Paper, University of California Davis. 2015
- **Optional reading**: dynamic pricing of network goods Hongju Liu and Pradeep Chintagunta. "Pricing under Network Effects". In: *Handbook of Pricing Research in Marketing*. Ed. by Vithala Rao. Northampton, MA: Edward Elgar Publishing, Inc.1, 2009.

1.4 Design and Launch Strategies — Bay: Jan 27-2; Davis: Jan 28-2

- **Learning objectives**. What strategic challenges are created or amplified due to network effects (e.g., conflict between growth and profitability)? How can firms address these challenges through product design (e.g., balancing standalone vs network features), launch management (e.g., effective seeding), product line design (e.g., freemium and versioning) and revenue models (whom and what to charge for)?
  - Hemant K. Bhargava. "Platform technologies and network goods: insights on product launch and management". In: *Information Technology and Management* (2014), pp. 1–11. ISSN: 1385-951X
  - Daniel Edelman. "How to Launch Your Digital Platform: A Playbook for Strategists." In: *HBS Blog* 93 (4 2015). https://hbr.org/2015/04/how-to-launch-your-digital-platform
  - **Case discussion**: Cork'd: Building a Social Network for Wine Lovers. Peter Soles. "Cork'd: Building a Social Network for Wine Lovers". In: *Harvard Business School* (2011). Case # 9-911-026
- **Optional reading**: Yikuan Lee and Gina Colarelli O'Connor. "New Product Launch Strategy for Network Effects Products". In: *Journal of the Academy of Marketing Science* 31 (3 2003), pp. 241–255, Hemant K. Bhargava and Vidyanand Choudhary. "Economics of an Information Intermediary with Aggregation Benefits". In: *Information Systems Research* 15.1 (2004), pp. 22–36.

1.5 Monetizing Platforms and Multi-sided Markets — Bay: Feb 10-1; Davis: Feb 11-1

- **Learning objectives.** How should multi-sided platforms drive adoption and how should they monetize? What is the value of "free users" (when one side is heavily subsidized)? How should platforms manage competitive intensity and winner-take-all dynamics?

- Thomas Eisenmann, Geoffrey Parker, and Marshall van Alstyne. "Strategies for Two-Sided Markets". In: *Harvard Business Review* (2006)
- Thomas Eisenmann and Andrei Hagiu. "Staging Two-Sided Platforms". In: *Harvard Business School* (2007)
- iDecisionGames: Two-sided markets Game.
- **Case discussion**: NeoPets Inc. Thomas Eisenmann and Liz Kind. "NeoPets Inc." In: *Harvard Business School* (2003).

- **Optional reading**: Sunil Gupta and Carl Mela. "What is a Free Customer Worth?" In: *Harvard Business Review* (2008).

1.6 Platforms and Developers — Bay: Feb 10-2; Davis: Feb 11-2

- **Learning objectives.** How does co-dependence between platform owners and developers affect market outcomes in platform competition? When are exclusivity contracts with developers desirable and likely?

  - Platforms and Developers: Frenemies? Jianqing Chen Adner Ron and Feng Zhu. "Frenemies in Platform Markets: The Case of Apple's iPad vs. Amazon's Kindle". In: *HBS Working Paper, No. 15-087* (2016). https://hbr.org/2015/04/how-to-launch-your-digital-platform
  - **Case discussion**: Electronic Arts. Thomas Eisenmann and Justin Wong. "Electronic Arts in Online Gaming". In: *Harvard Business School* (2006).
  - iDecisionGames: Platform-Developer Alliance game.

1.7 Platform Development — Bay: Feb 24-1; Davis: Feb 25-1

- **Learning objectives.** How do companies become platform leaders, and how important is product leadership to platform leadership? How should platform owners think about the ideal level of openness and control?

  - Feng Zhu and Nathan Furr. "Products to Platforms: Making the Leap". In: *Harvard Business Review* 94 (4 2016). https://hbr.org/2015/04/how-to-launch-your-digital-platform
  - Thomas Eisenmann, Geoffrey Parker, and Marshall Van Alstyne. "Opening Platforms: How, When and Why?" In: *Platforms, Markets And Innovation*. Ed. by Annabelle Gawer. Edward Elgar, 2009.
  - **Case discussion**: PatientsLikeMe. Sunil Gupta and Jason Iris. "PatientsLikeMe: An Online Community of Patients". In: *Harvard Business School* (2011).

1.8 Platform Envelopment and Bundling — Bay: Feb 24-2; Davis: Feb 25-2

- **Learning objectives**. Why do tech firms find product bundling attractive? How does bundling affect the competitive interplay between an existing tech platform and an innovative entrant? Why might a bundling based business model fail for firms that aggregate digital goods from multiple producers?

  - R. Venkatesh and Vijay Mahajan. "The Design and Pricing of Bundles: a Review of Normative Guidelines and Practical Approaches". In: *Handbook of Pricing Research in Marketing*. Ed. by Vithala Rao. Northampton, MA: Edward Elgar Publishing, Inc.1, 2009

  - Thomas Eisenmann, Geoffrey Parker, and Marshall Van Alstyne. "Platform envelopment". In: *Strategic Management Journal* 32.12 (2011), pp. 1270–1285. DOI: 10.1002/smj.935
  - iDecisionGames: Bundling (Single firm and Multi-firm).

- **Optional reading**: Hemant K. Bhargava. "Retailer-Driven Product Bundling in a Distribution Channel". In: *Marketing Science* 31.6 (November-December 2012), pp. 1014–1021.

1.9 Platform Ecosystems: Competition and Standards — Bay: Mar 10-1; Davis: Mar 11-1

- **Learning objectives**. Why and how are standards wars fought? How do component-makers and systems-integrators cooperate and compete?

  - Carl Shapiro and Hal Varian. "The Art of Standard Wars". In: *California Management Review* 41.2 (1999), 25 pages
  - Winner-take-all markets Thomas Eisenmann. "Winner-Take-All in Networked Markets". In: *Harvard Business School* (2007)

- **Optional reading**: Stanley M. Besen and Joseph Farrell. "Choosing How to Compete: Strategies and Tactics in Standardization". In: *The Journal of Economic Perspectives* 8.2 (1994), pp. 117–131. Game theory and competition: duopoly pricing and product decisions (Felix Oberholzer-Gee and Dennis Yao. "Game Theory and Business Strategy". In: *Harvard Business School* [2006]). Systems competition and direct network effects (Carl Shapiro and Hal R. Varian. *Information rules: a strategic guide to the network economy*. Boston, MA, USA: Harvard Business School Press, 1998. ISBN: 0-87584-863-X, Ch 8). (Victor Stango. "The Economics of Standards Wars". In: *Review of Network Economics* 3.1 [2004], p. 1. URL: http://EconPapers.repec.org/RePEc:bpj:rneart:v:3:y:2004:i:1:n:1).

1.10 Final Presentations and Course Wrapup — Bay: Mar 10-2; Davis: Mar 11-2

- **Wrap-up**: Course summary and recap.

- Project presentations.

Textbook

Read any one of these books.

- David S. Evans and Richard Schmalensee. *Matchmakers: The New Economics of Multisided Platforms*. Cambridge, MA, USA: Harvard Business School Press, 2016. ISBN: 1633691721: Great book, expert authors, just published.

- Geoffrey G. Parker, Marshall W. Van Alstyne, and Sangeet Paul Choudary. *Platform Revolution: How Networked Markets Are Transforming the Economy–and How to Make Them Work for You*. New York: Norton, W. W. Company, Inc., 2016. ISBN: 9780393249132: Another great book, expert authors, just published.

- Carl Shapiro and Hal R. Varian. *Information rules: a strategic guide to the network economy*. Boston, MA, USA: Harvard Business School Press, 1998. ISBN: 0-87584-863-X: Great book, expert authors, will appear to be dated (late 1990s, which is a long time ago in this highly dynamic industry), but it is an excellent anchor and, moreover, contains many principles that are both timely and timeless. It contains many practical examples and is written in a very readable non-technical way.

- David S. Evans and Richard Schmalensee. *Catalyst Code: The Strategies Behind the World's Most Dynamic Companies*. Harvard Business Press, 2007. ISBN: 9781422101995. URL: http://books.google.com/books?id=Q4OBQgAACAAJ:

  a recent discussion of the platform concept and how it drives the success of major modern companies.

- A. Gawer. *Platforms, Markets and Innovation*. Edward Elgar, 2009. ISBN: 9781848440708. URL: http://books.google.com/books?id=1BvhQT8SHZkC:

  recent book - a collection of chapters written by several different, but leading, scholars - and its contents appear to fit very closely with the focus of the course (but I haven't read it yet).

Readings (Required Readings are Available on Study.net)

[1] Hal R. Varian. "High Technology Industries and Market Structure". In: *Federal Reserve Bank of Kansas City Proceedings* (2001). URL: http://ideas.repec.org/a/fip/fedkpr/y2001p65-101.html.

[2] Thomas Eisenmann. "Platform-Mediated Networks: Definitions and Core Concepts". In: *Harvard Business School* (2007).

[3] Hemant K. Bhargava and Niraj Kumar. *Technology Competition and Strategy: Learning via Games*. 2014.

[6] Hemant K. Bhargava. "Multi-Part Tariffs: Teaching Note". UC Davis Working Paper, last revised February. 2009.

[7] Hemant K. Bhargava and Manish Gangwar. *Practical Pricing for Digital Goods*. 2016.

[9] Hemant K. Bhargava. *Pricing Strategies for Network Goods*. Working Paper, University of California Davis. 2015.

[11] Hemant K. Bhargava. "Platform technologies and network goods: insights on product launch and management". In: *Information Technology and Management* (2014), pp. 1–11. ISSN: 1385-951X.

[12] Daniel Edelman. "How to Launch Your Digital Platform: A Playbook for Strategists." In: *HBS Blog* 93 (4 2015). https://hbr.org/2015/04/how-to-launch-your-digital-platform.

[13] Peter Soles. "Cork'd: Building a Social Network for Wine Lovers". In: *Harvard Business School* (2011). Case # 9-911-026.

[16] Thomas Eisenmann, Geoffrey Parker, and Marshall van Alstyne. "Strategies for Two-Sided Markets". In: *Harvard Business Review* (2006).

[17] Thomas Eisenmann and Andrei Hagiu. "Staging Two-Sided Platforms". In: *Harvard Business School* (2007).

[18] Thomas Eisenmann and Liz Kind. "NeoPets Inc." In: *Harvard Business School* (2003).

[20] Jianqing Chen Adner Ron and Feng Zhu. "Frenemies in Platform Markets: The Case of Apple's iPad vs. Amazon's Kindle". In: *HBS Working Paper, No. 15-087* (2016). https://hbr.org/2015/04/how-to-launch-your-digital-platform.

[21] Thomas Eisenmann and Justin Wong. "Electronic Arts in Online Gaming". In: *Harvard Business School* (2006).

[22] Feng Zhu and Nathan Furr. "Products to Platforms: Making the Leap". In: *Harvard Business Review* 94 (4 2016). https://hbr.org/2015/04/how-to-launch-your-digital-platform.

[23] Thomas Eisenmann, Geoffrey Parker, and Marshall Van Alstyne. "Opening Platforms: How, When and Why?" In: *Platforms, Markets And Innovation*. Ed. by Annabelle Gawer. Edward Elgar, 2009.

[24] Sunil Gupta and Jason Iris. "PatientsLikeMe: An Online Community of Patients". In: *Harvard Business School* (2011).

[25] R. Venkatesh and Vijay Mahajan. "The Design and Pricing of Bundles: a Review of Normative Guidelines and Practical Approaches". In: *Handbook of Pricing Research in Marketing*. Ed. by Vithala Rao. Northampton, MA: Edward Elgar Publishing, Inc.1, 2009.

[26] Thomas Eisenmann, Geoffrey Parker, and Marshall Van Alstyne. "Platform envelopment". In: *Strategic Management Journal* 32.12 (2011), pp. 1270–1285. DOI: 10.1002/smj.935.

[28] Carl Shapiro and Hal Varian. "The Art of Standard Wars". In: *California Management Review* 41.2 (1999), 25 pages.

[29] Thomas Eisenmann. "Winner-Take-All in Networked Markets". In: *Harvard Business School* (2007).

2 Optional Readings

Most of the readings below should be available to you via the UC Davis Library system, and usually also via http://scholar.google.com.

[4] Carl Shapiro and Hal R. Varian. *Information rules: a strategic guide to the network economy*. Boston, MA, USA: Harvard Business School Press, 1998. ISBN: 0-87584-863-X.

[5] Sebastian Morris. "Competition, Regulation and Strategy: The Information Technology Industry". English. In: *Economic and Political Weekly* 38.33 (2003), pp. 3494–3499.

[8] Chris Anderson. "Free! Why $0.00 Is the Future of Business". In: *Wired* (2008). URL: http://www.wired.com/techbiz/it/magazine/16-03/ff_free.

[10] Hongju Liu and Pradeep Chintagunta. "Pricing under Network Effects". In: *Handbook of Pricing Research in Marketing*. Ed. by Vithala Rao. Northampton, MA: Edward Elgar Publishing, Inc.1, 2009.

[14] Yikuan Lee and Gina Colarelli O'Connor. "New Product Launch Strategy for Network Effects Products". In: *Journal of the Academy of Marketing Science* 31 (3 2003), pp. 241–255.

[15] Hemant K. Bhargava and Vidyanand Choudhary. "Economics of an Information Intermediary with Aggregation Benefits". In: *Information Systems Research* 15.1 (2004), pp. 22–36.

[19] Sunil Gupta and Carl Mela. "What is a Free Customer Worth?" In: *Harvard Business Review* (2008).

[27] Hemant K. Bhargava. "Retailer-Driven Product Bundling in a Distribution Channel". In: *Marketing Science* 31.6 (November-December 2012), pp. 1014–1021.

[30] Stanley M. Besen and Joseph Farrell. "Choosing How to Compete: Strategies and Tactics in Standardization". In: *The Journal of Economic Perspectives* 8.2 (1994), pp. 117–131.

[31] Felix Oberholzer-Gee and Dennis Yao. "Game Theory and Business Strategy". In: *Harvard Business School* (2006).

[32] Victor Stango. "The Economics of Standards Wars". In: *Review of Network Economics* 3.1 (2004), p. 1. URL: http://EconPapers.repec.org/RePEc:bpj:rneart:v:3:y:2004:i:1:n:1.

3 Some Rules of the Game

3.1 Code of Conduct and Academic Integrity

These guidelines—http://sja.ucdavis.edu/cac.html—are relevant, in addition to specific issues listed in this syllabus.

3.2 Class Policies

- Be respectful to all. This includes always being on time (after breaks too), and avoiding cell phones, private conversations, etc.
- Be prepared for class (i.e., assigned readings and homework), and contribute to discussion. I do not "teach from" the readings; read them in advance to get the most from the lecture.
- Use of computers or tablets (or smartphones) is encouraged for class activities, but must not distract others (e.g., clattering keyboards).
- Absence is discouraged and will be detrimental to your grade. I cannot judge reasons for missing class. Instead, there is a single uniform policy for everyone: 3-point penalty for one absence (a 6-hour session !) after you do a partial make up: get a class debrief from two of your colleagues, and submit a 1-2 page note by next class, and summarizing what you learnt. The second absence fetches a 15-point penalty (at this point you would have missed 40% of the course, hence should drop it).
- Class assignments must be delivered on time, 48 hrs before class (20-50% penalty for each day delay).

3.3 Pedagogical paradigm

- The course will be a mix of lectures, classroom discussions (usually around business cases), online games, and guest speakers. Expect some mathematical treatment, including equations, graphs, and numbers – in the reading materials, lectures, assignments, business cases, and in exams.
- For every session each team is asked to post 3-5 questions before start of class (based on session topic). Discussion of these questions will cover a big chunk of class time and topics assigned for that session.

3.4 Pre-Course Assessment

It is designed to gauge your preparation and to help you become better prepared for the course. It is worth up to 10% of the grade, and must be submitted 48 hours before the first class session.

4 Tentative Grading Plan

33 Four quizzes (15-20 minutes, probably sessions 3, 5, 7, and 9). 11 points each, drop the lowest score.

20% Participation.

- Class participation (10 points): 1 point per session for stellar participation (e.g., informed discussion and questions; examples or counterexamples); 1/2 for presence and punctuality.
- Pre-course assessment (10 points).

17% Homeworks and Case analysis (team effort, written submission). You must prepare every case, but a written submission is required from each team for only 2 of the 4 cases. These submissions will be graded for

- adherence to rules (submission time, format, length),
- effort (e.g., did you do the computations or analysis to support your claims),
- clarity, organization and to-the-point response.

Some issues are semi-structured and without a definitive answer. What is important is a logical analysis leading to clear insight and recommendation.

25% Project (Team assignment).

- The first two milestones are a proposal (2 points) and progress report (5 points).
- Half the remaining points will be *peer-assigned* (9 points) in response to the following questions.
  - Problem statement, framing, and contextual background: did these **enhance your knowledge**?
  - Data collection, assumptions, and methodology: were these **sensible** and appropriate to the defined problem?
  - Analysis and solution/conclusion: Were these **informative** and **convincing**?
  - Presentation: was the work **presented clearly and paced correctly**?
  - Score: was the overall project relatively **ambitious and challenging**?
- The remaining 9 points will be assigned by me based on a combination of above issues plus timeliness and quality of work in progress during the quarter.

5 Class Project (Team Effort)

An in-depth class project is an integral learning component of this course. It gives you an opportunity to make the rubber meet the road - to see how you can apply the concepts and methods learnt in this course to address a real-world strategic problem in the technology sector. You choose the topic, but it should involve application and analysis of the concepts learnt in this class to a real-world problem. You can look at past projects (proposal, progress report, final report, presentation - available on the web site) to get an idea of the level, scope, and quality of work that I'm expecting.

What should your project work focus on? Some of it will involve fact-finding "background research" type questions (e.g., "what IS x?" "DOES x have [say, network effects]?" "WHO ARE x's competitors?") - usually answered by look-up or search, rather than deep analysis. But **this is only a start, do not stop here**. Move on to forward-looking questions that require deeper analysis, whose answers try to A) PREDICT - what market outcomes are LIKELY TO OCCUR, given what you know about the business and technological choices made by your firm, competitors, and other players in the ecosystem?, or B) PRESCRIBE - how SHOULD your firm manipulate the business and technological strategies/controls that seem most crucial to future success vs. failure? Possible controls are pricing strategies, product design, launch management, level of openness or control (for a platform), compatibility decisions, standards choices, alliances and partnerships, etc. - they would be different for each project, of course.

Project proposal (due 5 days after Session 1). List the topic, describe the intended final output, and summarize your research plan and method. One pager, which provides a glimpse of a) the context (or firm, product, or phenomenon) you are analyzing, b) the specific questions you wish to study, c) the methods/data/models that you would use to analyze and answer the questions, and d) the shape and nature of your intended final results. Submit your proposal here (https://goo.gl/forms/79NNbcw3VwJplC1A2), then follow up with email, phone or F2F discussion.

Progress report (due 48 hours before Session 6). State what you've accomplished, and your plan for the remaining work. You can write prose and text summary, or put together bullet points and graphics from your slides along with some explanatory text. 2 pages.

This segment will be graded on Clarity, Level of progress, and Timeliness of submission.

Project presentation and report (Session 10). Your presentation will be 10-15 minutes long (with 5 minutes Q&A), and should be targeted to senior executives of your corporation/board/investors. The written report is an executive summary (approximately 3-5 pages) supported by additional materials from your presentation. Your peers and I will evaluate your project (and you will evaluate other projects you hear) using a Project Peer Evaluation form with the following components:

- Problem statement, framing, and contextual background: did these create or enhance your knowledge?
- Data collection, assumptions, methods: were these sensible and appropriate to the defined problem?
- Analysis and solution/conclusion: Were these informative and convincing?
- Presentation: was the work presented clearly and paced correctly?
- Scope: was the overall project relatively ambitious and challenging?

Please give me a printout of the presentation (2-4 slides per page format) at start of class.

6 Project Topic Suggestions

In the past students have proposed their own project, e.g., around existing large companies with a new product, or perhaps around an emerging start-up, etc. Here are a couple of real-world project ideas, of efforts that are at a stage where the ideas from this class could be particularly suitable. You could write a project proposal around these topics.

pScanner: A Big Data Services Marketplace around Patient Treatments and Outcomes

US health care industry is highly fragmented, with thousands of hospital systems each having relatively small market share (compared to, say, banking). Each hospital has high-quality data on treatments and outcomes for the patients it serves. Such data is of high value to medical research companies (pharmaceuticals, genetics, biomedical devices, academic researchers, etc.). But, to truly make advancement such companies need data from multiple hospitals, so that the data reflect sufficient variation and diversity. Evidently there is a market for a two-sided platform (with two sides being suppliers and buyers of patient data) which can provide buyers with aggregated and synthesized data from multiple sources.

1. How is such a platform likely to emerge? (E.g., as a "product" first (single large hospital system, that gradually brings in collaborating hospitals) or as a straight-shot platform model.)
2. Who is likely to initiate it? (E.g., Insider / Outsider ?) Should it be structured as an independent private company? or a "cooperative" of hospitals (the data sources)? or perhaps with an independent subsidiary?
3. What would be the "product line"? "Selling data" may not be feasible in the health context. But would it be access to data analysis? results of data queries and regressions? insights and reports from analysis? should they create versions based on what subsets of data are used for analysis? timeliness of data?
4. What sort of pricing model might fit such a platform? (E.g., Uniform flat fees, linear fee, etc.)
5. What revenue (and cost) sharing model might fit this platform?

TheRightMargin: A Writing Management Tool

TheRightMargin (www.therightmargin.com) is a smart, goal-driven writing web app that's designed to help writers finish what they write. They're aiming to take writing beyond status quo word processors, to move it *into the future*, and to tackle current pain points with finishing writing projects of all kinds (academic, fiction, blogs, professional content material, etc). Evaluate and propose this company's strategies. Here are sample questions.

1. What are the hurdles to adoption: product gaps, pricing, or something else? How does product design play a role in who uses it now vs. who could use it? Consider the space, the different market audiences, competition.
2. What should do they to get broad adoption? Consider product launch, seeding strategies, alliances.
3. How should they achieve higher conversion from free to active and paid user? What does retention look like? What makes someone willing to pay (or not pay) for a SaaS subscription writing tool?
4. What are their current methods of monetization? What pricing strategy would you recommend? What other business models might make sense (i.e., what networks are formed, whom you charge, what you charge for)?
5. What are the big risks? Is there a threat of "platform envelopment"?