

The Wharton School, University of Pennsylvania
MGMT/LGST 729, MGMT 229:
Intellectual Property Strategy for the Innovation-Driven Enterprise
Fall 2018, Q2-Elective
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I. Instructor

Steven Weiner is a part-time lecturer in Wharton's Management Department. He also serves as a senior Intellectual Property executive for SRI International, an independent R&D institute based in Silicon Valley; and previously was a partner with Davis Polk, leading that firm's Corporate Intellectual Property practice. He holds degrees from Harvard Law School, MIT and the University of Pennsylvania. Professor Weiner created this course by drawing on his extensive experience advising companies and stakeholders on strategic decisions that require a deep understanding of intellectual property law, advanced technology and business strategy.

II. Student Qualifications and Prerequisites

Strong interest in technology innovation from a business perspective is expected, but there is absolutely no need for deep technical background in order to excel in this course. The course will also benefit Engineering students with entrepreneurial or business management aspirations, as well as Law School students with a strong interest in IP and technology.

III. Course Objectives and Overview

Announcing the first iPhone at Macworld 2007, Apple CEO Steve Jobs famously boasted: "And boy, have we patented it!" How, and to what extent, does intellectual property actually provide competitive advantage for innovative technology companies? What makes an IP asset strategically powerful? How do patents impact – and sometimes drive – major corporate decisions including M&A, venture funding and exits, and entry into new markets? In this course, students will learn to critically analyze and answer these questions, gaining insights they can leverage in their future roles as innovation industry executives, entrepreneurs, strategists and investors.

To achieve these goals, the course is divided into three units:

- In Unit 1, ***Patents and Innovation Value***, we examine closely the relationship between competitive advantage, value proposition, and IP. We apply our understanding of that relationship to critique and to sharpen the patents that protect a company's most important innovations.
- In Unit 2, ***Patent Leverage and the Corporate Playbook***, we study theory and examples of how patent leverage can strategically inform a variety of corporate transactions. We will analyze the benefits and pitfalls of various IP strategies, for established companies as well as for start-ups.
- In Unit 3, ***Limits and Alternatives to Patents***, we confront implications of recent legal trends toward reigning in the scope and power of patents, especially for algorithms. We will review the impact from a business perspective, and we discuss alternatives for adapting IP strategy appropriately in light of these changes and in light of the "big data revolution."

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Each of these units includes an assignment (as described below) encouraging students to apply and reinforce the concepts and techniques we are learning.

Students who take and succeed in this course should expect to acquire insights and methods that they can utilize throughout their careers to contribute important value as stakeholders in innovative technology businesses, from emerging start-ups to industry leaders.

IV. Assignments and Presentations

At the heart of the learning experience in this course are three regular assignments and a final assignment in which students will be challenged to apply the core lessons of the course.

Assignments will typically be performed in small teams. Each team will be asked to orally present and defend their work on one assignment to the class.

Assignment #1: Critique a patent. Students will be given excerpts from an actual U.S. patent with explanatory notes and related background information about associated products, technology, and/or companies. Students will perform additional background research; and will then critique the patent in light of the information provided, their research findings, and the principles we learn in Unit 1 of this class. Findings and conclusions should be submitted in a written report (3-4 pages). Several teams will be assigned to present orally in class (10-15 minutes) and should prepare and submit accompanying slides.

Assignment #2: Select and justify a transactional IP strategy. Students will be given an information packet describing a competitive technology market, including the relevant patent landscape. A menu of possible IP transactions will be outlined in the packet, involving various industry stakeholders. Students will be asked to create a transactional IP strategy for a specified stakeholder by selecting from that menu, and to defend their choices in light of the principles we learn in Unit 2. Findings and conclusions should be submitted in a report (3-4 pages). Several teams will be assigned to present in class (10-15 minutes) and should submit accompanying slides.

Assignment #3: Integrate non-patent alternatives in your IP strategy. Students will be given information for an innovative technology (actual or fictional) with significant elements – such as data models, and “business methods” – that may be difficult to protect with patents. Students will propose and defend an intellectual property strategy integrating both patent and non-patent alternative elements, in light of the principles studied in Unit 3. Findings and conclusions should be submitted in a report (3-4 pages). Several teams will be assigned to present in class (10-15 minutes) and should submit accompanying slides.

Final Assignment: An expanded final assignment at the end of the course will challenge students to integrate and apply the concepts, strategies and skills they have learned throughout the course in the context of a high-stakes, strategic corporate scenario such as a prospective acquisition or investment decision, from the perspective of multiple different stakeholders:

Findings and conclusions from each student team should be submitted in a report (5-6 pages).

For all assignments: Any material reproduced verbatim must be enclosed in quotation marks, with proper attribution made to the source. Ideas and concepts even if not quoted verbatim should be attributed to the author/source, via proper citation.

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V. Grading

- Regular assignments: 45% (15% each)
- Final assignment: 25%
- Oral presentation in class of one assignment: 10%
- Active class participation: 20%

VI. Readings

Required readings (and some optional readings) in preparation for each class are listed below in the course outline. The readings will generally be made available to students via Canvas. Come to class prepared to discuss the assigned readings, with particular attention to the “Study Question” identified in the Course Outline below for each class.

VII. Classroom Rules and Expectations

- Each class starts and ends on time
- Class attendance and active participation is important for successful performance in this course, and will be reflected in class participation grades
- Bring and display your name card at each class. Attendance is taken on that basis at the beginning of each session.
- No use of phones, tablets, laptops or other electronic devices during class:
 - Experience has shown that use of electronic devices during class for non-class purposes significantly disrupts learning, both for the students using the device and for others in the class.
 - All phones and other electronic devices must be turned off and put away. If a student must keep a phone on by reason of a personal emergency, the student must inform the instructor before class begins.
 - Penalties for violations of this policy may include significant loss of participation points and consequent reduction in final grade.
 - If a student is unsure about the electronics policy for this class at any point, he or she should ask the instructor for clarification.

VIII. Office Hours, Faculty Lunches

Time slots for consultation with the instructor via phone call or virtual meeting will be available for sign-up on Canvas, typically for 1 hour each week.

We will also schedule a limited number of student-faculty lunches or dinners. Interested students (up to a maximum of 7 at each meal) will be able to sign-up to attend these meals via Canvas.

IX. Course Schedule

Session	Date	Topic
Unit 1: Patents and Innovation Value		
1	Thurs. Oct. 18	How patents contribute to business: theory & examples
2	Tues. Oct. 23	Value propositions and patent protection
3	Thurs. Oct. 25	Evaluating patent claims from a business perspective
4	Tues. Oct. 30	Guest speaker; Unit 1 wrap-up
5	Thurs. Nov. 1	Assignment #1 Due; In-Class Presentations
Unit 2: Patent Leverage and the Corporate Playbook		
6	Tues. Nov. 6	Defensive strategies: freedom to operate
7	Thurs. Nov. 8	Asymmetric patent warfare
8	Tues. Nov. 13	Guest speaker; Unit 2 wrap-up
9	Thurs. Nov. 15	Assignment #2 Due; In-Class Presentations
Unit 3: Limits and Alternatives to Patents		
10	Tues. Nov. 20	Limits: <i>Alice</i> and “Abstractness”
11	Tues. Nov. 27	Alternatives to patents; Big Data revolution
12	Thurs. Nov. 29	Assignment #3 Due; In-Class Presentations
13	Tues. Dec. 4	Guest speaker
Conclusion and Final Assignment		
14	Thurs. Dec. 6	Course review; final “office hour” in-class
[no class]	Thurs. Dec. 13	Final Assignment Due

X. Course Outline

Unit 1: Patents and Innovation Value

Session 1: How patents contribute to business: theory and examples

Readings:

Resources as Dual Sources of Advantage: Implications for Valuing Entrepreneurial-Firm Patents, David Hsu and Rosemarie Ziedonis, in *Strategic Management Journal* 34: 761–781 (2013)

Theoretical Perspectives on Patent Strategy. Deepak Somaya (Aug. 2002), **section 3 only (pp. 8-15)**

https://www.academia.edu/2486580/Theoretical_Perspective_on_Patent_Strategy?auto=download

The Apple-Samsung Case: What It Means for Patents — and Innovation, Knowledge@Wharton online article:

<http://knowledge.wharton.upenn.edu/article/the-apple-samsung-case-what-it-means-for-patents-and-innovation/>

How Patents Help Internet Companies – Friendster & Facebook [Case Study], online article (May 18 2012)

<https://yourstory.com/2012/05/how-patents-help-internet-companies-friendster-facebookcase-study/>

Study Question: How do patent “isolation” and “signaling” add value in practice, for innovative companies – both large and small? Consider e.g. the smartphone industry; the social media industry.

Class: Introductory lecture on theory and goals of the patent system, with illustrations of actual impact for innovative technology businesses.

Session 2: Value propositions and patent protection

Readings:

Useful Value Proposition Examples (and How to Create a Good One), Peep Laja, online article:

<http://conversionxl.com/value-proposition-examples-how-to-create/>

Strategic Patenting: Why So Few Patents Create Real Value, Jackie Hutter, on *IP Asset Maximizer Blog* (January 2014) – read all 5-parts, beginning with part 1 at:

<http://ipassetmaximizerblog.com/strategic-patenting-part-1-why-so-few-patents-create-business-value/>

(optional) *It's as Simple as NABC, How Liz Got Her Big Job*. from *Innovation: The Five Disciplines for Creating What Customers Want* (Chapter 5), Curtis Carlson and William Wilmot, published by Crown Business (August 8, 2006)

Study Question: Relationship between value propositions, key differentiators and patent protection.

Class: Lecture on the relationship between patents, value propositions and key differentiators. Detailed examples will be discussed from several different industries.

Session 3: Critiquing and sharpening patent claims from a business perspective

Study Question: What makes a patent claim valuable for business purposes? What criteria can you use to critique a particular patent's value for a given business?

Class: Lecture and interactive practice critiquing actual patent claims for notable innovations in several fields.

Session 4: Guest speaker – patents and innovation value

Class: An invited guest speaker from industry will share relevant experience

Session 5: Assignment #1 – presentations

Assignment #1 is due before the beginning of this class.

Class: Several pre-assigned teams will present their critical assessment for one of the assigned patents, followed by brief, interactive class critique.

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Unit 2: Patent Leverage and the Corporate Playbook

Session 6: Defensive strategies – freedom to operate

Readings:

Don't Fence Me In: Fragmented Markets for Technology and the Patent Acquisition Strategies of Firms.

Rosemarie H. Ziedonis, in *Management Science*, Vol. 50, No. 6, pp. 804–820 (June 2004)

Innovation in Multi-Invention Contexts: Mapping Solutions to Technological and Intellectual Property Complexity.

Somaya, D., Teece, D., and Wakeman, S., *California Management Review*, 53(4), pp. 47-79 (2011)

Google Did Not Make a Mistake with Motorola Mobility, Conversant IP website post (February 6, 2014):

<http://www.conversantip.com/blog/google-did-not-make-a-mistake-with-motorola-mobility/>

Facebook Buys AOL Patents from Microsoft for \$550 Million, Wall St. Journal (April 23, 2012)

(optional) *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting Innovation.* Carl Shapiro, Chapter 4 from *Innovation Policy and the Economy – Volume 1*, MIT Press (January 2001), available online at: <http://www.nber.org/chapters/c10778>

Study Question: What are benefits and pitfalls of cross-licensing as a response to patent thickets?

Class: Lecture on the patent “hold-up” problem, patent thickets/minefields, and a close look at the corporate playbook of defensive strategies for securing freedom-to-operate.

Session 7: Asymmetric patent warfare

Readings:

From Arms Race to Marketplace: The New Complex Patent Ecosystem and Its Implications for the Patent System.

Colleen V. Chien in *Hastings Law Journal*, Vol. 62, pp. 297-356 (December 2010)

Patent Strategies of Technology Startups: An Empirical Study. Paper by Celia Lerman, May 25, 2015.

<https://papers.ssrn.com/abstract=2610433>

LOT Network

<https://lotnet.com/>, <https://lotnet.com/how-lot-works/>

(optional) *Patents, Thickets and the Financing of Early-Stage Firms: Evidence from the Software Industry.* Iain M. Cockburn and Megan MacGarvie, NBER Working Paper No. 13644 (November 2007)

(optional) *Comments of Google, Blackberry, Earthlink and Red Hat to the Federal Trade Commission and U.S. Department of Justice on Patent Assertion Entities* (April 5, 2013)

<https://docs.google.com/file/d/OBwxyRPFduTN2VTE4TXINcW9MR2s/edit>

Study Question: How do start-ups navigate patent thickets? Is patent strategy mainly about freedom to operate, differentiation, or something else?

Class: Lecture on how patent leverage works in the context of *asymmetric exposure*. Implications for start-ups, non-practicing entities, and mature companies.

Session 8: Guest speaker – patent leverage and the corporate playbook

Class: An invited guest speaker from industry will share relevant experience

Session 9: Assignment #2 – presentations

Assignment #2 is due before the beginning of this class.

Class: Several pre-assigned teams present their proposed strategy, followed by brief, interactive class critique.

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Unit 3: Limits and Alternatives to Patents

Session 10: Limits: *Alice* and “Abstractness”

Readings:

Patently Absurd, James Gleick, New York Times Magazine (March 12, 2000)

<http://www.nytimes.com/2000/03/12/magazine/patently-absurd.html>

Alice Corp. v. CLS Bank International, 134 S. Ct. 2347 (2014)

https://www.supremecourt.gov/opinions/13pdf/13-298_7lh8.pdf

USPTO *Abstract Idea Examples* (issued January 27, 2015) (examples nos. 2 and 8)

https://www.uspto.gov/sites/default/files/documents/abstract_idea_examples.pdf

How to Patent Software in a Post Alice Era, IP Watchdog online blog (November 17, 2016)

<http://www.ipwatchdog.com/2016/11/17/patent-software-post-alice/>

Study Question: What problems were recent changes in US patent law seeking to address? Were the changes actually well-tailored for those problems?

Class: Lecture on the recent dramatic shift in US law on what is eligible for patenting. We will review positive and negative examples, and look at the latest trends for software patents along with practical guidance.

Session 11: Alternative Forms of IP Protection for the Tech Enterprise

Readings:

The Half-Truth of First-Mover Advantage, Fernando Suarez and Gianvito Lanzolla, Harvard Business Review (April 2005)

Why being first doesn't matter, blog post on intercom.com website:

<https://blog.intercom.com/why-being-first-doesnt-matter/>

Network Effects Aren't Enough, Andrei Hagiu and Simon Rothman, Harvard Business Review (April 2016)

How Strong Are Network Effects Online, REALLY? Business Insider (May 19, 2011) at:

<http://www.businessinsider.com/network-effects-2011-5>

Network Effects. Andreesen Horowitz slide presentation at:

<http://www.slideshare.net/a16z/network-effects-59206938>

See especially this slide and surrounding slides:

http://www.slideshare.net/a16z/network-effects-59206938/82-MAX_LEVCHINThe_defensibility_of_these

Study Questions: What IP strategy can be used to effectively protect AI innovations – especially after *Alice*? Is there synergy between IP and “first-mover advantage” that will help garner sustainable competitive advantage?

Class: Lecture on alternatives to patent protection. We will examine so-called “first-mover advantage” and several different-but-related concepts (stickiness, virality, network effects), and consider to what extent they can provide sustainable competitive protection. We also consider implications of the data revolution in this context.

Session 12: Assignment #3 – Presentations

Assignment #3 is due before the beginning of this class.

Class: Several pre-assigned teams will present their proposed strategy and recommendations, followed by brief, interactive class critique.

Session 13: Guest speaker – limits and alternatives to patents

Class: An invited guest speaker from industry will share relevant experience

Conclusion and Final Assignment

Session 14: Course review and wrap-up

Class: This final session will serve as an overall course review, and an opportunity for office-hour style questions, in preparation for the final written assignment.

Final Assignment

The Final Assignment is due by noon on Thursday December 13.