The Wharton School, University of Pennsylvania
MGMT 729/229:
Intellectual Property Strategy for the Innovation-Driven Enterprise
Spring 2021, Q3 Elective
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I. Instructor

Steven Weiner is Senior Director of Innovation & Technology for Penn Engineering, and a part-time lecturer in Wharton's Management Department. Previously, Mr. Weiner led the Corporate Intellectual Property practice at the law firm of Davis Polk, and held several executive positions in the tech industry. He earned 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 about strategic business 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 learn how to analyze the scope of protection provided by patents, and we examine closely how and when that form of protection translates to competitive advantage and business value. We practice applying these concepts and skills to shape and critique 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. We will review the impact from a business perspective, and we discuss alternatives for adapting IP strategy appropriately in light of these sea changes and in view of the big data revolution.

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 written assignments and a live presentation, in which students will be challenged to apply the core lessons of the course. The presentations will typically be done by small teams, near the end of the course.

Assignment #1: Critique a patent. Students will be given key excerpts from an actual U.S. patent with related background information about associated products, technology, and/or companies. The assignment will pose questions that require students to critique the patent in light of the background information provided and the principles we learn in Unit 1 of this class. Answers and reasoning must be submitted in writing (1-2 pages).

Assignment #2: **Select and justify a transactional IP strategy**. Students will be given information 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; to critique alternatives; and to defend their choice in view of the principles we learn in Unit 2. Answers and reasoning must be submitted in writing (1-2 pages).

Live Presentation: Create and deliver an IP strategy pitch to management. Students will be divided into small teams of roughly 3 students each. Each team will develop and present an IP protection strategy for an assigned invention, based on background information that will be provided, by applying the principles learned in this course. Inventions are drawn from a variety of industries. Students who are developing their own entrepreneurial projects may be allowed to present on those technologies, with the instructor's permission. Each team will present its proposal in class on an assigned date near the end of the term, styled as a pitch to internal company management. Team presentations with accompanying slides should each be 12-15 minutes and will be followed by 5 minutes of Q&A with the class and (possibly) special-guest panelists.

Final Assignment: An expanded written 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. Answers and reasoning must be submitted in writing (3-4 pages).

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

V. Grading

- Regular assignments: 40% total (20% each)
- Live presentation: 20%
- Final assignment: 25%
- Active class participation: 15%

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

- [**Spring 2021 only**] Classes will be held live **online**, at the regularly scheduled class times
- 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
- Any requests for excused absence, or for any other exceptions to class rules, requirements and deadlines, must be submitted to the instructor in writing by email

VIII. [Virtual] Office Hours

Consultation with the instructor via phone call or virtual meeting regarding course-related issues can be scheduled upon request, subject to availability.

We will also offer several opportunities to get together virtually in small groups. Interested students will be able to sign up on Canvas.

IX. Course Schedule

Session	Date	Topic
Unit 1: Patents and Innovation Value		
1	Thurs. Jan. 21	How patents contribute to business: theory & examples
2	Tues. Jan. 26	Value propositions and patent protection
3	Thurs. Jan. 28	Evaluating patent claims from a business perspective
4	Tues. Feb. 2	Guest speaker
Unit 2: Patent Leverage and the Corporate Playbook		
5	Thurs. Feb. 4	Defensive strategies: freedom to operate; **Assignment #1 Due**
6	Tues. Feb. 9	Asymmetric patent warfare
7	Thurs. Feb. 11	Guest speaker
Unit 3: Limits and Alternatives to Patents		
8	Tues. Feb. 16	Limits: *Alice* and "Abstractness"; **Assignment #2 Due**
9	Thurs. Feb. 18	Alternatives to patents; Big Data revolution
Student Presentations and Final Assignment		
10	Tues. Feb. 23	**Student Presentations**
11	Thurs. Feb. 25	**Student Presentations**
12	Tues. Mar. 2	**Student Presentations**
13	Thurs. Mar. 4	Guest speaker
[no class]	**Tues. Mar. 9**	**Final Assignment Due**

X. Course Outline

Unit 1: Patents and Innovation Value

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

Readings:

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

Strategic Patenting: Why So Few Patents Create Real Value, Jackie Hutter, on *IP Asset Maximizer Blog* (Jan. 2014):
http://ipassetmaximizerblog.com/strategic-patenting-part-1-why-so-few-patents-create-business-value/

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/

(**optional**) *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)

Study Question: How does patent "isolation" translate into actual value for innovative companies? Consider both mature players and new ventures; and various industries, e.g. smartphones, social media.

Class: Lecture on theory and goals of the patent system, with illustrations of different ways in which patents can create significant impact for an innovative technology business.

Session 2: Value propositions and patent protection

Readings:

Strategic Patenting 4: A Case Study of Success, Jackie Hutter, on *IP Asset Maximizer Blog* (Aug. 2014):
http://ipassetmaximizerblog.com/strategic-patenting-4-case-study-success/

Peloton Sues Flywheel in What Could Be the Ultimate High-Tech Fitness Fight, Fast Company (Sep. 13, 2018):
https://www.fastcompany.com/90236687/peloton-sues-flywheel-in-what-could-be-the-ultimate-high-tech-fitness-fight

(**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: Which aspects of a product or technology are the most valuable to patent? What criteria should shape your patent strategy?

Class: Lecture on the relationship between patents and value propositions; reading and critiquing patent claims from a business perspective. Detailed illustrations will be discussed from several different industries.

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

Class: Lecture and 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

Assignment #1 is due before the beginning of the next session (session 5).

Unit 2: Patent Leverage and the Corporate Playbook

Session 5: 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 6: 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/0BwxyRPFduTN2VTE4TXlNcW9MR2s/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 7: Guest speaker – patent leverage and the corporate playbook

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

Assignment #2 is due before the beginning of the next session (session 8).

Unit 3: Limits and Alternatives to Patents

Session 8: 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

USPTO Subject Matter Eligibility Examples: Abstract Ideas (January 2019 update)
https://www.uspto.gov/sites/default/files/documents/101_examples_37to42_20190107.pdf

(optional) USPTO 2019 Revised Patent Subject Matter Eligibility Guidance
https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf

America's Innovators Need Clear Patent Laws, WSJ Opinion (January 23, 2020)
https://www.wsj.com/amp/articles/americas-innovators-need-clear-patent-laws-11579824646

Study Question: What problems were recent changes in US patent law seeking to address – and do the changes actually address those problems? What are the implications for innovative businesses?

Class: Lecture on the recent dramatic shift in US law on what is eligible for patenting. We examine positive and negative examples, and consider practical guidance for software innovation, especially AI.

Session 9: Alternative Forms of IP Protection for the Tech Enterprise

Readings:

The Half-Truth of First-Mover Advantage, F. Suarez and G. 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 can 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.

Sessions 10-12: Classroom Presentations

These sessions will be devoted to **live presentations by student teams**. Each team presents and defends a proposed strategy for its pre-assigned IP strategy challenge, followed by interactive class discussion.

Session 13: Guest speaker (or course review)

Class: We will either feature a guest speaker from industry or offer an in-class office hour.

The Final Assignment is due by noon 12:00pm on Tuesday March 9.