



IP Literature Watch

CRA Charles River
Associates

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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

Identifying benchmarks for applying non-discrimination in FRAND

Dennis W. Carlton (University of Chicago – Booth School of Business)

Allan Shampine (Compass Lexecon)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2462234

Standard setting organizations have for many years asked members to commit to license patents essential to use of standards on Fair, Reasonable and Non-discriminatory, or FRAND, terms. Previous work has shown how standard setting that incorporates patents can lead to complicated situations in which the patent owner, sometimes in collaboration with rival firms, can exploit the market power that is created by being designated a standard essential patent, but that the non-discriminatory provision of FRAND can be interpreted so as to mitigate the inefficiencies that can result when patent owners try to exploit their market power conferred by the standard setting process. This paper discusses the availability of appropriate benchmarks for implementing the non-discriminatory provision and shows how even when license terms for patents are not set in advance, FRAND terms can protect members of an SSO and that this protection can be implemented by using various benchmarks.

Selected quantitative studies of patents in standards

Rudi Bekkers (Eindhoven University of Technology)

Justus Baron (École Nationale Supérieure des Mines de Paris)

Arianna Martinelli (Scuola Superiore Sant'Anna di Pisa)

Yann Meniere (Mines-Paristech)

Önder Nomaler (Eindhoven University of Technology)

Tim Christoph Pohlmann (Berlin University of Technology)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457064

After an introduction into the principle data and methodology, this study starts by providing a quantitative overview of the general features of standard essential patents (also called SEPs). It considers the

occurrence of essential patents, how their existence has developed over time, and how essential patents are distributed among SSOs, technology areas, standards, and owners (including their business models). It also considers the legal status of such patents, for example whether they are actually enforceable. The study continues with an analysis on how SEPs differ from 'regular' patents. To make a fair comparison, a matched control set of patents was developed. We consider and compare the citation performance, the family size, and the patent grant likelihood. The final four chapters of the study focus on a set of specific topics: (1) 'blanket disclosures', (2) essential patent transfer, (3) patent pools, and (4) and litigation.

IP & Innovation

Patent trolls

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=2464303

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.

Does employee treatment facilitate corporate innovative success? Evidence from patent data

Chen Chen (University of Auckland)

Yangyang Chen (Monash University)

Edward J. Podolski (La Trobe University)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2461021

This paper investigates the effect that employee treatment has on corporate innovation. We find that firms which treat their employees well produce more patents. This finding is robust to alternate model specifications and correcting for endogeneity. We also find that these firms pursue a more focused and coherent patenting strategy, with a greater portion of their patents being directly related to their core business activity and existing knowledge base. This observation is consistent with the notion that treating employees well fosters greater cooperation across individuals and business segments during the innovative process. Finally, we find that the market values patents generated by firms which treat their employees well more highly, suggesting that employee treatment is relevant to the efficiency with which firms convert patented ideas into commercially successful products. Collectively, we show that treating employees well benefits shareholders by making the innovative process more effective and successful.

Patents and cumulative innovation: causal evidence from the courts

Alberto Galasso (University of Toronto)

Mark A. Schankerman (London School of Economics and Political Science)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2463384

Cumulative innovation is central to economic growth. Do patent rights facilitate or impede follow-on innovation? We study the causal effect of removing patent rights by court invalidation on subsequent research related to the focal patent, as measured by later citations. We exploit random allocation of judges at the U.S. Court of Appeals for the Federal Circuit to control for endogeneity of patent invalidation. Patent invalidation leads to a 50 percent increase in citations to the focal patent, on average, but the impact is heterogeneous and depends on characteristics of the bargaining environment. Patent rights block downstream innovation in computers, electronics and medical instruments, but not in drugs, chemicals or mechanical technologies. Moreover, the effect is entirely driven by invalidation of patents owned by large patentees that triggers more follow-on innovation by small firms.

Government subsidized R&D, project screening, and firms' innovation: evidence from China

Di Guo (University of Hong Kong)

Yan Guo (Peking University)

Kun Jiang (University of Hong Kong)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2458780

The effects of government subsidies to corporate R&D on firms' innovation outputs still remain inconclusive in existing studies. Moreover, little is known how the screening system of the public R&D programs influences the effect of such programs. This study examines the effects of Innofund (one of the largest Chinese government programs supporting corporate R&D activities) on firms' innovation outputs in China. In particular, the project screening mechanism was changed due to policy amendments in 2005. This exogenous policy shock allows us to estimate how the project screening system affects the influence of public R&D subsidies. Based on a panel dataset of Chinese manufacturing firms, we find Innofund-backed firms outperform their non-Innofund-backed counterparts in innovation, measured by the number of patents, new product sales, and the volume of exports after they gained funding. The magnification effects of Innofund are larger after 2005, when the project-screening scheme became more decentralized indicating that decentralized screening functions better in public R&D investment. Finally, the effects of Innofund and the effects of the decentralized screening system that occurred in 2005 vary substantially across markets. The more economically and institutionally developed the market is, the stronger the Innofund effects and the project selection decentralization effects appear. The identification problems are handled by using the propensity score matching approach and the instrumental variable approach.

IP & Litigation

Patent examination and litigation outcomes

Shine Tu (West Virginia University College of Law)

Stanford Technology Law Review, Vol. 17, p. 507, 2014

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2458140

Conventional wisdom argues that unnecessary litigation of low quality patents hinders innovation, and that the PTO could play a role with its high grant rates. Accordingly, it is important to answer these

questions: (1) which patent examiners are issuing litigated patents, (2) are examiners who are “rubber stamping” patents issuing litigated patents at a disproportionately higher rate, and (3) are examiners with less experience issuing more litigated patents? In sum, do patent examiners who issue litigated patents have common characteristics? Intuition would argue that those examiners who issue the most patents (approximately one patent every three business days) would exhibit a higher litigation rate. Surprisingly, this study suggests that this is wrong.

This study uses two new patent databases that code for nearly 1.7 million patents and approximately 12,000 patents that were litigated between 2010 and 2011. This study determined that (1) litigated patents mainly come from primary examiners (those examiners with more experience), and (2) primary examiners with between three to five years of experience and who grant between forty-five and sixty patents per year are contributing to the litigated patent pool at a higher rate than expected. Interestingly, the highest volume primary examiners (examiners who on average grant more than eighty patents per year and have more than eight years of experience) do better than expected.

The effect of patent litigation and patent assertion entities on entrepreneurial activity

Catherine Tucker (Massachusetts Institute of Technology)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457611

This paper empirically investigates the statistical relation between levels of patent litigation and venture capital (“VC”) investment in the U.S. We find that VC investment, a major funding source for entrepreneurial activity, initially increases with the number of litigated patents, but that there is a “tipping point” where further increases in the number of patents litigated are associated with decreased VC investment, which suggests an inverted U-shaped relation between patent litigation and VC investment. This appears strongest for technology patents, and negligible for products such as pharmaceuticals. There is some evidence of a similar inverted U-shaped relation between patent litigation and the creation of new small firms. Strikingly, we find evidence that litigation by frequent patent litigators, a proxy for PAE litigation, is directly associated with decreased VC investment with no positive effects initially.

Lessons from the smartphone wars: patent litigants, patent quality, and software

Ronald A. Cass (Boston University School of Law)

Forthcoming on Minnesota Journal of Law, Science & Technology (vol. 16, no. 1, 2015)

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2459390

Commentators, public officials, and scholars have sounded alarms over the smartphone patent wars — hundreds of cases asserting infringement of patents by makers of smartphones and tablet computers — often suggesting broad, categorical “fixes” to problems this litigation reveals. In general, these recommendations sweep too broadly, throwing out good claims as well as bad and needed remedies as well as questionable ones. However, calls for attention along two margins promise improvements. One factor, the identity of the enterprise asserting patent rights, already is being used by courts in considering appropriate patent infringement remedies but its use needs to be refined. The other factor, patent quality — especially in software patents, where the existence of parallel schemes of intellectual property protection exacerbates quality problems — is even more critical to the way the system operates. Addressing the patent quality issue (which is distinct from patent clarity or patent notice) can do more than other reforms to reduce costs without reducing innovation incentives.

Ending unreasonable royalties: why nominal damages are adequate to compensate patent assertion entities for infringement

Daniel Harris Brean (The Webb Law Firm)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2455851

According to Section 284 of the Patent Act, damages for patent infringement are supposed to be compensatory. The statute only allows for recovery of "damages adequate to compensate for the infringement." Even though it qualifies that such damages must be "in no event less than a reasonable royalty," this language cannot be read to avoid the fundamental requirement that, as compensatory damages, any recovery must stem from actual harm suffered by the patent owner. Absent proof of actual harm, only nominal damages should be recoverable. Yet patentees who suffer no actual harm are regularly obtaining considerable amounts of money from alleged infringers as purported reasonable royalty damages. This state of affairs reveals a need to correct the course that damages law has taken.

The most prominent group of patent owners receiving windfalls instead of compensatory damages are patent assertion entities ("PAEs"), also known as "patent trolls." While there are other situations where patentees are not actually harmed by instances of infringement, PAEs' business models and damages theories best highlight how existing damages law is being misread and exploited to support widespread overcompensation for infringement.

PAEs are exclusively in the business of patent assertion, seeking to license their patents via actual or threatened litigation. They make and sell no products or services themselves, having no capacity or infrastructure to do so, nor do they partner with technology companies to develop and bring their patented products or services to market. Having no actual or prospective direct or indirect market participation relating to the technology, PAEs suffer no pecuniary loss from infringement — they are no worse off than they would be if the infringement had never occurred. PAEs are only legally harmed, not actually harmed, by infringement.

The business model of PAEs is lucrative because of the erroneous assumption that substantial reasonable royalty damages must be awarded for any infringement. The statutory language allowing for damages "in no event less than a reasonable royalty" has been twisted and expanded, especially by PAEs in recent years, far beyond its strictly compensatory origin. PAEs emphasize improper restitutional facts instead of compensatory ones to unduly inflate their supposed damages — i.e., they focus on the benefits to the infringer instead of the harm to themselves. They also draw analogies to common law trespass principles to suggest that, just as a trespass interferes with a landowner's use of real property, substantial damages are owed to patentees merely because they own the patent and the patent was infringed. When properly examined, however, these common law principles reveal that the analogy would support only nominal damages for such legally harmful but actually harmless trespasses.

Nothing in the legislative history of the reasonable royalty statute suggests that a reasonable royalty was required to be a substantial sum. With no evidence that Congress intended a reasonable royalty to be substantial or have a special meaning, under the plain meaning of the statutory text a royalty should be deemed reasonable simply when it constitutes sensible and fair compensatory relief. This allows for case-by-case findings of actual damages without artificial legal constructs that distort the meaning of Section 284. Under this fresh reading of the statute, patent owners who suffer no actual harm from

infringement would be entitled to recover nominal damages only. In some cases, such as those brought by PAEs, a nominal royalty is reasonable.

IP Law & Policy

Taming the mongrel: aligning appellate review of claim construction with its evidentiary character in *Teva v. Sandoz*

Peter S. Menell (University of California, Berkeley – School of Law)

Jonas Anderson (American University – Washington College of Law)

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Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457958

In its seminal *Markman* decision, the Supreme Court sought to usher in a more effective, transparent patent litigation regime through its ruling that “the construction of a patent, including terms of art within its claim, is exclusively within the province of the court.” In the aftermath of this decision, the Federal Circuit adhered to its prior holding that claim construction is a “purely legal issue” subject to plenary de novo review, downplaying the Supreme Court’s more nuanced description of claim construction as a “mongrel practice” merely “within the province of the court.” Over nearly two decades of experience in the post-*Markman* era, it has become apparent that the Federal Circuit’s adherence to its plenary de novo appellate review standard has frustrated district courts’ distinctive capabilities to apprehend and resolve the factual disputes inherent in claim construction determinations, undermined the transparency of the claim construction process, discouraged detailed and transparent explanations of claim construction reasoning, and produced unusual and at times alarming levels of appellate reversals. These effects have cast doubt on the predictability of patent litigation, discouraged settlements, delayed resolution of patent disputes, and run up the overall costs of patent litigation. Drawing on the Supreme Court’s decision, this brief advocates a balanced, structurally sound, legally appropriate, hybrid standard of appellate review that would promote more accurate and efficient patent dispute resolution. Factual determinations underlying claim construction rulings should be subject to the “clearly erroneous” standard of review, while the Federal Circuit should retain de novo review over the ultimate claim construction decision. In this manner, district court judges, in their capacity as fact-finders, could better surmount the distinctive challenges posed by the technical, mixed fact/law controversies inherent in patent claim construction.

The local rules of patent procedure

Megan M. La Belle (Catholic University of America (CUA) — Columbus School of Law)

Arizona State Law Journal, *Forthcoming*

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2459785

Congress, the Executive, and the Judiciary have all had “patent litigation abuse” on their minds recently. The concern is that too many frivolous patent suits are being filed and used to extract unwarranted settlements. The story is that bad actors — patent assertion entities (PAEs) or, more pejoratively, “patent trolls” — are suing small companies and end users for patent infringement even though PAEs make no patented products themselves. During the past year, Congress proposed close to a dozen bills aimed at curbing patent litigation abuse, the Executive took various anti-troll measures, and the Supreme Court decided a pair of cases that make it easier to shift fees based on patent litigation misconduct.

In the meantime, federal district courts have been addressing the patent litigation situation for years through procedural reform. Beginning in 2000, districts started adopting local patent rules to manage

patent litigation. Today, thirty district courts in twenty different states have comprehensive local patent rules, and many more individual judges have adopted "local-local" rules that apply to patent cases in their courts. While commentators have generally lauded the efforts of district courts to manage patent litigation, the consequence is highly divergent patent practice from one federal district court to the next. This Article is the first academic treatment of local patent rules to consider their effect both on patent policy and our federal system of civil procedure. It argues that the local patent rules movement undermines policies germane to patent law, particularly uniformity, and transgresses the trans-territorial and trans-substantive ideals of the Federal Rules of Civil Procedure. Yet, specialized procedural rules appear not only to be the current reality in patent litigation, but the inevitable future as well. The Article therefore proposes the promulgation of a national set of procedural rules to govern patent litigation — the Federal Rules of Patent Procedure — which will borrow from and be shaped by the local patent rules experiment.

A few kind words for absolute infringement liability in patent law

Robert P. Merges (University of California, Berkeley – School of Law)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2464756

I propose a partial defense of patent law's absolute liability rule. This rule makes it irrelevant whether an infringement defendant copied from the patentee or independently invented the patented invention. I draw from two literatures to make my point. I look first to studies of how technological information is communicated or "diffused". These studies, together with research by psychologists on "inadvertent copying", demonstrate that ideas are sometimes copied in obscure and subtle ways, leaving little or no evidence that copying has indeed occurred. Next, I turn to the literature on optimal standards of care in tort law. I use it to describe what would happen if U.S. law changed to require patentees to show copying. Potential patent infringement defendants – a class that includes virtually all people and companies performing research and development (R&D) – might well impose strict limitations on receipt of technological information, so as to rebut allegations of copying, thereby reducing the risk of legal liability. That would be bad. Technological communities thrive on ubiquitous and unregulated communication. Patent law as it stands encourages this, by making proof of copying irrelevant in patent cases. As a consequence, under the current regime researchers (as potential patent infringement defendants) have no reason to restrict their access to technical communications. For further support, I look to both copyright law and common law rules on the theft of ideas – both of which require proof of copying, and both of which have led potential defendants to invest in restrictive measures to guard against access to third party information.

By requiring only proof that the infringer is using an invention covered by the patentee's claims, patent law dispenses with the need to prove actual communication. This means that inventors seeking patents can freely disseminate their ideas, without needing to memorialize carefully all communications with fellow researchers. And it means that recipients of ideas have no incentive to protect against receipt of outside information.

The obvious downside of the current regime is that sometimes, an infringement defendant will really be a true independent inventor; no copying, subtle or otherwise, takes place. In these cases, as the literature shows, absolute liability imposes significant costs. These costs must be weighed against the benefits of information freely shared under the current absolute liability regime. It is hard to say how the costs and benefit net out. Under these circumstances, a recent innovation in U.S. patent law, the new "prior

commercial use” defense under the America Invents Act (AIA), may prove helpful. This defense permits one who can prove early commercialization of an invention to avoid liability even though he or she otherwise infringes. By rewarding an infringer’s early action, it cuts down on some of the costs of the absolute liability standard, while leaving that standard as the general rule in patent infringement cases. It is difficult to say whether this combination of (1) absolute liability, plus (2) an exception for early commercialization, provides the optimal set of incentives for potential patent infringers. But at least the prior commercial use rule encourages activity that has independent social value, in the form of rapid movement toward the market. Given that there are real benefits to the longstanding rule of absolute liability in patent law, this may be the best we can do.

Amicus brief: profits should be evidence of a patent's commercial success

Andrew Blair-Stanek (University of Maryland Francis King Carey School of Law)

Working Paper

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2458154

The Court should allow profits to be admissible evidence of an invention’s commercial success. The prospect of profits motivates firms to innovate. Looking at only sales and market share data to determine commercial success often provides courts with an incomplete picture, because sales and market share are merely means to businesses’ true goal: increased profits. Many inventions yield higher profits, without increasing sales or market share. Examples include inventions that lower a business’s fixed costs of production, and inventions that allow a business to charge a premium price to a smaller share of the market. Allowing admission of profits data to show commercial success would increase the accuracy of the commercial success analysis and would require only a minor clarification of this Court’s precedent.

IP & Copyright

Copyright and universities: legal compliance or advancement of scholarship? (The growth of copyright)

Kenneth D. Crews (Columbia University)

IPR Info, Vol. 2, 2014

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2457292

The legal questions of copyright issues at universities are diverse and regularly demand an analysis that melds the law with a formidable understanding of the institutional mission. This essay surveys some of the dominant copyright issues that arise at universities and examines the gradual development of copyright officer positions that have emerged at many institutions of higher education in the United States.

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.

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