Managing Technology and Innovation

Course Syllabus

V3

Spring 2018

Thursdays, 12:30-3:20
Lee Hall

Ben Gomes-Casseres
Professor of International Business
Author, *Remix Strategy*

Contact information
Office: Lemberg 258
Email: bgc@brandeis.edu (best way to contact me)
Office hours: Fridays, 1.30-3:00 or by appointment (email me to set time)
Course website: www.strategygroove.com
## Course Outline

- **Cases** and some articles are in case packet: [http://cb.hbsp.harvard.edu/cbmp/access/72377007](http://cb.hbsp.harvard.edu/cbmp/access/72377007)
- **Other articles** are available on the Business Source Premier database at Brandeis LTS.
- **guest speakers or project presentations; you are still responsible for readings assigned.**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>SECTOR</th>
<th>REQUIRED CASES AND READINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>• The Information Economy (Shapiro/Varian)</td>
</tr>
<tr>
<td>1/25</td>
<td>Networks and Platforms</td>
<td>Web 2.0</td>
<td>• <em>LinkedIn Corp, 2008 (HBS case)</em></td>
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<td>• Multi-sided Platforms: Foundations and Strategy (HBS note)</td>
</tr>
<tr>
<td>2/1</td>
<td>Disruptive Technologies</td>
<td>Media</td>
<td>• <em>Netflix in 2011 (HBS case)</em></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Disruptive Technologies (Bower/Christensen)</td>
</tr>
<tr>
<td>2/8</td>
<td>Lean Business Development</td>
<td>Retail</td>
<td>• <em>Rent the Runway (HBS case)</em></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Lean Start-Up (Blank)</td>
</tr>
<tr>
<td>2/15**</td>
<td>Sharing and Intermediation</td>
<td>Talent markets</td>
<td>• <em>Upwork (HBS case)</em></td>
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<td></td>
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<td></td>
<td>• Rise of the Supertemp (Miller/Miller)</td>
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<td></td>
<td>• <strong>Speaker: Diane Mulcahy</strong></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• PROJECTS: Plan of work</td>
</tr>
<tr>
<td>3/1</td>
<td>Review of topics</td>
<td>surprise</td>
<td>• Midterm exam (normal class time)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• <em>Case distributed by email on 2/28</em></td>
</tr>
<tr>
<td>3/8**</td>
<td>Architectural Innovation</td>
<td>Auto-tech</td>
<td>• <em>Mobileye (HBS case)</em></td>
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<td></td>
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<td>• Auto Value Chain (Simoudis)</td>
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<td>• <strong>Speaker: Evangelos Simoudis</strong></td>
</tr>
<tr>
<td>3/15**</td>
<td>Disintermediation</td>
<td>Fin-tech</td>
<td>• <em>Bitcoin (HBS case)</em></td>
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<td></td>
<td></td>
<td>• Fintech in Capital Markets (BCG)</td>
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<td></td>
<td></td>
<td>• PROJECTS: Progress Reports</td>
</tr>
<tr>
<td>3/22**</td>
<td>IP Strategies</td>
<td>Patents</td>
<td>• <em>Intellectual Ventures (HBS case)</em></td>
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<td></td>
<td></td>
<td></td>
<td>• PROJECTS: Progress Reports</td>
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<td>3/29</td>
<td>Thur</td>
<td>IP Regimes</td>
<td>International</td>
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<td>4/10</td>
<td>Tues</td>
<td>Ecosystems</td>
<td>Cybersecurity</td>
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<td>4/26</td>
<td>Thur</td>
<td>NO CLASS</td>
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<tr>
<td>5/3</td>
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<td>Final reports due for all students – by email to <a href="mailto:bgc@brandeis.edu">bgc@brandeis.edu</a>, in PDF format</td>
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Course Objectives

Brandeis wants to promote innovation by its students. This course teaches the what, why, how, and so what of innovation. It gives students an analytical framework, draws lessons from classic cases, and asks students to apply these ideas to “innovation challenges” that are provided by project sponsors.

The course is intended for master’s students and advanced undergraduate students interested in careers in large or small companies that face innovation challenges and so need strategies to create and capture value from new technologies and new business models.

Innovation challenge projects. The innovation challenges in this course are posed by project sponsors from inside and outside Brandeis. For example: What are the market prospects for a new line product or service? What are the strengths and weaknesses of competing players? What do potential customers value? What lessons do historical cases have for a new business? How can the company best present and support its business model? The possibility of sponsoring an innovation challenge project in the course will be open to leaders of Spark, Sprout, and 3DS on campus, and to other a range of organizations in the Boston area.

Students learn how to approach such challenges in concept and with cases, and then roll up their sleeves to help the sponsors develop a strategy for their specific challenges. Two major outcomes are: (1) students learn how to tackle innovation challenges and get some experience doing so; and (2) project sponsors get new perspectives from teams of talented students, supervised by faculty, and who have access to information resources at Brandeis University.

Learning goals. The readings, study assignments, class sessions, projects, and papers in this course are designed to help you:

- Understand the strategies and business models in technology sectors
- Develop an approach to diagnosing innovation challenges facing firms
- Apply strategic thinking in a range of tech industry and company contexts
- Use messy, real-world data to help business innovators shape their strategy

Course content. This course deals with issues of general management, not with technical economics or finance. Among the main topics covered are the following:

- Demand and supply side economies of scale
- Information economics
- Multi-sided market and platforms
- Disruptive technologies and business models
- Intellectual property strategy
- National technology clusters and policy
- Social impact of innovation
Course materials

The cases and readings will cover the strategic issues in technology and innovation strategy today: information economics, network externalities, disruptive technologies, platform strategies, lean start-up models, value chain innovation, intellectual property strategies, and national innovation policies. Most of the cases cover more than one of these topics. Conceptual readings are assigned along the way. Sectors covered include computers, web 2.0, healthcare, fintech, automotive, media, retail, and labor. Six guest speakers will bring a variety of perspectives and experience to the classroom discussion.

There is no required textbook, but I recommend Scott A. Shane, Technology Strategy: For Managers and Entrepreneurs (Pearson, any edition). All required readings are free online, or at the Brandeis LTS, or in the case packet available from HBR, as follows:

- The case packet will be available for purchase online here: http://cb.hbsp.harvard.edu/cbmp/access/72377007
- Some articles, as noted in the class assignments, are available for free on the EBSCO Business Source Premier (BSP) database of Brandeis Library; permalinks are provided in this syllabus, but if they don’t work, please just search for the paper in the EBSCO database. (You will need your UNET account info to sign on to BSP.)
- Lectures and some handouts will be available on www.strategygroove.com. Students are strongly encouraged to subscribe to this WordPress site (it's free), so that they are notified when materials are added to the site. This site will be used instead of LATTE, which is not used.

You don’t need special materials for the innovation challenge project, which will be done in the second half of the course. We will use the first half to source projects and allocate teams. Students will tackle the projects in pairs or trios; I will expect and assume that the members contribute equally to the project. I will match students to projects using a preference ranking system and my evaluation of the skills needed for each project.

Relationship to other courses. There are no formal prerequisites, but it is assumed that students have a background in micro-economics and business studies, and are able to analyze financial statements. If you need a refresher on business management, review Ronald J. Ebert and Ricky W. Griffin, Business Essentials, any edition (Englewood Cliffs, NJ: Prentice Hall, 1999 or later). This text is used in the undergraduate course BUS 10a (“Functions of the Capitalist Enterprise”) and is on reserve in Goldfarb Library.

Keeping up with current trends. News sites every day share stories of innovation. This course will encourage and enable you to keep up with current trends and help you to understand them. To do this, we will discuss a number of current trends in class, beyond the cases that are assigned. The innovation challenge project will allow you to dig deeply into a real situation and apply the lessons you are learning in this and other classes. We will host a large number of class
visitors who will bring diverse perspectives from practice. Finally, I encourage you to subscribe and scan daily one or all three of these free newsletters:

- **Data Sheet, by Fortune.** This is focused on general technology news, with links to excellent analysis in *Fortune*. Go to: http://fortune.com/getdatasheet/
- **Term Sheet, by Fortune.** An excellent source of investment news, including private equity, IPOs, and large deals, with links to excellent analysis in *Fortune*. Go to: http://fortune.com/gettermsheet/

**Learning by the case method**

Because this course is based on the case method of learning, class participation by all students is critical. This method of learning is based on three premises. First, we can all learn a great deal from each other’s points of view and experience. Second, we often learn more by questioning each other and debating issues than by listening passively or by reading alone. Third, there is no “one best way” to manage complex business problems; rather, we must search for alternatives and weigh them critically.

In order for this method to work, we must all be prepared to go beyond case facts in the discussion. We will assume that everyone has prepared the case and readings thoroughly—there is simply no time to explain or reiterate case facts. Our discussions will aim to be analytical, not descriptive. This does not mean that we will ignore the facts; to the contrary, students should strive to back up their arguments with the facts of the case. In sum, I will expect three P’s from students in every class:

- **Presence:** You are expected to prepare for and attend all class sessions. It is your responsibility to catch up on material for any class that you miss. You may be excused from class if you are ill, or for urgent family or personal reasons. Under those circumstances, you may make up work by submitting a written analysis, upon agreement with instructor (optional). Attending career fairs, interviews, lunches, internships, team meetings, or other career-related events are not excused absences. You need to make your own trade-offs about these, i.e. decide which are important enough for you to miss class. You will not be penalized for the fact that you missed an occasional class for such reasons, but you will obviously miss the material presented and miss a chance to participate in class; there will be no make-up assignments for these absences. Multiple unexcused absences for may carry a penalty in class participation.

- **Preparation:** You are expected to do the class assignments on time. This means that you are ready to start class or answer assigned questions if called on. In addition, it means that you have analyzed the case and exhibits, not just read them lightly. Where there is
numerical analysis to be done to understand the financials or economics of the case, you will be expected to do this. It is often extremely useful to work in groups in preparing the cases for each class; you are encouraged to do this.

- **Participation:** You are expected to share your views and questions in class. Your class participation grade will depend on the cumulative quality of your contributions in class (see further below). This means that frequency of contributions counts, but also the quality of your comments. A good quality comment is one that applies relevant concepts to the facts of the case and that advances the discussion of issues on the floor. Listening patiently to your peers and engaging them respectfully will be valued.

Class times are Thursdays 12.30 – 3.20, with a 15min break in between. **Please be on time; we start sharply at 12:30. Late arrivals are disruptive. Since our class will be relatively small for the large auditorium, please sit in the first three rows.** If you need to arrive late or leave early, please warn me beforehand. Please eat something before class or during the break. If you must bring something to eat into class, please avoid snacks that may be distracting to your neighbors.

In most class sessions, we will discuss the assigned case in the **first part of class**, which may last between 90min and 120min. Short lectures may be folded into this part of class at any point – at the start of class, or when a topic comes up that deserves a short lecture. You will be expected to draw lessons from the class discussion with your peers, from the instructor’s comments and board notes, and from the lectures. The **second part of class**, after the break, will be devoted to speakers, team presentations and on developing critical skills in analyzing and developing innovation strategy.

**Laptops** are not needed during class discussion and **should not be open**; even "quiet" screens are distracting to those around you. You should print the materials you need for class and take notes on paper, as it is not possible to analyze a case deeply without marking it up. Calculators are allowed in class, text-messaging and Internet access are not. These rules also apply strictly during the in-class mid-term exam too. They also apply when we have visitors (especially then!) and when your fellow students are presenting.

**Grading**

Students will be graded on a combination of the following:

- **Contributions to class discussions (40%).** I will keep a record of class performance for each student and determine a grade based on the frequency and quality of in-class comments. Work on any occasional exercises and presentations will be counted as class participation, as will your in-class feedback to the project work of your peers. Students will receive a midterm evaluation on class participation. To help me get to know you and remember your comments, you should always have your name card up. If you feel unsure about your participation or the class process, ask me for clarification.
• **A written midterm exam (20%).** This will consist of analysis of a case. On the day before the midterm, I will send you the case by email. The exam itself will take place during normal class hours. You will then be asked 2-3 questions about the issues in the case, which should be answered in writing during the 2-hr exam period. This is an open-book exam, i.e. you may bring books and printed notes (no computers or reading pads); but hand in only what you write in the exam class. The required analysis will be similar to what we do in class.

• **A final project report (40%).** Final reports are written by the teams that work on each innovation challenge. Students will tackle the external innovation challenges in pairs or trios; I will expect and assume that the members of these pairs contribute equally to the project. The final grade will also reflect how well your team uses the opportunities for presentation and feedback that you will have during the course. Early engagement with the project and sustained effort are not only the key to a successful final product, but will also be valued in my evaluation of your project work.

**Innovation Challenge Projects**

During the first half of the course, we will source the projects that you will work on – we’ll put out a notice that describes our capabilities and ask organizations to list the innovation challenges they would like you to work on. Then we will conduct a matching process whereby we allocate a few projects (probably 5-6) to small teams of students. We will try to take into account your preferences as well as your skills, so that we have engaged and balanced teams. You will also be welcome to offer up any projects that you know of from your own friends and contacts. We will brainstorm on how best to find and decide on the projects.

The projects should all be assigned by the time of the midterm. (The midterm is not about the projects.) We will meet to shape your project and there will be 2-3 opportunities for each team to present work in progress briefly to the class. (These presentation slots are signaled in the syllabus below, but they may change.) These presentations are not expected to be finished products, but opportunities for you to share where you are and to ask for input on where to go next. So, use these to pose questions and ask for feedback, not so much to impress us with all the information you have gathered so far. We want to hear your own thinking about the data.

You will work on these projects during the second half of the term – the 8 weeks in March and April. During this time, there will also be normal classes and cases, and you are expected to prepare for class and participate as usual. I’d estimate that you should plan to spend about 5hrs/week on the project work and about 4hrs on preparing for class.

As you can see from this short description, these innovation challenge “gigs” are in themselves a new program for us at IBS, so we will be learning and innovating together. They are different from full-semester consulting projects that are taught in dedicated field-project courses, and
different from a traditional internship that you might do on your own. Our objective is to do research and think hard about a limited set of focused innovation questions, using the concepts in the course. As with any start-up, I am sure that we will “pivot” several times as we shape the program to serve your educational and professionals goals.

Throughout this project, you will be expected to act professionally with your “client” – remember, you are the face of Brandeis. The same is required of your behavior toward your peers in your team. If you have any doubts about how to approach a situation or handle a relationship, seek advice. Pito Salas in CoSi provides excellent advice on how to manage your team and your client, here: http://csfp.s3-website-us-west-2.amazonaws.com (The technical detail is for computer science field projects, but the project management advice is totally transferrable to our context.)

Your final report would cover these points, subject to adjustment depending on the project:

- **Statement of the innovation challenge facing the organization.** Try to frame the challenge using any of the concepts discussed in the course, Be sure that this statement reflects the concrete facts of the case you are working on.

- **Presentation of the data useful in answering the innovation challenge.** You can use data from the business press, from annual reports, and from other sources. A useful place to start is with the online resources available through the Brandeis library; a guide is at: http://brandeis.libguides.com/Strategy. In your paper, you should keep this section to a minimum – describe only what is needed for the reader to understand the context and to begin addressing the issues you are exploring. Do not write a full-fledged descriptive “case.” It is often best to provide the evidence “as you go” during the analysis, rather than as a stand-alone section.

- **Analysis of your evidence.** This is the body and most important part of the paper; use the evidence and the concepts to answer the questions you raised at the start. It is best to choose a clear focus and framework and use it throughout the paper. The grade for the paper will depend substantially on the depth, breadth, and clarity of your analysis.

**Paper length** written by teams of two students should be 15-25 pages, and papers by three students should be 25-35 pages. Exhibits should be used and analyzed in the paper, not added as “padding.” Exhibits can be included in the flow of the text or at the back of the paper; if at the back, make sure that the text refers clearly to each exhibit, as needed. The final electronic file that is submitted to me (see below) should have exhibits in the same electronic file; do not send two separate electronic files.

Please be sure to cite your sources and provide references. All direct quotes, specific data, paraphrased text, all tables and graphics, and important arguments should be properly sourced with foot- or end-notes; a bibliography can be used as reference for general discussions. Every year I downgrade some papers because of insufficient referencing; papers that plagiarize the
work of others in a major way are not treated so kindly. You are responsible for reading and understanding our standards for Academic Integrity – if you have any questions, ask!

Papers should be **submitted to me by email in PDF format** no later than the day listed in the schedule. Unexcused late submissions will be penalized. If you have a good reason for missing this deadline (e.g. illness), you will need to get an “Incomplete” from me before this date.

**How I treat poorly referenced papers.** If a paper handed in at the end of the course is poorly referenced, I will send it back to you for correction, unless the paper appears to be a clear case of plagiarism. The resubmitted paper, assuming referencing is satisfactory, will receive a 1/3-grade penalty for lateness. But no further action will be taken in these cases. Other violations of academic honesty norms will be dealt with as described in the handbook of Student’s Rights and Responsibilities at Brandeis.

**Contacting me**

*Email is the quickest way to reach me;* I usually respond promptly. You will also be expected to check your Brandeis email regularly, as I will send out notices to class from time to time. I will have **open office hours** in my office (Lemberg 258) on Fridays when school is in session, 1.30-3.00. You do not need an appointment if you come during these open office hours. If you cannot come at these times and want to see me **by appointment at another time**, please contact me by email at bgc@brandeis.edu.

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Success in this four-credit course is based on the expectation that students will spend a minimum of 9 hours of study time per week in preparation for class (readings, papers, projects, team discussions, preparation for exams, and so on.)

You are expected to be honest in all of your academic work. **This includes proper citation of the work of others in your papers and presentations.** Potential sanctions include failure in the course and suspension from the university. If you have any questions about my expectations, please ask.

If you are a student with a documented disability on record at Brandeis University and you wish to have a reasonable accommodation made for you in this class, please see me immediately. Please keep in mind that reasonable accommodations are not provided retroactively.
Tips for Preparing, Participating, and Learning in Case Classes

1. Read the assignment questions and think about how this case and the questions fit in the course. What have we done so far? What appears to be the topic for this class?

2. Skim the case; this means:
   - Read opening paragraphs and the
   - Look at every exhibit to see what kind of data are offered
   - Read quickly a few parts of the case to glean the main themes
   - Go back to the assignment questions: What will you need to focus on in the case?

3. If there is an additional reading that is to be used in analyzing the case, read that next, or decide what other tools you need to attack the case. Sometimes additional reading is optional; in that case read it later. Use your judgment in allocating reading time.

4. Read the case and mark up useful information. Don’t highlight all of it; just scribble and highlight as needed to bring out the most important facts and issues. Keep an eye out for case facts that may be useful in answering the assigned questions or the main issues.

5. Analyze the exhibits; this means:
   - Identify what important messages they contain that speak to the issues
   - Do some calculations to get beyond the numbers that are presented (e.g. ratios)
   - Spend extra time on exhibits that seem to be core to the issues, skim over others

6. Prepare your analysis, this means:
   - Write down your answers to the assignment questions, in bullet or short form
   - Make reference to case facts to support your answers
   - Write down any additional issues that may be interesting to bring up in class

7. Discuss your analysis with fellow students; this means:
   - Get together in a study group or over coffee or dinner
   - Hear the perspectives of others; share insights; get tips for your analysis
   - “Rehearse” with them how and what you would say in class

8. You are now ready for class!
   - If you are lucky, you will be called to start class; open with your best shot
   - Otherwise, raise your hand and jump into the discussion with additional thoughts
   - Early in a class, you can usually use your prepared analysis; later, topics may evolve

9. When you get the floor:
   - Try to connect (build, debate) to what was said before, or to the issues “on the floor”
   - Try to explain your idea and argument, using facts to back it up, and be ready to elaborate
   - Don’t be concerned about your speaking skills or accent: We will listen!

10. After class, jot down what you learned, including
    - New insights about the topic or about how to approach the subject next time
    - Tips to yourself about case analysis and preparation
Study Assignments

Note: For each class, the assignment usually includes one or more cases and one or more conceptual readings (article or chapter). In class we will discuss the cases, while applying the concepts. In other words, you must study and "prepare" each case, using the assignment questions to guide you. Look carefully at the assigned pages, as in some cases you do not read to read the whole case or chapter.

See page 1-2 of this syllabus for a summary of readings and for reminder of where to get the materials. You are responsible for acquiring the materials and following this syllabus.
Thursday, 1/11

*Technology Strategy Fundamentals*

**Required readings:**

*Intel Corp.--1968-2003*, Ramon Casadesus-Masanell; David B. Yoffie; Sasha Mattu  
IN HBR CASE PACKET
Describes three stages in Intel’s history: the initial success and then collapse in DRAMs and EPROMs, its transition to and dominance in microprocessors, and its move to become the main supplier of the building blocks for the Internet economy. Allows a rich discussion of industry structure and transformation in DRAMs and microprocessors, creation of competitive advantage and value capture, and sustainablitity.

*Information Economy: What Every Manager Should Know*, Carl Shapiro; Hal R. Varian  
IN HBR CASE PACKET
Technologies change--economic principles do not. This chapter overviews such concepts as the production costs of information goods, the nature of intellectual property, systems competition, switching costs, positive feedback loops, network effects, and standards setting in terms of the strategies that will prevail in our hyper-connected economy.

**Study questions:**

1. How would you explain Intel’s initial dominance and subsequent decline in DRAMs?
2. Why did Intel succeed in microprocessors?
3. Using the concepts in the article, how was the microprocessor business different from the DRAM business?
4. How did Intel create value and capture value in the microprocessor business?

*Note: The article by Shapiro and Varian is chapter one in their book Information Rules, which is highly recommended as background reading for this course, or for your general education in tech strategy. The full citation is in Selected Bibliography at the end of the syllabus.*

*Another excellent book on strategy of Intel, Microsoft, and Apple – and the lessons for others – is Yoffie and Cusumano’s Strategy Rules, listed in Selected Bibliography. If you are in this field, buy or borrow this book and skim or read – not for this class, but later.*

**Project-related work in this class:**

Discussion of process for doing Innovation Challenge Projects (no prep needed)
Thursday, 1/25

*Networks and Platforms*

**Required readings:**

*LinkedIn Corp., 2008*, David B. Yoffie; Michael Slind; Nitzan Achsaf  
IN HBR CASE PACKET

In June 2008, the online professional networking service LinkedIn became a $1 billion company. But CEO Dan Nye understood that LinkedIn faced several strategic dilemmas. Founded in 2002, LinkedIn by 2008 had become the world’s leading professional networking service (PNS), with more than 23 million members. Aiming to "dominate the business of business networking," in Nye’s words, LinkedIn allowed individual members to post a profile on the LinkedIn site and then to use the site’s tools to search for job opportunities; to recruit job candidates; to find suppliers, partners, and customers; and to seek out expert advice. The company was also expanding into corporate services that would enable companies to build and manage their own online networks.

IN HBR CASE PACKET

This note offers an analysis of four fundamental strategic decisions and associated tradeoffs that set MSPs apart from other types of businesses (e.g. product firms) and that every MSP entrepreneur and investor should carefully consider. In the last section I also discuss an important boundary condition: when is the MSP business model dominated by related - but distinct - business models?

**Study questions:**

1. Evaluate LinkedIn’s strategy to date. What accounts for its success? What are the risks in its strategy?
2. Are there network effects in social networking in general, and in professional networking in particular? Is there likely to be a winner-take-all outcome in these fields?
3. Using the concepts in the note, what kind of platform is LinkedIn? Should it subsidize the creation of any of the markets it is involved in?

**Project-related work in this class:**

Discussion of *sourcing and matching* process (no prep needed)
Thursday, 2/1

*Disruptive Technologies and Business Models*

**Required readings:**

*Netflix in 2011*, Willy Shih; Stephen P. Kaufman  **IN HBR CASE PACKET**

Reed Hastings founded Netflix to provide a home movie service that would do a better job satisfying customers than the traditional retail rental model. But as it encountered challenges it underwent several major strategy shifts, ultimately developing a business model and an operational strategy that were highly disruptive to retail video rental chains. The combination of a large national inventory, a recommendation system that drove viewership across a broad catalog, and a large customer base made Netflix a force to be reckoned with, especially as a distribution channel for lower-profile and independent films. Blockbuster, the nation's largest retail video rental firm, was initially slow to respond, but ultimately rolled out a hybrid retail/online response in the form of Blockbuster Online.

*Disruptive Technologies: Catching the Wave (HBR article)*, Joseph L. Bower; Clayton M. Christensen  **IN HBR CASE PACKET AS “OPTIONAL” – ALSO AVAILABLE ON BUSINESS SOURCE PREMIER HERE**


One of the most consistent patterns in business is the failure of leading companies to stay at the top of their industries when technologies or markets change. Why is it that established companies invest aggressively--and successfully--in the technologies necessary to retain their current customers but then fail to make the technological investments that customers of the future will demand? The fundamental reason is that leading companies succumb to one of the most popular, and valuable, management dogmas: they stay close to their customers.

**Study questions:**

1. What were the differences between Blockbuster’s and Netflix’s business models?
2. Was Netflix disruptive? How – and what precisely does this term mean?
3. Evaluate Blockbuster’s response to Netflix.
4. Did Hastings make the right move in trying to separate the DVD-by-mail business from the streaming business?
5. Think of major examples of disruptive technologies or business models. Be prepared to share.

**Project-related work this week and next week:**

We will **finalise the choice of projects, team assignments, and establish an informal “contract”** to deliver a product to the sponsor. This will be done by email and in class discussion.
Thursday, 2/8

*Lean Business Development*

**Required readings:**

*Rent the Runway*, Thomas R. Eisenmann; Laura Winig  *IN HBR CASE PACKET*
Two months after a successful launch in November 2009, the cofounders of Rent the Runway (RTR), a website that rented designer dresses, are debating whether to grow their startup at a measured pace and focus on improving operational effectiveness, or raise a new round of venture capital sooner than originally planned. Raising more venture capital would allow RTR to aggressively expand its inventory and customer acquisition efforts, in order serve a broader range of customer segments with a wider selection of products, (e.g., accessories, maternity wear).

*Why the Lean Start-Up Changes Everything (HBR article)*, Steven G. Blank  *IN HBR CASE PACKET AS “OPTIONAL” – ALSO AVAILABLE ON BUSINESS SOURCE PREMIER HERE*
In the past few years, a new methodology for launching companies, called "the lean start-up," has begun to replace the old regimen. Traditionally, a venture's founders would write a business plan, complete with a five-year forecast, use it to raise money, and then go into "stealth mode" to develop their offerings, all without getting much feedback from the people they intended to sell to. Lean start-ups, in contrast, begin by searching for a business model. They test, revise, and discard hypotheses, continually gathering customer feedback and rapidly iterating on and reengineering their products.

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**Study questions:**

1. Create a timeline of actions taken by Runway’s founders. Do you agree with the decisions they made along the way?
2. Which actions were important in validating the business model and in refining the concept?
3. Can you suggest different actions that they could have taken?

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**Project-related work this week and next week:**

We will finalize the choice of projects, team assignments, and establish an informal “contract” to deliver a product to the sponsor. This will be done by email and in class discussion.
Thursday, 2/15

*Sharing Markets and Intermediation*

**Speaker:** Diane Mulcahy, *The Gig Economy*

**Required readings:**

*Upwork: Reimagining the Future of Work*, Feng Zhu; Rory McDonald; Marco Iansiti; Aaron Smith

IN HBR CASE PACKET

Upwork, the world's largest freelance talent platform, was the result of a merger between the two leading online freelancing companies in 2014, Elance and oDesk. After the merger, the company operated as Elance-oDesk and continued to manage two online platforms - Elance.com and oDesk.com - independently of one another. However in 2015 the company relaunched as Upwork, with both a new brand and a new platform.

Read relevant parts of Diane Mulcahy's best-selling book *The Gig Economy* (on sale at Amazon Kindle for limited period for just $1.99)

*The Rise of the Supertemp (HBR article)*, Jody Greenstone Miller; Matt Miller

IN HBR CASE PACKET AS “OPTIONAL” – ALSO AVAILABLE ON BUSINESS SOURCE PREMIER HERE


Full-time, permanent jobs with large organizations are quite possibly an artifact of a particular moment in economic history—about 60 or 70 years ago. For elite executives and professionals, such jobs are now in many cases far less attractive than independent, project-based work, say the authors, who are "supertemps" themselves. Independent professionals are making inroads in law, consulting, and even management roles, sometimes earning more than they did in their previous positions while escaping 80-hour weeks, endless internal meetings, and corporate politics.

**Study questions:**

1. Assess the prospect of the gig economy in professional services.
2. Assess Upwork’s strategy. What are its challenges?

**Personal reflection questions:**

3. Reflect on your own career to date and going forward. Will you participate in the gig economy? Why or why not?
4. What skills and attitudes do you have that give you advantages in the gig economy?
5. If you can get a gig this semester, during this course, what would it be? (Professional gig, not driving Uber cars...)

**Project-related work in this class:**

Each team will present their working plan for the project – one written page, and 2 slides.
**Midterm Evaluation**

**Wednesday, 2/28**
*Not a class, but be on the lookout: I will email the exam case to you.*

If for any reason you cannot receive the email in this way, talk to me beforehand. You will need this case in order to do take the exam the following day. The exam itself is open-book; bring the case itself to the exam.

**Thursday, 3/1  12.30-2.30**
*Midterm exam (in normal class time and place)*

You will be asked to answer 2-3 questions about the situation in the case; please bring the case with you, but do not hand in the case. You will get exam booklets to use and that is the only material you should hand in.
Thursday, 3/8  
Architectural and Component Innovation  
Speaker: Evangelos Simoudis (check out his article below!)

Required readings:

Mobileye: The Future of Driverless Cars, David B. Yoffie IN HBR CASE PACKET  
Mobileye was an Israeli company, officially headquartered in The Netherlands, which was a Tier 2 supplier to the global automobile industry. After 15 years of building a leading technology for autonomous driving systems, Mobileye emerged in 2014 as one of the most exciting companies in the race for the driverless car. After going public in August 2014, the company looked set to become the de facto standard for vision-based autonomous and ultimately self-driving cars.

The Innovation-Driven Disruption of the Automotive Value Chain (Parts 1, 2, 3), Evangelos Simoudis  
AVAILABLE ONLINE HERE:  
In the next 10 years we will create more innovations that will impact the automotive industry than we have created in the previous 100. These innovations will be embraced because of certain important problems that must be addressed and will couple technology with other forms of innovation. Because of the disruptive innovations that were introduced to the market in the last 3-4 years, and the ones that will be introduced in the near future, particularly those relating to the electric-autonomous-connected car, the automotive industry is approaching a tipping point of disruption.

Study questions:

1. What are MobilEye’s competitive advantages? And what are its competitive vulnerabilities?  
2. How should they handle the OEM demands for lower prices?  
3. Compare MobilEye’s strategy with Intel’s discussed earlier in the course. Will MobilEye be able to repeat Intel’s success?
Thursday, 3/15

Disintermediation

Required readings:

*Bitcoin: The Future of Digital Payments?* Andrei Hagiu; Nathan Beach  IN HBR CASE PACKET

Fintech in Capital Markets (Boston Consulting Group report), Morel et al

AVAILABLE ONLINE HERE: https://www.bcgperspectives.com/content/articles/financial-institutions-technology-digital-fintech-in-capital-markets/#chapter1

The financial technology (fintech) phenomenon first started to evolve in the capital markets (CM) industry more than 40 years ago. Today, accelerated both by the electronification of trading in the 1990s and the subsequent thrust of the entire financial services industry toward digitization, fintechs—which we define as firms that use innovative technology at scale to either enable or compete with other financial institutions—have experienced exponential growth in the CM domain.

Study questions:

1. How does Bitcoin work? What are its advantages and disadvantages?
2. Can blockchain technology be useful in other markets?
3. How might blockchain and digital currencies disrupt markets? Which markets?

Project work in this class:

Presentations of progress ahead by teams 1, 2, and 3. If your team is on, prepare to present your progress so far and what questions you are addressing. Use the audience to help you think through the challenges you face in the project. Each team will have 10min to present and 5min for Q&A.
Thursday, 3/22

**Intellectual Property Strategies**

**Required readings:**

*Intellectual Ventures*, Andrei Hagiu; David B. Yoffie; Alison Berkley Wagonfeld IN HBR CASE PACKET

Intellectual Ventures creates and acquires intellectual property, which it then seeks to monetize through non-exclusive licensing. In early 2009, as an increasing number of companies were trying to position themselves as leading intermediaries in the market for intellectual property, IV was looking for the best business model to become such a leading intermediary. Its model was predicated on making it easy for small inventors to monetize their inventions and IP (by selling it to IV) and then using its scale and aggregate IP portfolio to extract revenues from potential licensees (usually technology companies).

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**Study questions:**

1. Why is the market for patents so illiquid and inefficient today?
2. Does Intellectual Ventures (IV) have the right strategy to solve the market inefficiencies?
3. Which players in the patent market like IV and which don’t?
4. Think about the projects you are involved in, or have been, in this course or elsewhere. What is the role of intellectual property in these projects?

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**Project work in this class:**

Presentations of progress ahead by **teams 4, 5, and 6**. If your team is on, prepare to present your progress so far and what questions you are addressing. Use the audience to help you think through the challenges you face in the project. Each team will have 10min to present and 5min for Q&A.
Thursday, 3/29

*Intellectual Property Regimes*

**Required Readings:**

*Fusion Systems Corp. in Japan (A)*, Benjamin Gomes-Casseres; Krista McQuade IN HBR CASE PACKET

Describes the international business of Fusion Systems Corp., a small high technology American firm, and a five-year patent dispute the company has in Japan with Mitsubishi Electric. Also describes key features of the intellectual property systems in Japan and related patenting strategies of firms. Finally, describes Fusion's strategy to seek help from the U.S. government. Ends with a decision of how Fusion should respond to Mitsubishi's latest negotiating moves.

**Study Assignment:**

Consider the following questions from the point of view of one of the four parties in the dispute:

- Mitsubishi Electric;
- Fusion Systems;
- MITI; and
- USTR.

From *each* perspective, consider:

1. What is the crux of the problem?
2. What do you really want?
3. What options are available to you now?
4. What do you think the other parties will do?
Tuesday, 4/10
Innovation Ecosystems

There will be a major conference at IBS on Cybersecurity innovation in Israel. You will be expected to attend and learn from the presentations. Times and assignments to be announced.

Thursday, 4/12
Project presentations

We will discuss what you learned at the Cybersecurity conference.

Project work in this class:

Presentations of almost-done work, by teams 1, 2, and 3. If your team is on, prepare to present, telling us what you have found and what your conclusions are for the sponsor. This is a final chance to get some feedback. Each team will have 15min to present, with no Q&A.

Thursday, 4/19
Project presentations

We will close the class with final thoughts.

Project work in this class:

Presentations of almost-done work, by teams 4, 5, and 6. If your team is on, prepare to present, telling us what you have found and what your conclusions are for the sponsor. This is a final chance to get some feedback. Each team will have 15min to present, with no Q&A.

Thursday, 4/26
NO CLASS
Final Report

Thursday, 5/5  All final reports due to bgc@brandeis.edu in PDF format

See pp. 6-8 of this syllabus for paper requirements. Unexcused late submissions will be penalized. If you have a good reason for missing this deadline, you will need to get an “Incomplete” from me before this date.

Remember to reference your sources properly. Improperly references papers will be returned ungraded and may be subject to disciplinary action.

Course requirements differ; in this course, the minimum you should cite are:

- All direct quotes and verbatim text
- All major ideas and arguments
- All graphics, charts, and data series (if you compile a chart or calculate a series, say where the raw data is from and say what you did)
- Any text taken verbatim from the web or another source
- Major portions of text that are paraphrased or drawn from another source
Selected Bibliography

These books are all recommended as background, or as general education in the field of technology strategy and innovation. We will try to put most of them on Reserve at Goldfarb Library; they are readily available on Amazon.com, often at deep discounts for used versions. (Two books that may be useful as “text-booky” surveys are highlighted.)


** Ebert, Ronald and Griffin, Ricky. *Business Essentials*, any edition (Englewood Cliffs, NJ: Prentice Hall, 1999. (This is a good general introduction to business functions, and can serve as brush-up reading, if you feel that is useful in your study.)


** Shane, Scott. *Technology Strategy for Managers and Entrepreneurs*. London: Pearson, 2013. (This is a good general introduction to tech strategy issues, and can serve as a textbook for the concepts in this course, if you feel that is useful in your study.)


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