The Wharton School, University of Pennsylvania
MGMT/LGST 729X: Intellectual Property Strategy for the Innovation-Driven Enterprise
Fall 2017, Q2-Elective
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I. Instructor

Steven Weiner is a part-time lecturer in Wharton's Management Department. He also serves as Deputy General Counsel and Chief Patent Officer of SRI International – an independent, nonprofit, world-leading R&D institute headquartered in Silicon Valley. Steven was previously a partner with Davis Polk, leading that firm's Corporate Intellectual Property practice and providing IP advice to clients in connection with major corporate transactions and decisions. Steven holds degrees from Harvard Law School, MIT and the University of Pennsylvania, and has over 25 years of 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 even drive, major corporate decisions including M&A, venture funding and exits, and entry into new markets? In this course, students will learn principles and techniques that empower them to critically analyze and answer these questions, and to leverage that insight in their future roles as innovation industry executives, entrepreneurs, strategists and investors. To achieve this goal, the course includes three units:

- In Unit 1, ***Patents and Innovation Value*****,** we examine closely the relationship between competitive advantage, value proposition, and intellectual property (particularly patents) – in theory and in practice. We will learn to apply our understanding of that relationship to critique and to sharpen the patent claims that protect a company's most important innovations.
- In Unit 2, ***Patent Leverage and the Corporate Playbook***, we study theory and real-world examples of how patent leverage can strategically inform corporate transactions and decisions. We will analyze the advantages and pitfalls of various intellectual property strategies, for established companies as well as for start-ups.
- In Unit 3, ***Limits and Alternatives to Patents***, we confront the recent legal trend toward reigning in the power of patents, particularly for software innovations. We will review the impact from a business perspective, and we will discuss alternatives for adapting intellectual property strategy appropriately in light of these changes.

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: Due at the beginning of session #5, Thursday Nov. 2. Students will be given an actual U.S. patent with explanatory notes, and information about the associated company and product. Students will perform additional research to learn about market competition and prior art; and will then critique the patent in light of the information provided, their research findings, and the principles that we learn in Unit 1 of this class. Findings and conclusions should be presented in a written 3-4 page report. Several teams will be assigned to present orally in class (10-15 minutes), and should prepare suitable slides.

Assignment #2: Due at the beginning of session #9, Thursday Nov. 16. Students will be given an information packet describing a competitive technology market, including the relevant patent landscape. The packets may flag additional, pertinent questions that students will need to research. Several possible, alternative patent strategy options will be outlined in the packet. Students will be asked to select and refine an effective patent strategy – or combination of strategies – from the perspective of one or two specified industry members, and to defend their choices in light of the principles we learn in Unit 2. Findings and conclusions should be presented in a 3-4 page report. Several teams will be assigned to present in class (10-15 minutes) and should prepare suitable slides.

Assignment #3: Due before the beginning of session #13, Tuesday Dec. 5. Students will be given information for a new technology (actual or fictional) in a "business method" adjacent space. Students must research the relevant competition, propose and defend an intellectual property strategy including both patent and non-patent alternative elements, in light of the principles studied in Unit 3. Findings and conclusions should be presented in a 3-4 page report. Several teams will be assigned to present in class (10-15 minutes) and should prepare suitable slides.

Final Assignment: Due at the beginning of our final session, Tuesday Dec. 19. 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. As input, students will be given packets containing: a selected, annotated patent application for an emerging tech company, related company/product information, and relevant patent landscape information. Each student will be asked to:

(1) Analyze the material, identify key differentiators, conduct independent competitive research, and critique the patent claims accordingly. Propose and defend an improved patent strategy. Also address: what non-patent IP protections are advantageous for this company?

(2) Now adopt the perspective of an established industry company (identified in the packet). Select and defend a patent strategy for the established company, including assessment of the emerging company as a potential M&A or investment target, in light of the patent landscape information and your other findings. What strategy do you recommend?

Several teams will be assigned to present in class (~ 15 minutes) and should prepare suitable slides.

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.

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 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 participation is essential to the learning goals in this course.
- Bring and display your name card at each class
- Restrictions on phones, laptops and other electronic devices:
  - 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.
  - Phones 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.
  - Use of laptops and tablets is not allowed except for lecture note-taking, reference to the assigned class readings, or as otherwise specifically permitted by the instructor
  - 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

Office hours will be offered for one hour (1:30pm-2:30pm) each Thursday shortly after class; except that instead of Thursday Nov. 30, the office hour that week will be held on Tuesday Nov. 28.

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. 19	How patents contribute to business: theory & examples
2	Tues. Oct. 24	Value propositions and patent protection
3	Thurs. Oct. 26	Evaluating patent claims from a business perspective
4	Tues. Oct. 31	{Guest speaker} + Unit 1 wrap-up
5	Thurs. Nov. 2	**Assignment #1 Due; In-Class Presentations**
Unit 2: Patent Leverage and the Corporate Playbook		
6	Tues. Nov. 7	Defensive strategies: freedom to operate
7	Thurs. Nov. 9	Offensive strategies: asymmetric warfare
8	Tues. Nov. 14	{Guest speaker} + Unit 2 wrap-up
9	Thurs. Nov. 16	**Assignment #2 Due; In-Class Presentations**
Unit 3: Limits and Alternatives to Patents		
10	Tues. Nov. 21	Limits: *Alice* and "Abstractness"
11	Tues. Nov. 28	Alternatives to patents; Big Data revolution
12	Thurs. Nov. 30	{Guest speaker} + Unit 3 wrap-up
13	Tues. Dec. 5	**Assignment #3 Due; In-Class Presentations**
Conclusion and Final Assignment		
14	Thurs. Dec. 7	Course review; final "office hour" in-class
15	Tues. Dec. 19	**Final Assignment Due; In-Class Presentations**

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 (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/

Innovation: The Five Disciplines for Creating What Customers Want, Chapter 5: *It's as Simple as NABC*, Curtis R. Carlson and William W. Wilmot, published by Crown Business (August 8, 2006), available from Amazon at:
https://www.amazon.com/Innovation-Five-Disciplines-Creating-Customers-ebook/dp/B000JMKN9C/

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/

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

Class: Lecture on value propositions and key differentiators, and their relationship to patent value. Theory and practice with detailed, real-world example.

Session 3: Evaluating patent claims from a business perspective

Study Question: What makes a patent claim "valuable" from a business perspective? What criteria can you use to critique a particular patent's value for your business?

Class: Lecture and interactive exercises on critiquing patent claims against value propositions, using several detailed, real-world examples.

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.

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)

(**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

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): http://www.wsj.com/articles/SB10001424052702303592404577361923087607762

Study Question: What are the pitfalls in cross-licensing as a response to patent thickets? Did Google's acquisition of Motorola Mobility exemplify Ziedonis' thesis?

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

Session 7: Offensive strategies – asymmetric 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

(**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)

Comments of Google, Blackberry, Earthlink & 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: Is patent strategy mainly about freedom to operate, or differentiation? Are patent thickets a deterrent or incentive for high-tech innovation? How do start-ups navigate thickets?

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.

Unit 3: Limits and Alternatives to Patents

Session 10: Limits: *Alice* and "Abstractness"

Readings:

Alice Corp. v. CLS Bank International, 134 S. Ct. 2347 (2014)
https://www.supremecourt.gov/opinions/13pdf/13-298_7lh8.pdf

OpenTV, Inc. v. Netflix Inc., 76 F. Supp. 3d 886 (ND Cal. 2014)
https://scholar.google.com/scholar_case?case=13306593288529322623

USPTO July 2015 Update on Subject Matter Eligibility
https://www.uspto.gov/sites/default/files/documents/ieg-july-2015-update.pdf

IP Market Updates – Tangible IP, online blog (June 19, 2017)
http://mailchi.mp/tangibleip/5ew50g6u1b-2909757

What Are My Patents Worth? Tech Crunch online article (January 27, 2016)
https://techcrunch.com/2016/01/27/what-are-my-patents-worth-trends-to-watch-for-in-2016/

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: Think about types of software innovation that are prominent in business today. In what ways can U.S. patents still be used to protect such innovations? What about medical devices, other industries?

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 statistics and trends for software patents along with practical advice being offered by expert practitioners.

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 Horowtiz 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 Question: Under what conditions – market, business model, technology – can a first-mover garner sustainable competitive advantage even absent patent protection?

Class: Lecture assessing several possible alternatives to patents for the tech enterprise. We will examine so-called "first-mover advantage" and a number of different-but-related concepts (stickiness, virality, network effects), and consider to what extent they can provide sustainable competitive protection for an innovative tech enterprise. We also consider implications of the data revolution in this context.

Session 12: Guest speaker – limits and alternatives to patents

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

Session 13: 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.

Conclusion and Final Assignment

Session 14: Course review and wrap-up

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

Session 15: Final Assignment – Presentations

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

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