



A SUMMARY OF ESTABLISHED & EMERGING IP BUSINESS MODELS

*Raymond Millien
PCT Capital LLC
McLean, VA*

*Ron Laurie
Inflexion Point Strategy LLC
Palo Alto, CA*



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**Raymond Millien
PCT Capital, LLC
McLean, Virginia
www.pctcapital.com**

**Ron Laurie
Inflexion Point Strategy, LLC
Palo Alto, California
www.ip-strategy.com**

I. Introduction

The last couple of years has brought about rapid and dramatic changes in patent law. The impetus for this change has come not only from the usual sources – the U.S. Court of Appeals for the Federal Circuit and the U.S. Patent and Trademark Office, but also as a result of an unprecedented combination of increasing attention on patent cases by the U.S. Supreme Court and patent reform debate in Congress. Against the backdrop of this new patent environment, this paper discusses the various existing and emerging business models within the evolving intellectual property (IP) marketplace.

II. What Are The Different IP Business Models?

A. The Evolving IP Marketplace

In the last thirty years, there has been a shift from a labor-driven economy to a knowledge-based economy. Illustrative of this fact is that, for the first time since the industrial revolution, the percentage of American workers employed in manufacturing has fallen below 10% and may be as little as 5%.¹ Consequently, intangible assets produced by a more highly-skilled and services-oriented workforce have emerged as the most powerful asset class, overtaking traditional capital assets such as real property, plant and equipment. Independent research has demonstrated that nearly 80% of the value of a U.S. publicly-traded company now comes from intangible assets.² This is an inversion from 30 years ago when only 20% of a company's value came from intangible assets, and is significant because the largest component (or subset) of intangibles is intellectual property. Further, data showing that small businesses generate 13-14 more patents per employee than large firms³ would empirically suggest that this 80% figure applies, if not more so, to smaller (and private) companies as well.

The identification of this “80/20 inversion” is not new. Alan Greenspan recognized, in 2003, that: “In recent decades . . . the fraction of the total output of our economy that is essentially conceptual rather than physical has been rising. This trend has, of necessity, shifted the emphasis in asset valuation from physical property to intellectual property and to the legal rights that inhere in the latter.”⁴ In fact, one scholar noted as far back as 1992 that “IP rights – especially those in the form of patents – will represent the most significant form of wealth in the new millennium.”⁵

We are no longer in the era when “feudal lords” (*i.e.*, a small handful of large “old economy” companies) controlled all the (intellectual) property and those who were without property had no rights. In those times, the legal landscape defining the rights associated with IP did not exist and those without (intellectual) property had virtually no say in the licensing and enforcement of such rights. The IP marketplace has matured (and continues to do so) and in 2006, IP-related damage awards and settlements in the U.S. totaled \$3.4B⁶ and global IP licensing revenue approached \$90B as early as 2003.⁷

B. Established IP Business Models⁸

Given that IP feudal lords no longer rule, one can say that we are now in an era of “IP for the masses,” where the IP marketplace operates according to the Golden Rule -- those with the gold (*i.e.*, IP rights) can now make the rules.

Necessarily, the evolving IP marketplace has been accompanied by a change in the players within the marketplace. Traditionally, in the “feudal lords” period, such players were overwhelmingly patent lawyers and large patent owners (with a few smaller or individual players making the occasional appearance and splash). Today, however, the cast of players has grown. That is, this new era is characterized by the rise of “market-maker” intermediaries who seek to make IP a liquid asset class and, of course, profit from it.

Who are these new players? Well, these new players are generally referred to as “IP intermediaries” because they are neither the IP creators nor the IP “consumers,” e.g. licensees and purchasers. These intermediary business models, however, attempt to perform one or more services or offer one or more products that connect the IP creators and the IP consumers. More specifically, these IP business models include:

<u>Model</u>	<u>Description</u>	<u>Exemplary Players⁹</u>
Patent Licensing and Enforcement Companies (PLECs)	These are entities that own one or more patent portfolios, attempt to license them through targeted letter-writing campaigns, and then file patent infringement suits against those letter recipients who refuse to enter into non-exclusive licenses. Those that practice this business model are often called (rightly or wrongly) “patent trolls.” ¹⁰ In some cases, the PLECs have purchased the patents they are asserting and, in other cases, the PLEC entity is actually founded by the inventor(s) of the asserted patent portfolio. (Although in the latter case, such entities are not technically “intermediaries.” PLECs therefore generate revenue both from license fees and from the annual \$3.4B IP awards and settlements market.	Acacia Research Lemelson Foundation LPL
Institutional Patent Aggregators/IP Acquisition Funds	These are entities that operate in a sort of private equity fashion. That is, they typically operate as general partners of a limited partnership and raise money either from large technology companies or from the capital markets (institutional investors (and sometimes high-net-worth individuals). The investors are promised above average ROI from selective, targeted or large-scale patent purchases with the goal of instituting licensing programs and/or employing various arbitrage strategies.	Coller IP Capital Intellectual Ventures
IP/Technology Development Companies	These are entities that engage in R&D activities and produce IP (including both patents and know-how) much like traditional operating companies; however, the developed technology is not used to manufacture products in the form of physical goods. Rather, the IP associated with the technology is licensed by these entities to one or more operating companies so that the operating company may bring products and services employing the technology and IP to the marketplace. Often the IP creator provides consulting services to the licensee to integrate the technology into the licensee’s products or processes. Thus, these firms are not true intermediaries between patent owner and patent licensee. They are intermediaries, however, in the sense that they form a link between the creator of the patented technology and those who commercially deploy it in the form of products	AmberWave InterDigital MOSAID Qualcomm Rambus Tessera

<u>Model</u>	<u>Description</u>	<u>Exemplary Players⁹</u>
Licensing Agents	<p>and services .</p> <p>These are entities that function as intermediaries by attempting to assist patent owners in finding licensees. Entities that function under this business model often call themselves “IP advisory,” “IP management” or “technology transfer” firms. While the amount, quality and depth of services vary, to some degree in shape or form, they all earn retainer and/or success fees by assisting patent owners find licensees. Accordingly, these entities may function more like traditional consultants where the patent owner stays very involved in the licensing process, or they may function more like IT companies where the patent owner essentially “outsources” patent monetization and is not involved in day-to-day licensing operations, but still collects a majority of any licensing revenue. The various licensing agents also differ as to whether they engage in “carrot” licensing or “stick” licensing activities. In the latter case, these entities tend to engage in activities that start to closely resemble the PLEC business model.</p>	<p>General Patent Corp. IPValue ThinkFire</p>
Litigation Finance/Investment Firms	<p>These are entities that are a cross between IP Acquisition Funds and PLECs. That is, like IP Acquisition Funds, they operate as general partners of a limited partnership and raise money from large institutional investors and high-net-worth individuals. Like PLECs, however, their stated goal is to acquire a financial interest in patent portfolios for assertion. The assertions typically take the form of targeted letter-writing campaigns, followed by patent infringement suits against those letter recipients who refuse to enter into non-exclusive licenses. Variances in the model (and from a PLEC) include the level and nature of ownership (equity vs. debt) that the firm takes in the patent portfolios being asserted or in the patent owning entity itself (typically an LLC formed for the purpose of assertion)..</p>	<p>Altitude Capital Rembrandt IP Mgmt.</p>
Patent Brokers	<p>These are entities that function essentially the same as Licensing Agent model discussed above. The key distinction, however, is that they seek to assist patent owners in finding buyers rather than</p>	<p>Iceberg Inflexion Point iPotential Ocean Tomo</p>

<u>Model</u>	<u>Description</u>	<u>Exemplary Players⁹</u>
IP-Based M&A Advisory	<p>licensees. Also, unlike licensing agents they operate both on the sell-side and the buy-side. In the latter case they often assist technology companies in acquiring patents having “strategic” (i.e., defensive) value vis-à-vis their competitors. Thus, a typical engagement between a Patent Brokerage firm and a patent owner is shorter than a Licensing Agent firm. This is because once the patent or portfolio is sold, the Broker takes a percentage of the sale as a success fee and the engagement is done. (It is a “one hit and done” engagement.) Thus, there is no opportunity for recurring revenue. In contrast, buy-side brokerage engagements can continue indefinitely as the broker’s client strengthens and extends its patent position over time. Entities that function under this business model also often call themselves “IP advisory,” “IP management” “IP merchant banking” or “technology transfer” firms. While the amount, quality and depth of services vary, in some shape or form, however, when representing a seller, they all prepare a “pitch package,” identify potential buyers and earn retainer and/or success fees by actually assisting patent owners in executing patent sale agreements with buyers. These entities may function more like traditional consultants where the patent owner stays very involved in the process, or they may function more like IT companies when the patent owner essentially “outsources” the monetization of the patent(s) and is not involved in the day-to-day sale efforts, but still collects a majority of the sale revenue (minus the Broker’s commission and, in some cases, the Broker’s expenses). In contrast, buy-side, brokerage engagements almost always involve a close working relationship between buyer and broker.</p> <p>These are entities that operate in a traditional investment banking model – advising technology companies in their merger and acquisition (M&A) activities and earning fees based on the value of the entire deal (or apportioned according to the value of the IP within the deal). Whether doing “sell side” or “buy side” engagements, these entities obviously focus on the IP assets within contemplated corporate transactions where IP is driving, or a major component of, the</p>	<p>Pluritas ThinkFire</p> <p>Analytic Capital Blueprint Ventures Inflexion Point Pluritas</p>

<u>Model</u>	<u>Description</u>	<u>Exemplary Players⁹</u>
IP Auction Houses	<p>transaction. Services provided by such entities include, IP due diligence, consultation on the integration of IP assets and operations as a result of M&A activity and IP deal structuring and general consultations related to contemplated investments, mergers, acquisitions, divestitures, joint ventures and other corporate transactions. “Second generation” “IP investment banking” involves not just maximizing IP value in the context of a “traditional” corporate acquisition or divestiture but actually sourcing the transaction based, at least in part, on IP considerations. Here the IP investment banker helps to identify potential corporate acquisition targets or acquirors with complimentary IP assets .</p> <p>These are entities that are attempting to do for the patent marketplace what famed London auction houses Christie’s and Sotheby’s did for the antique and art marketplace. That is, these entities are auction houses that hold multi-lot, live auctions for patents with the intent of providing a marketplace for facilitating the exchange of such historically illiquid assets. While there are various auction formats and structures (English, Dutch, <i>etc.</i>), such auctions enable sellers to offer one or more patents according to a pre-determined set of terms and conditions and allows the auction house to charge listing fees, attendance fees, buyers’ premiums and/or sellers’ commissions. Also, other entities aim to be the “eBay of patents” by offering online patent auctioning services.</p>	<p>IPAuctions.com IPA GmbH Ocean Tomo</p>
On-Line IP/Technology Exchanges/Clearinghouses	<p>These are entities that function like the business-to-business (B2B) web sites that became the rage during the late 1990’s dot com boom. These entities, however, offer web platforms and interfaces specialized for patent and other IP assets. Essentially, this model can be thought of as online classifieds like Craig’s List, but for IP. (Using the analogy of an online version of the Licensing Agent or Patent Broker IP business model would also be appropriate.) Within the model, there are variances such as whether listing fees are charged to patent owner/sellers in addition to, or versus, back-end fees for successful patent sale or licensing transactions.</p>	<p>The Dean’s List Tynax Yet2.com</p>

<u>Model</u>	<u>Description</u>	<u>Exemplary Players⁹</u>
IP-Backed Financiers	<p>Additional variances include whether these sites are public and browseable for free, or whether they are private, “member’s only” sites that require registration (and presumably a registration/membership fee).</p> <p>These are entities that provide financing for IP owners, either directly or as intermediaries, usually in the form of loans (debt financing), where the security for the loan is either wholly or partially IP assets (<i>i.e.</i>, IP collateralization). Thus, these parties often function as intermediaries between borrowers and commercial lending institutions, such as banks. Unlike traditional bankers who focus on accounts receivable and tangible assets, however, these IP-backed Financiers take into account a borrower’s or target company’s (potential or actual) IP assets in structuring a financing transaction. Variances in this model include entities who deploy their own capital (and thus resemble IP investment firms) or who maintain a network of technology- or industry-specific investors to whom they refer IP owners (and thus resemble patent brokers).</p>	IPEG Consultancy BV Paradox Capital
Royalty Stream Securitization Firms	<p>These are entities that counsel, assist and/or provide capital to patent owners performing IP securitization financing transactions (which resemble the more common mortgage-backed securities). In such transactions, the patent owner sells the patents underlying the transaction to a bankruptcy remote entity (a “BRE”), and the BRE grants a license back to the patents to the original patent owner. The BRE in turn issues notes (<i>i.e.</i>, IP-backed securities) to investors to raise cash to pay the original patent owner the agreed-upon purchase price. The notes are then backed by the expected future royalties to be earned from licensing the underlying patents (to the original patent owner and/or third parties). At the end of the transaction, the original patent owner has essentially raised funds much more cheaply than a loan backed by its traditional assets. Thus, the IP-backed notes will generally be higher rated commercial paper reflecting the quality of the patents and not necessarily the overall creditworthiness of the original patent owner.¹¹</p>	alsoT IP UCC Capital

<u>Model</u>	<u>Description</u>	<u>Exemplary Players⁹</u>
Patent Rating Software and Services	These are entities that provide advanced patent search and analytics software tools that allow patent owners, attorneys, investors and other players in the IP marketplace to obtain various intelligence and data points about a single patent or patent portfolio. These software tools and platforms provide varied outputs related to patent “quality” such as validity probabilities, maintenance fee-related life expectancies, various infringement-related metrics, prior art analysis, “related” patent analysis, citation-related metrics, <i>etc.</i> These entities earn revenue from pure software sales, as well as consulting fees.	1790 Analytics The Patent Board PatentRatings Patent Café
University Technology Transfer Intermediaries	These are entities that function as IP Development Companies, IP Acquisition Funds, Licensing Agents and/or Patent Brokers, but focusing on the niche university technology transfer (<i>i.e.</i> , licensing) market. The choice to focus on the university market by such entities is not surprising given that in the 2005 fiscal year, U.S. universities and research institutes spent over \$42 billion in R&D, received over 3,278 U.S. patents and executed over 4000 licenses. ¹²	Texelerate UTEK

We now take a closer examination of one of these IP business models –the live patent auction house -- due to the press and industry attention they have received over the past year.

The Live Patent Auction House Business Model

No one will argue that intangibles, such as patents (and intellectual property in general), are highly illiquid assets. This presents a problem in that companies cannot quickly and easily convert a large portion of their assets to cash, and thus realize a return on their R&D expenditures. This illiquidity is a result of the absence of an efficient IP marketplace to exchange unused or underutilized IP rights. Traditionally, IP rights transactions have been private, irregular and expensive to consummate. Further, potential sellers of IP rights have historically been unable to access a large quantity of buyers who are willing to pay a predictable price under an agreed-upon set of conditions (*i.e.*, the conditions which exist for liquid assets such as stocks and bonds). In order to create a liquid IP marketplace, a strong process, transparency, and comparability of assets (*i.e.*, the ability to use a standard valuation process) is needed.

Given the foregoing, and recognizing that: (1) in order to extract maximum value from IP assets, there must be a marketplace which renders such assets more liquid; and (2) economic theory holds that an auction is a method for determining the value of a commodity that has an

undetermined price; it is not surprising that companies such as Ocean Tomo, LLC and IP Auctions GmbH decided to attempt live patent auctions.

Ocean Tomo struck first by holding a live patent auction on April 6, 2006 in San Francisco. Their goal was to establish evidence that an auction can create a viable market for the sale of historically illiquid patent assets. With this goal in mind, seventy-eight lots were offered, of which twenty-six were sold on the floor for approximately US\$3M. According to Ocean Tomo, the remaining lots were offered in post-auction, private trading. While this sales rate may seem low, of note is the fact that over 51% of the sellers who participated in the auction successfully transacted their patents.

Ocean Tomo then held a live IP auction in New York City on October 26, 2006. This auction included patents, trademarks, copyrights and domain names (although 73 of the 96 lots were “pure” patent lots). This time, on the floor sales totaled \$23,903,000. Sellers include AT&T Knowledge Ventures, Honeywell Intellectual Properties, Inc., The Boeing Company, Agere Systems, Inc., Motorola, Inc., BellSouth Intellectual Property Marketing Corporation, Eastman Chemical Company, Dow AgroSciences LLC, CREE, Inc., AIG, and IBM.

A third Ocean Tomo auction was held on April 19, 2007 in Chicago where cumulative lot prices, including buyers’ premium, was \$11,429,000. According to Ocean Tomo, a single patent sale of \$3.025M set a world’s record. Thirty-four of the 67 lots were sold on the floor for a 51% transaction success rate and 55% of the sellers who participated in the auction successfully transacted their patents. The average selling price per lot was \$336,148. Successful sellers included companies such as Eastman Kodak, Sun Microsystems, Inc., and Iomega Corporation as well as small to mid-size companies, professional inventors, and others.

Next, IP Auctions GmbH struck with the first European auction on May 15, 2007. Held in Munich, the auction included 80 lots of patents, licenses and brand rights from diverse technology sectors. The Munich event led to only \$675,000 in sales and a 30% transaction success rate. The highest bid of €50,000 (approx. \$67,046) was for a special surface coating relating to nano-technology. There were approximately 40 sellers, including major companies such as Bayer and Rolls-Royce.

On June 1, 2007, Ocean Tomo followed with its fourth auction overall and its first in Europe. Held in London, England, cumulative sales on the auction floor, including buyers’ premium, totaled €6,040,977 (approx. \$8,100,503) and average sale price per lot was €431,498 (approx. \$578,607). Again, according to Ocean Tomo, another world record was set when an Internet shopping patent sold for €3,650,873 (approx. \$4,895,550).

Not surprisingly, there were many vocal critics of these auctions. Targets of criticism included not only the auction process itself, but also the perceived low prices paid by the winning bidders. Traditionally, IP transactions are characterized by difficult acquirer identification, long periods of negotiations and endless due diligence activities – all contributing to high transaction costs (and thus, illiquidity). The auction process, however, has the potential to nullify these negative characteristics. This is because sellers of IP rights can know their IP will be publicized, and that on a certain date, and for a certain fixed listing fee, the transaction will presumably close.

Further, price discounts to buyers are always associated with illiquid markets (*e.g.*, the private equity market). This may account for the perceived low average winning bid at the auction.

One universally accepted positive result of the live patent auction model is that the public nature of the process allows for a comparable valuation methodology to be employed for later IP asset transactions. This will lead to a publicly-available data set of patent transaction values for market-approach valuation, much in the way publicly-available sale prices are now employed for other more-liquid assets such as real estate. That is, the emergence of a significant data set of comparable patent transactions will aid inventors, IP practitioners, companies and governmental agencies in pricing and valuing patents.

Whether the live patent auction model will thrive, succumb to an online format or eventually cease to be relevant as new IP business models come into existence remains to be seen.

C. Emerging Business Models

Having described the business models now existing in this new era of “IP for the masses,” we now turn to the newest players. More specifically, these IP business models include:

<u>Model</u>	<u>Description</u>	<u>Examples¹³</u>
IP Transaction Exchanges/Trading Platforms	In further attempts to make IP a more liquid asset class, plans have been announced to create traded exchanges (whether physical or online locations) similar to the NYSE and NASDAQ where yet-to-be-created IP-based financial instruments would be listed and traded much like stocks are today. Another variant involves an on-line trading platform where IP buyers and sellers can come together to execute transactions based on a set of agreed rules developed by a “best practices” steering committee composed of major corporate buyers and buyer-sellers.	IP Exchange Chicago Gathering 2.0
Defensive Patent Pools	These are emerging entities employing a model born in reaction to the established PLECs and Institutional Patent Aggregators/IP Acquisition Funds business models. That is, these entities seek to selectively acquire portfolios of patents for defensive reasons. Such pools are typically in one technology area or in one industry segment, and are inspired by a “let’s buy them before the trolls do” attitude. Thus, this model results in multiple operating companies -- who may have not previously cooperated, done business or even respected each other – joining financial and other resources to create a corporate entity to acquire “problematic” patents, and license them to anyone willing to share the financial burden	Open Invention Network

<u>Model</u>	<u>Description</u>	<u>Examples¹³</u>
Technology/IP Spinout Financing	<p>of acquisition of the patents and the overhead of administering the pool.</p> <p>This emerging business model is best described as being organized as a traditional venture capital (VC) or private equity firm, but specializing in spinning out promising non-core IP which has become “stranded” within larger technology companies, or creating joint ventures between large technology companies to commercialize the technology and monetize the associated IP. Thus, the revenue for this emerging business model is the same as a traditional VC or private equity firm – achieving a high ROI once a portfolio company is sold, goes through an IPO (or sometimes evolves into an IP licensing company).</p>	<p>Analytic Capital Blueprint Ventures New Venture Partners Inflexion Point</p>
Patent-Based Public Stock Indexes	<p>This emerging business model is the evolution of the established Patent Rating Software and Services IP business model described above. That is, once the entities offering these software tools and platforms realized that nearly 80% of the value of a U.S. publicly-traded company now comes from intangible assets, and that they possessed tools to measure the “quality” of arguably the largest part of those intangible assets, then it became clear that another potential source of revenue would be the creation of formalized stock indexes based on their existing software tools and platforms. Put in different terms, the Patent Rating Software and Services industry theorized that investing in stocks with valuable patents may allow investors to commit a meaningful and sustainable portion of their assets to IP and allow them to outperform other investment strategies. Thus, they sought out different algorithms to create baskets of stocks using the “quality” of a publicly-traded company’s patents as the primary selection factor. Revenue from such an emerging business model includes the sale of equity research and the licensing of such indexes to ETF, mutual fund and other investable financial instrument issuers.</p>	<p>Ocean Tomo Indexes, Patent Board WSJ Scorecard</p>

V. Conclusion

It is clear that the players, and their attitudes, that dominated the “feudal period” will no longer carry the day. The newly-established and emerging IP business models (and the players exercising such models) are not going away. That is, neither U.S. Supreme Court decisions such as *eBay*, nor any of the so-called “anti-patent troll” legislative proposals floating through Congress, will make such intermediary entities such as PLECs, IP outsourcing companies, licensing agents, merchant banks, exchange operators and the like go away. With as much as three-quarters of the value of publicly traded companies in America coming from intangible assets, and global IP licensing revenue now being measured in the hundreds of billions of dollars, there is simply too much economic justification for such entities to exist. In fact, new players implementing the IP business models described herein will come into existence. And, new IP business models will also come into existence. Why? Quite simply, the business of IP (*i.e.*, IP marketplace) itself is not immune to innovation!

In sum, the concepts and theories presented in this paper and the accompanying presentation are for introductory purposes only and meant to be thought provoking. They are not, however, intended to be an all-inclusive encyclopedia of existing and emerging IP business models or the IP marketplace as a whole.

IV. About The Authors

Raymond Millien is the CEO of PCT Capital, LLC, an intellectual property focused advisory and asset management firm. Previously, he was General Counsel of Ocean Tomo, LLC, where he is responsible for overseeing all legal and regulatory affairs, as well as assisting the firm's management with acquisitions and the structuring of joint ventures. Prior to that, he was VP and Group IP Counsel at American Express Company where his responsibilities included managing the company's global patent portfolio and leading brand and technology outward-licensing deals. His previous experience included practicing law in the Washington, DC offices of DLA Piper US LLP and Sterne, Kessler, Goldstein & Fox PLLC. He has coauthored two books, *Little Blues: How to Build a Culture of Intellectual Property within a Small Technology Company* (Euromoney/MIP, 2006), and *From Finals to the Firm: Top Ten Things New Law Firm Associates Should Know* (Matthew Bender, 2003). Prior to attending law school, he was a software design engineer with General Electric. Since 2000, Mr. Millien has been a national lecturer for the BAR/BRI® Patent Bar Review course, and he has served as an adjunct professor of legal writing and oral advocacy at the George Washington University Law School, and a professorial lecturer of IP Law at the George Washington University School of Engineering. He received a B.S. from Columbia University's School of Engineering and Applied Science, and a J.D. from The George Washington University Law School. He is admitted to the Illinois, New York, Virginia, District of Columbia, U.S. Court of Appeals for the Federal Circuit and U.S. Supreme Court bars, and is registered to practice before the U.S. Patent and Trademark Office.

Ron Laurie is Co-founder and Managing Director of Inflexion Point Strategy, LLC, an intellectual property investment bank based in Silicon Valley. Inflexion Point represents technology companies and institutional investors in the acquisition and sale of patent portfolios having strategic value and in the sourcing and execution of IP-intensive M&A transactions. Ron has worked in Silicon Valley for over 40 years, first as a software engineer and then as a patent lawyer, advising computer, communications, semiconductor, media and financial services companies on IP strategy, a subject he has taught at Stanford and Boalt (UC-Berkeley) law schools. Ron was a founding partner of the Silicon Valley offices of Skadden Arps (in 1998), Weil Gotshal (in 1991) and Irell & Manella (in 1988). The focus of Ron's prior legal practice was on the strategic use of IP assets in complex business transactions such as mergers and acquisitions, technology spin-outs, joint ventures, and strategic alliances, and Ron led IP teams in some of the largest technology deals ever done, worth over \$50 billion.

This paper reflects the authors' current views and should not be necessarily attributed to their former, current or future employers or their respective clients.

ENDNOTES

¹ *Industrial Metamorphosis: Factory Jobs Are Becoming Scarce. It's Nothing To Worry About*, The Economist 69 (Sept. 29, 2005).

² Ned Davis Research for Ocean Tomo, LLC, http://www.oceantomo.com/index_ot300.html (Last visited September 13, 2007).

³ CHI Research, Inc., *Small Serial Innovators: The Small Firm Contribution to Technical Change* (Feb. 27, 2003) at 3.

⁴ Alan Greenspan, *Remarks at the 2003 Financial Markets Conference of the Federal Reserve Bank of Atlanta*, Sea Island, Georgia (April 4, 2003).

⁵ James W. Ely, Jr., *The Guardian of Every Other Right: A Constitutional History of Property Rights* 6 (1st ed., Oxford University Press, 1992).

⁶ Marius Meland, *IP Litigation Yielded \$3.4B In 2006: Survey*, IPLaw360 (Dec. 29, 2006).

⁷ S. Athreye and J. Cantwell, *Creating Competition? Globalisation And The Emergence Of New Technology Producer*, Open University Discussion Papers, Economics, No. 52 (2005); *see also* S. Athreye & J. Cantwell, *Creating Competition? Globalisation And The Emergence Of New Technology Producers* 36(2) Research Policy 209 (2007).

⁸ We refer to those IP business models in existence as of this writing as “established” even though such models may have had their birth within the last few years (if not months) of this writing.

⁹ The listing of players for each business model is exemplary and not meant to be exhaustive. Further, entities may be listed as exemplary players under one or more business models due to their varied service offerings and activities. Lastly, the authors do realize that attempting to describe the various established IP business models is an exercise in categorization which unfortunately often leads to the “limitization” of the named entities.

¹⁰ *See* Raymond P. Niro and Paul K. Vickery, *The Patent Troll Myth*, 7 The Sedona Patent Journal at 153 (Fall 2006) (explaining the origin of the term “patent troll” and defining it as “somebody who tries to make a lot of money off a patent that they are not practicing and have no intention of practicing and in most cases never practiced.”).

¹¹ *See generally*, Anne Urda, *IP Securitization Getting a Second Look*, IPLaw360 (May 2, 2006); William J. Kramer and Chirag B. Patel, *Securitisisation of Intellectual Property Assets in the US Market*, Marshall, Gerstein & Borun (Jan. 2003) (available from <http://www.marshallip.com/news-publications.html>).

¹² Association of University Technology Managers, *U.S. Licensing Survey, FY 2005 Survey Summary* (Dana Bostrom and Robert Tieckelmann eds.) (available from http://www.autm.net/pdfs/AUTM_LS_05_US.pdf).

¹³ The listing of examples for each emerging business model is not meant to be exhaustive.