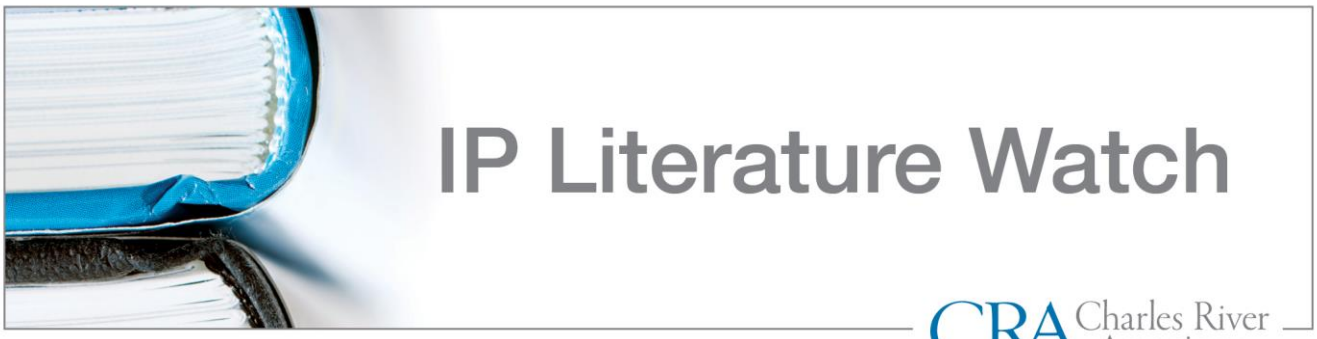

August 2014

This newsletter contains an overview of recent publications concerning intellectual property issues. The abstracts included below are as written by the author(s) and are unedited.

IP & Antitrust

Anticompetitive injunctions, unprotected market entry, and diagonal integration in patent disputes

Erik N. Hovenkamp (Northwestern University)
Thomas F. Cotter (University of Minnesota Law School)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2477965

The current approach for determining when courts should award injunctions in patent disputes involves a myopic focus on the hardships an injunction might impose on the litigants and the public. This article demonstrates, however, that courts sometimes could rely instead on a consideration far more relevant to the patent system's goal of promoting dynamic welfare: the extent to which the right to exclude was actually a necessary quid pro quo for the plaintiff's decision to bring its products to market. We begin with a discussion of a recent Federal Circuit decision, Trebro Mfg. Inc. v. FireFly Equipment, LLC, in which the court held that injunctive relief may be appropriate when a defendant infringes a patent that the plaintiff-competitor does not practice, and against which it lacked any legal protection when it entered the market in which the parties now compete. We then present a simple economic model demonstrating that under these circumstances — which are increasingly common in industries with rich markets for secondhand patents, resulting in the formation of what we refer to as "diagonally integrated" no practicing entities — injunctive relief poses a threat to consumer welfare that is not offset by any plausible benefit to innovation. The model's implications extend to a range of topics at the core of contemporary patent policy debates, including patent privateering, FRAND-encumbered standard essential patents, and preemptive patenting. In addition, we show that diagonally integrated NPEs are more likely to seek high licensing fees and aggressively seek injunctive relief than are conventional, "unintegrated" NPEs.

Public good economics and standard essential patents

Christopher S. Yoo (University of Pennsylvania Law School)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2476975

Standard essential patents have emerged as a major focus in both the public policy and academic arenas. The primary concern is that once a patented technology has been incorporated into a standard, the standard can effectively insulate it from competition from substitute technologies. To guard against the appropriation of quasi-rents that are the product of the standard setting process rather than the innovation itself, standard setting organizations (SSOs) require patent holders to disclose their relevant intellectual property before the standard has been adopted and to commit to license those rights on terms that are fair, reasonable, and non-discriminatory (FRAND).

To date courts and commentators have provided relatively little guidance as to the meaning of FRAND. The most common approach is to impose a uniform royalty based on a percentage over overall revenue. The baseline for setting this uniform royalty is the royalty that the patent holder could have charged had the standard had not been created. In essence, this approach takes the ex ante distribution of entitlements as given and attempts to ensure that the standard setting process does not increase patent holders' bargaining power. However, comparisons to the ex ante baseline do not provide a basis for assessing whether the resulting outcome would maximize economic welfare.

Fortunately, public goods economics can provide an analytical framework for assessing whether a particular licensing structure is likely to maximize economic welfare. Although it is often observed that patentable inventions are public goods, key concepts of public good economics (such as the Samuelson condition that provides public good economics' key optimality criterion) are rarely explored in any depth.

A close examination of public good economics reveals that it has important implications standard essential patents and FRAND. The resulting framework surpasses the current approach by providing a basis for assessing whether any particular outcome is likely to maximize welfare instead of simply taking the existing distribution of entitlements as given and allocating them in the most efficient way.

In addition, the insight that demand-side price discrimination is a necessary precondition to efficient market provision suggests that economic welfare would be maximized if holders of standard essential patents were permitted to charge non-uniform royalty rates. At the same time, the optimal level of price discrimination would allow consumers to retain some of the surplus. It also underscores that the fundamental problem posed by standard essential patents may be strategic behavior and incentive incompatibility. The literature also suggests several alternative institutional structures that can help mitigate some of these concerns.

Formerly manufacturing entities – piercing the 'patent troll' veil

Kristen Jakobsen Osenga (University of Richmond – School of Law)
Connecticut Law Review, Forthcoming
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2476556

Everyone hates patent trolls, those companies that "hijack somebody else's idea" and use the patents to "extort some money" from companies that actually make things. But not all patent trolls are created equal. This article is the first to focus on one type of patent troll – the formerly manufacturing entity. These patent trolls used to make or do something in commerce, but now derive all or a significant portion

of their income through licensing their intellectual property. Using case study analysis, this article demonstrates that formerly manufacturing entities do not impose the harms associated with patent trolls more broadly and, in fact, provide unique benefits for commercialization of new technologies. Specifically, formerly manufacturing entities do not "sneak up" on manufacturing companies, waiting for them to invest extensively in a technology before seeking a license; rather, the technology and the patents are already out in the open, having been practiced by the patent troll. Further, because formerly manufacturing entities have already worked to commercialize the technology, they are in a much better position to assess its value, as well as the costs and risks associated with bringing it to market. We should recognize the benefits formerly manufacturing entities add to commercialization and ensure that potential patent reform measures and judicial solutions to the patent troll problem are carefully drawn not to do more harm than good.

Patent trolls: evidence from targeted firms

Lauren Cohen (Harvard Business School)
Umit G. Gurun (University of Texas at Dallas)
Scott Duke Kominers (Harvard University)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2478506

We provide theoretical and empirical evidence on the evolution and impact of non-practicing entities (NPEs) in the intellectual property space. Heterogeneity in innovation, given a cost of commercialization, results in NPEs that choose to act as "patent trolls" that chase operating firms' innovations even if those innovations are not clearly infringing on the NPEs' patents. We support these predictions using a novel, large dataset of patents targeted by NPEs. We show that NPEs on average target firms that are flush with cash (or have just had large positive cash shocks). Furthermore, NPEs target firm profits arising from exogenous cash shocks unrelated to the allegedly infringing patents. We next show that NPEs target firms irrespective of the closeness of those firms' patents to the NPEs', and that NPEs typically target firms that are busy with other (non-IP related) lawsuits or are likely to settle. Lastly, we show that NPE litigation has a negative real impact on the future innovative activity of targeted firms.

IP & Innovation

Options trading and firm innovation

Iván Blanco (Universidad Carlos III de Madrid)
David Wehrheim (Universidad Carlos III de Madrid)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2468576

We examine the effect of options trading on firm innovation. We measure firm innovation by patent citations scaled by patents, and find that firms with more options trading generate more citations per patent. To establish causality, we use instrumental variable approach. Our identification strategies suggest a causal effect of options trading on the quality of innovation outputs and the effect is stronger for firms with more options trading. We then explore our baseline results by examining how options trading impact firm innovation differently in the cross section. First, our results generally support the notion that options trading effects the quality of firms' innovation outputs by way of its impact on price informativeness. Second, consistent with the premise that informed traders reduce managerial short-termism, we provide evidence that the positive relationship of options trading on firm innovation is more

pronounced when managers are less entrenched and when product market competition is high. Finally, we propose a direct test of how options trading affect managerial investment decisions. Our results suggest that options trading disciplines managers, inducing a more efficient resource allocation towards innovation projects that are closer to the firm's existing expertise fields, thereby increasing the quality of innovation outputs. Overall, our study offers novel evidence of a previously under-explored consequence of options markets, namely, its encouragement to firm innovation.

Upstream patents

Dmitry Karshtedt (Stanford Law School)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2465581

One of patent law's most important goals is to grant legal rights that are properly calibrated to incentivize invention without unduly stifling innovation, and one of its greatest struggles is to provide the appropriate level of protection for foundational, widely applicable inventions. Although many scholars have addressed the law's difficulties with patents on such "upstream" inventions, a systematic treatment of upstream patents has not yet been given. This Article adds to the literature by identifying an as-yet unrecognized requirement of patentability, here termed "the completeness requirement," which courts have used to limit patent protection on some upstream inventions. The Article argues that, although policy justifications for the completeness requirement are generally sound, its judicial implementation has been subjective and inconsistent at best, and damaging to innovation policy at worst. It also explains that the remedy of completely invalidating or disallowing patents on upstream inventions is disproportionate to the perceived harm of such patents.

The Article proposes two improvements. First, it posits that decision-makers should abandon the current hodgepodge of doctrines that collectively house the completeness requirement, and calls for the creation of a new statutory provision that explicitly recognizes it as a condition of patentability. Making completeness a standalone requirement would help reduce the problems associated with courts' ad-hoc, technology-specific implementation of it. Second, the Article proposes the Research Patent — a new form of intellectual property protection for patent claims that meet established patentability requirements but fail completeness. Unlike a regular utility patent, the Research Patent would only permit its owner to pursue a claim for a limited amount of damages before a specialized tribunal. The Research Patent would offer two benefits: it would provide incentives for creating upstream inventions and decrease the potential for stifling downstream innovation caused by granting full patent protection to such inventions.

A brief history of software patents (and why they're valid)

Adam Mossoff (George Mason University School of Law)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2477462

Today, there is a vigorous and sometimes caustic debate over whether computer software is a patentable invention. Unfortunately, these arguments are rife with confusion about the technology and the law, and courts are proving to be equally confused. As opposed to continuing the entirely doctrinal and policy debate in the literature, this essay fills a gap in the scholarship by detailing the historical evolution of computer software and showing how intellectual property (IP) law played a key role in its technological development. This historical account contributes to the debates in two ways. First, it reveals that opposition to IP protection for software is not new. There was vociferous opposition in the 1960s to extending copyright protection to software code, just as there is strident opposition today to extending

patent protection to software programs. Second, and more important, it reveals why courts extended patent protection to software programs in the 1990s, which followed from the evolution of computer technology itself. Legal doctrines evolve in response to developments in new technology, and the patent system exemplifies this operating principle. The patent system secured to innovators the new technological inventions in the Industrial Revolution and it secures to innovators the new technological inventions in the Digital Revolution today. Understanding the history of computer software and its evolving protections under the IP laws confirms that software programs today are inventions that, if they are new, useful, nonobvious and properly disclosed in a patent application, are rightly eligible for patent protection.

The chicken or the egg: Granger-causality between trade and innovation

Daniel K. N. Johnson (Colorado College)
Hunter Phoenix Van Wagoner (Colorado College)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2479559

While the literature is quite clear on the association between trade and innovation, there has been little explicit study of the direction of causality. This study uses all patents granted in the U.S. between 1987 and 1999, assigns them to probable industries of origin and sectors of use, then tests Granger-causality with trade flows in those same economic sectors. We run robustness checks on various measures of trade (imports versus exports, volume versus value of trade), and on various measures of innovation (patent counts, patent claims, citation-weighted patents, and patent counts weighted for originality or generality). Results at the aggregate level support the literature's assumption that imports cause innovation which then leads to exports, but at the industry level causality is more complicated, running in both directions from imports (or exports) to and from innovation.

Markets versus spillovers in outflows of university research

David C. Mowery (University of California, Berkeley)
Arvids A. Ziedonis (Stanford University)
Research Policy, Forthcoming
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2474196

A substantial body of research has examined the contributions of university research to regional economic development and technological innovation. This literature suggests that the channels through which university–based research affects regional economic or innovative activity may be divided into two broad categories — knowledge "spillovers" (i.e., positive externalities from university research) and "market–mediated" channels such as technology licensing or various types of employment relationships between academic scientists and firms. Yet little research has compared the geographic incidence of these market and nonmarket channels of interaction. This paper compares the localization of knowledge flows from university inventions through market contracts (licenses) and nonmarket "spillovers" exemplified by patent citations. We find knowledge flows through market transactions to be more geographically localized than those operating through nonmarket spillovers. Moreover, the differential effects of distance on licenses and citations are most pronounced for exclusively licensed university patents. We interpret these findings as reflecting the incomplete nature of licensing contracts and the need for licensees to maintain access to inventor know how for many university inventions. Such access appears to be less important for inventions that are nonexclusively licensed.

R&D spillovers and employment: evidence from European patent data

Luigi Aldieri (Parthenope University)
Massimiliano Agovino (University of Naples Parthenope)
Antonio Garofalo (University of Naples Parthenope)
Concetto Paolo Vinci (Università degli Studi di Salerno)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2473522

In this paper we investigate the patents role in the relationship between R&D activity, spillovers and employment at the firm level. A reduced form labour demand equation is estimated. R&D expenditures can account for both product and process innovation. The analysis is based upon a new dataset composed of 879 worldwide R&D-intensive manufacturing firms whose information has been collected for the period 2002-2010. We use data from all EU R&D investment scoreboards editions issued every year until 2011 by the JRC-IPTS (scoreboards). Since the innovation output of industrial strategy of every firm is the number of patents, the main contribution to the existing literature is to investigate also the impact of patents/R&D ratio and patents/Spillovers ratio on own employment level. The empirical results suggest a significant impact of R&D spillover effects on firms' employment but the results are quite differentiated according to the spillover stock type and this may represent a relevant source of policy implications.

IP Law & Policy

Competing visions of patentable subject matter

Tun-Jen Chiang (George Mason University School of Law)
George Washington Law Review, Forthcoming
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2469415

Although many people disagree about whether various types of subject matter (e.g. human genes, diagnostic tests, or business methods) are or should be patentable, they ostensibly agree on the overarching framework within which the issue is analyzed. Almost everyone in legal debates — in courts and in the scholarly literature — talks about patentable subject matter (PSM) in the consequentialist terms of promoting innovation and of maximizing utilitarian benefits while minimizing utilitarian costs. A solution to PSM debates is thus understood to involve merely the collection of better data and more empirical evidence to answer the utilitarian-economic question.

This Article challenges the widely shared premise. The ostensible consensus that everyone agrees that PSM law is about answering an agreed-upon utilitarian-economic question is an illusory one. In reality, debates about PSM law are not just about differences in empirical intuitions over economic costs and benefits; they are more importantly about differences in moral values, as well as about the relative weight of moral concerns vis-à-vis utilitarian concerns in patent law. Better data and more evidence will not resolve what is in reality a debate over first- and second-order normative commitments. Without candidly acknowledging and addressing the value differences that underlie PSM debates, the law in this area will remain an intractable mess.

Is the time allocated to review patent applications inducing examiners to grant invalid patents?: Evidence from micro-level application data

Michael Frakes (Northwestern University – School of Law)
Melissa F. Wasserman (University of Illinois College of Law)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2472794

This paper explores how examiner behavior is altered by the time allocated for reviewing a patent application. Insufficient examination time may crowd out examiner search effort, impeding the ability to form time-intensive prior-art-based rejections (especially, obviousness rejections) and thus leaving examiners more inclined to grant otherwise invalid applications. To test this prediction, we trace the behavior of individual examiners over the course of a series of certain promotions that carry with them a substantial reduction in expected examination time. For these purposes, we use novel micro-level application data spanning a ten year period and estimate examiner fixed-effects specifications that allow us to control flexibly for examiner heterogeneity. We find evidence demonstrating that search efforts and time-intensive rejections indeed fall, while granting tendencies rise, upon the promotions of interest. Assuming that patent examiners will tend to make the correct patentability determinations when provided sufficient examination time, our results suggest that the present schedule of time allotments may be inducing patent examiners to grant patents that otherwise fail to meet the patentability requirements.

Patent imperialism

Bernard Chao (University of Denver Sturm College of Law)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2475219

With a few narrow exceptions, U.S. patent law concerns itself with activity that either occurs within this country's borders or crosses its borders. The result is that patent owners have only been able to recover money damages for activity that takes place in this country. In the typical case, that means that a patentee can recover lost profits or reasonable royalties for the domestic sales of infringing products. However, patentees have begun to advance a new and creative "worldwide causation" theory that would allow them to calculate damage based on sales everywhere. So long as some domestic infringement can be said to cause sales overseas, these patentees argue that there should be no territorial limitation on their recovery.

This Essay argues that the courts should reject this new theory on both doctrinal and policy grounds. As a purely statutory matter, permitting patentees to recover damages for sales that take place overseas would circumvent the explicit territorial limitations that are well established in U.S. patent law. This argument is reinforced by the presumption against the extraterritorial application of any U.S. law.

The worldwide causation theory of damages also makes bad international and domestic policy. Under the current international regime, each nation has its own patent system. This means that inventors must satisfy a country's specific patent laws to obtain a patent, and navigate through its courts to obtain any remedy that the country sees fit to grant. The proposed worldwide causation theory would subvert this regime and allow United States patent law to trump laws in other countries. Of course other countries could also follow suit and exercise their own forms of "patent imperialism" thereby wreaking havoc with notions of territorial sovereignty in patent law. In addition to causing problems abroad, the worldwide causation theory provides troubling disincentives for U.S companies. Companies that locate key activities in the U.S. will be worse off than companies that offshore those activities. In sum, there are ample reasons to reject patent imperialism.

Copyright Law

Reforming copyright interpretation

Zahr Said (University of Washington – School of Law)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2472500

This Article argues that copyright law needs to acknowledge and reform its interpretive choice regime. Even though judges face potentially outcome-determinative choices among competing sources of interpretive authority when they adjudicate copyrightable works, their selection of interpretive methods has been almost entirely overlooked by scholars and judges alike. This selection among competing interpretive methods demands that judges choose where to locate their own authority: in the work itself; in the context around the work, including its reception, or in the author's intentions; in expert opinions; or in judicial intuition. Copyright's interpretive choice regime controls questions of major importance for the parties, such as whether an issue is a matter of law or fact; whether an issue may be decided at summary judgment; whether expert testimony is allowed; and whether a use is fair or not (among multiple other doctrinal issues). Currently, the lack of transparency that characterizes copyright's interpretive practices creates unpredictability and unfairness for the parties, because method selection often matters to outcomes. As a function of interpretive choice, works of art may escape destruction if found non-infringing (Cariou v. Prince); movies may get made, or languish as legal disputes get ironed out (Sheldon v. Metro-Goldwyn Pictures; Effie v. Murphy); novels may get banned, or declared a fair use (Salinger v. Colting; Suntrust v. Houghton-Mifflin); fan works may be threatened (RDR v. Warner Bros). Ultimately, understanding interpretive choice helps evaluate the proper allocation and scope of decisional authority, assist in the proper characterization of issues, and identify the best tools to use in copyright's interpretive work. The Article concludes with a call for greater methodological transparency, and it offers a few modest prescriptions about which interpretive methods might be best adopted, by whom, when, and why. It proposes a rule-based, two-tiered approach to copyright adjudication, a process-based formalism that would constrain judicial discretion and could produce greater consistency and fairness.

Inventing around copyright

Dan L. Burk (University of California, Irvine School of Law)
109 Northwestern University Law Review Online (2014)
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2474424

Patent law has long harbored the concept of "inventing around," under which competitors to a patent holder may be expected, and even encouraged, to design their technologies so as to skirt the boundaries defined by patent claims. It has become increasingly clear that, for better or for worse, copyright also fosters inventing around. Copyright is not based on written claims, but because copyright links exclusive rights to technological actions such as reproduction, distribution, or transmission, the language of the copyright statute, and judicial readings of the statute, create boundaries around which potential infringers may technologically navigate. For example, the Aereo case recently decided by the Supreme Court involves technology that was explicitly designed to conform to non-infringing definitions of private transmission found in previous court decisions. But in copyright, unlike patent, there has been little analysis of the tendency to foster alternative technological development. In this paper I draw upon previous analyses of inventing around in patent law to assess the benefits and detriments of inventing around in copyright.

IP & Asia

Made in China: how Chinese innovation is changing the patent landscape

Jay P. Kesan (University of Illinois College of Law)
Alan C. Marco (United States Patent and Trademark Office)
Richard Miller (United States Patent and Trademark Office)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2469957

Although many developing economies are increasingly impacting the global economy, China's impact has been the greatest by far. Once hindered from competition by political and economic restrictions, China is now a major economic player. Curiously, China's increased impact has coincided with an increased demand for intellectual property protection for technologies originating from China, with rising application rates from the Chinese at the State Intellectual Property Office of China (SIPO) and the U.S. Patent and Trademark Office (USPTO or PTO). Indeed, more patents are needed to protect the myriad of technological innovations emerging from China.

This Article examines Chinese patenting trends in the United States over the last several decades, comparing those trends to other nations such as Japan, South Korea, Brazil, Russia, and India. Additionally, we identify the technology mix of patent applications that Chinese applicants are submitting to the PTO. The Article compares China's patenting trends in the past decade to other patenting trends for other Asian countries from earlier decades. Ultimately, we determine that China is not unique as a historical matter, but rather an accelerated version of earlier Asian patenting trends.

Other IP Topics

Bank loan spread and private information: pending approval patents

Marlene Plumlee (University of Utah)
Yuan Xie (Fordham University)
Meng Yan (Fordham University School of Business)
Jeff Jiewei Yu (Southern Methodist University)
Review of Accounting Studies, Forthcoming
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2474267

This study examines a specific source of lenders' ex ante information advantage, private information about borrowers' forthcoming patents. We examine this setting to provide evidence of the impact of such private information on borrowers' cost of debt. We find evidence consistent with lenders incorporating private information by charging borrowers with forthcoming patents a lower spread than borrowers that lack that private information. We document a negative association between loan spread and the citation count on forthcoming patents, consistent with borrowers providing lenders with detailed information regarding future expected cash flows from forthcoming patents and lenders responding through a reduction in interest costs for those borrowers. We also show that the reduction in loan spreads is related to the expected value of the forthcoming patent and is greater for borrowers with higher initial information uncertainty and default risk, and when the lead lender has greater loan concentration in the borrower's industry. Our results suggest that forthcoming patents are a significant source of private information useful to borrowers and employed by lenders.

About the editor

Dr. Anne Layne-Farrar is a vice president in the Antitrust & Competition Economics Practice of CRA. She specializes in antitrust and intellectual property matters, especially where the two issues are combined. She advises clients on competition, intellectual property, regulation, and policy issues across a broad range of industries with a particular focus on high-tech and has worked with some of the largest information technology, communications, and pharmaceuticals companies in the world.

Contact

For more information about this issue of *IP Literature Watch*, please contact the editor:

Anne Layne-Farrar
Vice President
Chicago
+1-312-377-9238
alayne-farrar@crai.com

www.crai.com/antitrust

www.crai.com/ip

CRA's Competition and Intellectual Property Practices provide clients with a unique combination of antitrust economics expertise and IP valuation, damages, transactions, and strategy experience.