

Syllabus: **MGx250: Technology Competition and Strategy**, Jan-Mar 2020

Hemant K. Bhargava, UC Davis

(Revised 11/23/2019; 12/04/2019.)

Sessions 1-2.
Introduction, concepts,
vocabulary, fundamentals.

What are network
goods, platforms?
Transformative and
disruptive power -
evidence and
mechanism.

Sessions 3-4.
Building and Being a
Platform Business.

How are platforms
built? How do firms
become platforms?
(When) should you be
one? Why do
platforms fail or
succeed?

Sessions 5-7.
Platform Management -
Operations and Tactics

Platform monetization,
network mobilization,
matchmaking, content
provision, managing
ecosystem partners

Sessions 8-10.
Application Day, + Platform
Competition & Policy

Application day - build
and manage your own
platform. How do
platforms compete?
How should platforms
be regulated?

MGx250. Course Overview and Objectives

- This course gives you a framework for thinking about technology competition and strategy, and about a business revolution that we are in the middle of, a platform revolution. Platform-enabled marketplaces, and other Internet-based goods and products with digital components and network effects, produce over half the revenue for over half of the world's 100 largest companies (e.g., Apple, Facebook, Amazon, Google, American Express, Time Warner). Technology entrepreneurship is commonplace. But this class of goods has very different, almost weird, characteristics, with distinctive economic forces that affect supply (e.g., supply and 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 distinctive 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?
- The insights from this course are most relevant to 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 mix of simple but rigorous analytical models, emerging theories, and plenty of real-world examples, cases and experiences.

Examples of Strategic Questions Discussed in MGx250

- How should platforms solve coordination problems (e.g., around adoption)?
- How should firms adapt product design, pricing, 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?
- How should platforms manage communities of complementors?
- 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 (you're assumed to know or refresh)

- MBA core class in economics (202A "Markets and the firm", and - recommended - 204A (Marketing Management)): 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.
- MBA core class in Statistics (203A "Data analysis for managers"). Recommended: 203B (Forecasting and Managerial Research Methods) or prior knowledge of statistical data analysis techniques.
- Do the pre-course assessment, score at least 80%.

Student Workload and Grading

Pre-course Assessment and Homeworks (Due 48 hours ahead of class date)

These assignments (along with Readings and Case writeups) are designed to get you well prepared for class topics and discussion. Homeworks will be group assignments, graded primarily on effort.

Grading Principles

Everyone starts with a B. Maintain this grade by attending class sessions, listening responsibly, making timely submissions, and putting an average effort in assigned work. Shift lower by missing classes, being late on assignments, or being disruptive (e.g., being late) or distracting (e.g., using social media). Improve to B+ or A- through high quality on assigned work. Get to an A by demonstrating a high level of understanding, analysis, and insight regarding class topics. Another way to think about grades: [A] A cause for celebration; [B] Be happy, this is pretty commendable; [C] See what happens if you don't follow instructions?; [D] Do you really want to go there?

Two In-Class Quizzes and Class Participation

This element of the course will test your ability to understand and apply class topics. **In-class “surprise quizzes” will be added (if so, they will occur during the first 10 minutes of class) if people are coming in late to class. You know the start time, be there 5 minutes early.**

Selected readings for each session are marked in Session overview pages. A complete list of readings is at the end of this document - separated into 3 parts, those that can be accessed online (via the campus library, you should be signed into the VPN, see <https://www.library.ucdavis.edu/service/connect-from-off-campus/>), those in a Harvard course pack, and additional articles on study.net.

In addition, there are now several books on platforms, and the benefit of a book is that it provides a coherent and comprehensive perspective. Read any one of these excellent books.

- “The Business of Platforms, Strategy in the Age of Digital Competition, Innovation, and Power” (ISBN 0062896326).
- “Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You” (ISBN 0393354350).

Disclosure: authors are my friends or collaborators, but, honestly, these books are really good.

General note about assigned readings: I do not “teach from” the readings, so don’t expect me to cover the same material. Instead, read them in advance so that we can analyze the material or get beyond it. That will help you get the most from our class meetings.

Session 8 is an “application day” where you apply the abstract ideas, concepts and methods onto a concrete platform business problem. Here are 4 sample project ideas (for Teams 1...4) - defined in terms of the pain points they would address - but we can jointly revise these within the first 2 weeks. The business should be impactful, successful, and financially sustainable. Cover issues of product design, launch, data policy, pricing, network mobilization, costs etc.

- ❶ Bike-Tracing service: dozens of bicycles get stolen every month in Davis. Use technology and platform thinking to create quick and effective trace on stolen bikes.
- ❷ UC Davis “free lance” service: campus units frequently need short-term help on tasks that need specific skills, but external contracting is extremely slow and burdensome. Build a matchmaking system that can leverage internal campus resources for such task opportunities.
- ❸ Food Waste Management service: every day tons of food (raw, cooked, packaged) gets wasted in Davis due to excess supply, while at the same time thousands of people are short of food or money for healthy food. Solve this problem with a web platform (covers discovery, matching, routing etc.).
- ❹ Healthy Davis: barriers to fitness and healthy living include access to facilities, but also lack of motivation, expertise, equipment, fitness partners, social groups etc. Design a solution that leverages network effects, communities and other platform features to promote health and fitness within the Davis community.

Note: These are suggested projects. I welcome suggestions for an alternate project if your team can do so in a timely manner.

- A big chunk of student coursework will be done within teams. This includes group homeworks, leading one case discussion (out of 1. WeChat, 2. Intuit, 3. Square, 4. PayPal.) while still preparing for all others, and working on an application project. These team assignments will be organized into “groups” – 4 groups in each section, labeled 1,2,3,4.
- In each section students will be divided into 4 teams, such that Team i will work on Project i , and be the Lead team for case discussion on Case i .
- You (your team) will be given some freedom in deciding which homework group you are assigned to (i.e., is your team labeled 1, 2, 3, or 4) - because that will affect exactly what project and homeworks your team will work on.
- The way you exercise your choice is: as soon as a team member completes their pre-course assessment, they are eligible to pick their team label. Your label will be of the form T_i (for MGT section, Davis), P_i (for MGP, Sacramento) or B_i (MGB, Bay Area). The mechanism for doing so will be posted on the Canvas site as an “announcement” by the TA.

- **Students** - background, ambition, expectations.
- **Course overview**- objectives, schedule, expectations, grading scheme.

Learning objectives

- What distinguishes “technology goods” (information goods, network goods, platforms)?
- How are they different, transformational, and disruptive?
- Why do we care? How does/should their distinctive characteristics affect competitive strategy and create notable market outcomes?

Readings

- 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>.
- Marshall W Van Alstyne, Geoffrey G Parker, and Sangeet Paul Choudary. “Pipelines, platforms, and the new rules of strategy”. In: *Harvard business review* 94.4 (2016), pp. 54–62.
- Thomas Eisenmann. “Platform-Mediated Networks: Definitions and Core Concepts”. In: *Harvard Business School* (2007), skip Appendix B-C.
- <http://platformed.info/how-platforms-transform-traditional-industries/>

Learning objectives

- What are network effects (and types - direct vs indirect), network goods, platforms (and types - innovation vs transaction)? What economic elements are important in analyzing them? When are they strategically important?
- How do network effects influence a consumer's adoption decision and realized market demand?
- What are the different types of platforms, what core functions do they provide, and what major hurdles do they face?

Readings

- Eisenmann, "Platform-Mediated Networks: Definitions and Core Concepts", Appendix B-C
- **Andrei Hagiu**. "Strategic Decisions for Multisided Platforms". In: *MIT Sloan Management Review* (Jan. 2014)
- **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, up to §2.2

Learning objectives

- What is the essence of being a platform business?
- How do platforms happen? How do platforms employ staging and/or transition from product to platform models?
- How do platforms employ tactics in product design (e.g., balancing standalone vs network features), launch management (e.g., effective seeding), product differentiation (e.g., freemium and versioning) to tackle fundamental challenges in platform creation?

Readings

- Daniel Edelman. "How to Launch Your Digital Platform: A Playbook for Strategists." In: *HBS Blog* 93 (4 Apr. 2015).
<https://hbr.org/2015/04/how-to-launch-your-digital-platform>
- Bhargava, "Platform technologies and network goods: insights on product launch and management", from §2.3
- Thomas Eisenmann and Andrei Hagiu. "Staging Two-Sided Platforms". In: *Harvard Business School* (2007)
- **Case discussion:** Willy Shih, Howard Yu, and Feng Liu. "WeChat: A Global Platform?" In: *Harvard Business School* (Aug. 2017).
- Read the Amazon story (Forbes).

Learning objectives

- (When) Should you be a platform or a product business?
- Why do platforms succeed or fail?

Readings

- Feng Zhu and Nathan Furr. “Products to Platforms: Making the Leap”. In: *Harvard Business Review* 94 (4 Apr. 2016).
- Thomas Eisenmann, Geoffrey Parker, and Marshall Van Alstyne. “Opening Platforms: How, When and Why?” In: *Platforms, Markets And Innovation*. Ed. by Annabelle Gawer. available on SSRN. Edward Elgar, 2009. URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1264012.
- Marshall W Van Alstyne, Geoffrey G Parker, and Sangeet Paul Choudary. “Reasons Platforms Fail”. In: *Harvard Business Review* 31.6 (2016), pp. 2–6.
- **Case discussion:** Andrei Hagiu and Elizabeth J. Altman. “Intuit QuickBooks: From Product to Platform”. In: *Harvard Business School* (Dec. 2013).

Learning objectives

- What are some tactics for monetizing across heterogeneous consumers? (e.g., product and price differentiation, segmentation, versioning and bundling (for durables), or one-time vs recurring revenues for consumables)
- How should these tactics be adapted for network goods and platforms, to address growth vs. profitability conflicts?
- When and how should these tactics be deployed?

Readings

- Hemant K. Bhargava and Manish Gangwar. "Pricing Strategy for Service Start-ups: How to Employ Access and Usage Fee? [Research paper at <http://ssrn.com/abstract=3490946>]". In: *Forbes India* (2017). URL: <http://www.forbesindia.com/article/isb/pricing-strategy-for-service-startups-how-to-employ-access-and-usage-fee/48097/1>.
- Hemant K. Bhargava. *Pricing Strategies for Network Goods*. Working Paper, University of California Davis. 2017.
- **Case discussion:** Sarit Markovich et al. "Hip to be Square: Disruption in the U.S. Mobile Payment Market". In: *Harvard Business School* (Feb. 2014).

Learning objectives

- How should multi-sided platforms adapt customer acquisition tactics to mobilize their networks?
- How should multi-sided platforms solve the chicken-and-egg problem in adoption, while creating and balancing growth on multiple sides of the market?

Readings

- Thomas Eisenmann, Geoffrey Parker, and Marshall van Alstyne. “Strategies for Two-Sided Markets”. In: *Harvard Business Review* (Oct. 2006)
- Hemant K Bhargava and Olivier Rubel. “Sales Force Compensation Design for Two-Sided Market Platforms”. In: *Journal of Marketing Research* (2019), p. 0022243719825818.
- **Case discussion:** Thomas Eisenmann and Lauren Barley. “PayPal Merchant Services”. In: *Harvard Business School* (Dec. 2007).

Learning objectives

- What is bundling and Why and When does it work?
- How do the principles of bundling apply to platforms that aggregate supply and innovations from an ecosystem of partners?
- How should platforms manage their ecosystem community and provision of complements?

Readings

- Kevin Boudreau and Karim R. Lakhani. "How to Manage Outside Innovation". In: *MIT Sloan Management Review* (Jan. 2009). URL: <https://pdfs.semanticscholar.org/8bc1/0b36f50faffa7d42870125753f14485c4ef6.pdf>.
- Hemant K. Bhargava. "A Model for Value Co-Production and Cross-Producer Bundles". In: *under review* (). URL: <http://ssrn.com/abstract=3490949>.

Learning objectives

- Let's apply what we've learnt.
- Plus some * time to catch up things we missed.

Readings

TBD.

Learning objectives

- How does co-dependence between platform owners and complementors affect market outcomes (such as exclusivity contracts with complementors) in platform competition? When are exclusivity contracts with developers desirable and likely?
- How does bundling affect the competitive interplay between an existing tech platform and an innovative entrant?
- How should platforms engage with frenemies: competitors who are also competitors?

Readings

- Jianqing Chen Ron Adner and Feng Zhu. “Frenemies in Platform Markets: The Case of Apple’s iPad vs. Amazon’s Kindle”. In: *HBS Working Paper, No. 15-087* (Jan. 2016).
- 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.
- David B Yoffie and Mary Kwak. “With friends like these: The art of managing complementors.”. In: *Harvard business review* 84.9 (2006), pp. 88–98. URL: <https://hbr.org/2006/09/with-friends-like-these-the-art-of-managing-complementors>.

Learning objectives

- How should platforms be regulated?
- How should platforms fiercely apply competitive strategy without crossing into violation of competition policy?

Readings

- Hemant K Bhargava, David S Evans, and Deepa Mani. "The Move to Smart Mobile and Its Implications for Antitrust Analysis of Online Markets". Jan. 2016.
- Hemant K. Bhargava et al. "Data Policy and Choices in Platforms". In: *working paper* (2019). URL: <https://ssrn.com/abstract=3473606>.

- Assignments will be posted on Canvas. This includes team homeworks and preparation questions for case discussion, and the application project.
- Homeworks 1 and 2 will be graded, and so will the case writeups - mostly for effort and clarity. Homeworks for sessions 3 and 5 are meant to help you make progress on your application project.
- If you're the Lead Team for a case discussion I expect that every team member is vested in the entire writeup (even if you were to split the work and write parts of it). Anyone can be called upon for discussion.
- If you're not the lead team you can still be called upon to demonstrate you've read the case and thought through the key questions.

These are the readings from each class session and they are labeled by their location/access. Some are found in the Harvard Business School coursepack, some are found in the Study.net course, and others are linked directly to the item. Many items need to be accessed while on a campus network (Eduroam or UCDMC) or by [using the Library VPN](#) if off campus. The specific URLs are included as well if for some reason the linked items do not work.

S1

1. Hal R. Varian. "[High Technology Industries and Market Structure](#)". In: Federal Reserve Bank of Kansas City Proceedings (2001).
<http://ideas.repec.org/a/fip/fedkpr/y2001p65-101.html>
2. Marshall W Van Alstyne, Geoffrey G Parker, and Sangeet Paul Choudary. "[Pipelines, platforms, and the new rules of strategy](#)". In: Harvard business review 94.4 (2016), pp. 54-62. **[Needs VPN]**
<https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=113934414&site=ehost-live>
3. Thomas Eisenmann. "Platform-Mediated Networks: Definitions and Core Concepts". In: Harvard Business School (2007), skip Appendix B-C. HBS 807049 **[Harvard coursepack]**
4. [How Platforms Transform Traditional Industries](#)
<http://platformed.info/how-platforms-transform-traditional-industries/>

S2

5. Thomas Eisenmann. "Platform-Mediated Networks: Definitions and Core Concepts". In: Harvard Business School (2007), Appendix B-C. HBS 807049 **[Harvard coursepack]**
6. Andrei Hagiu. "[Strategic Decisions for Multisided Platforms](#)". In: MIT SLOAN MANAGEMENT REVIEW (Jan. 2014) **[Needs VPN]**
<https://sloanreview.mit.edu/article/strategic-decisions-for-multisided-platforms/>
7. Hemant K. Bhargava. "Platform technologies and network goods: insights on product launch and management". Up to §2.2 In: Information Technology and Management (2014), pp. 1–11. issn: 1385-951X **[Study.net course]**

S3

8. Daniel Edelman. "[How to Launch Your Digital Platform: A Playbook for Strategists.](#)" In: HBS Blog 93 (4 2015). R1504H **[Needs VPN]**
<https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=101711629&site=ehost-live>
9. Hemant K. Bhargava. "Platform technologies and network goods: insights on product launch and management". From §2.3 In: Information Technology and Management (2014), pp. 1–11. issn: 1385-951X **[Study.net course]**
10. Thomas Eisenmann and Andrei Hagiu. "Staging Two-Sided Platforms". In: Harvard Business School (2007). HBS 808004 **[Harvard coursepack]**
11. Willy Shih, Howard Yu, and Feng Liu. "WeChat: A Global Platform?" In: Harvard Business School (2017). HBS 615049 **[Harvard coursepack]**

S4

12. Feng Zhu and Nathan Furr. "[Products to Platforms: Making the Leap](#)". In: Harvard Business Review 94 (4 2016). R1604E **[Needs VPN]**
<https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=113934587&site=ehost-live>
13. Thomas Eisenmann, Geoffrey Parker, and Marshall Van Alstyne. "[Opening Platforms: How, When and Why?](#)". In: Platforms, Markets And Innovation. Ed. by Annabelle Gawer. available on SSRN. Edward Elgar, 2009.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1264012.
14. Marshall W Van Alstyne, Geoffrey G Parker, and Sangeet Paul Choudary. "6 Reasons Platforms Fail". In: Harvard Business Review 31.6 (2016), pp. 2-6. HBS H02S2M **[Harvard coursepack]**
15. Intuit QuickBooks: From Product to Platform HBS 714433 **[Harvard coursepack]**

S5

16. Hemant K. Bhargava and Manish Gangwar. "[Pricing Strategy for Service Start-ups: How to Employ Access and Usage Fee?](#)". In: Forbes India (2017).
<http://www.forbesindia.com/article/isb/pricing-strategy-for-service-startups-how-to-employ-access-and-usage-fee/48097/1>
[Research paper at <http://ssrn.com/abstract=3490946>]
17. Hemant K. Bhargava. Pricing Strategies for Network Goods. Working Paper, University of California Davis. 2015 **[Study.net course]**
18. Case discussion: Sarit Markovich et al. "Hip to be Square: Disruption in the U.S. Mobile Payment Market". In: Harvard Business School (Feb. 2014). KEL 792 **[Harvard coursepack]**

S6

19. Thomas Eisenmann, Geoffrey Parker, and Marshall van Alstyne. "[Strategies for Two-Sided Markets](#)". In: Harvard Business Review (2006) **[Needs VPN]**
<https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=22316862&site=ehost-live>
20. Hemant K Bhargava and Olivier Rubel. "[Sales Force Compensation Design for Two-Sided Market Platforms](#)". In: Journal of Marketing Research (2019) v56 n4 **[Needs VPN]**
<https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=137422131&site=ehost-live>
21. Thomas Eisenmann and Lauren Barley. "PayPal Merchant Services". In: Harvard Business School (2007). HBS 806188 **[Harvard coursepack]**

S7

22. Kevin Boudreau and Karim R. Lakhani. "[How to Manage Outside Innovation](#)". In: MIT Sloan Management Review (Summer 2009 v50 n4). **[Needs VPN]**
<https://sloanreview.mit.edu/article/how-to-manage-outside-innovation/>
23. Hemant K. Bhargava. "[A Model for Value Co-Production and Cross-Producer Bundles](#)"
<http://ssrn.com/abstract=3490949>

S8

Application day, no readings

24. 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://www.hbs.edu/faculty/Publication%20Files/15-087_d11252b4-6df7-41f6-83c2-9f4f3d611df6.pdf
25. 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 **[Needs VPN]**
<https://onlinelibrary.wiley.com/doi/10.1002/smj.935>
26. David B Yoffie and Mary Kwak. "[With friends like these: The art of managing complementors](#)". In: Harvard business review 84.9 (2006), pp. 88-98 **[Needs VPN]**
<https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=21882969&site=ehost-live>

27. Bhargava, H.K. et al. "[The Move to Smart Mobile and Its Implications for Antitrust Analysis of Online Markets](#)"
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2721394
28. Bhargava, H.K. et al. "[Data Policy and Choices in Platforms](#)" Georgia Tech Scheller College of Business Research Paper No. 3473606
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3473606