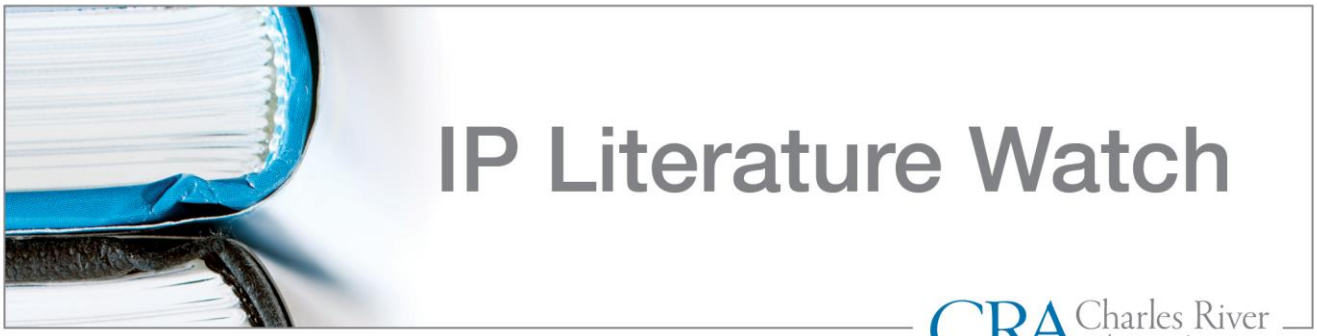

January 2014

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

Patent=monopoly: a legal fiction

Sven Bostyn (University of Liverpool - School of Law)
Nicolas Petit (University of Liege)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2373471

A patent right is an exclusionary right. With it, the patent holder can exclude third parties from making, using, selling, etc. products or processes protected by his patent. In the past, this right has also been referred to as a 'monopoly right' and this has lead to considerable confusion about the scope of patent rights and the role of the patent system in a modern economy. This paper seeks to provide some clarity on this issue and highlight the distinction between the exclusionary right granted by patent law and the notion of monopoly in economic regulation.

Injunctions for FRAND-pledged standard essential patents: the quest for an appropriate test of abuse under Article 102 TFEU

Nicolas Petit (University of Liege)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2371192

This paper discusses the legal test under which owners of Standard Essential Patents (SEPs) who have pledged to grant licenses to those SEPs on Fair Reasonable and Non-Discriminatory (FRAND) terms can be held guilty of an abuse of a dominant position under Article 102 of the Treaty on the Functioning of the European Union (TFEU) by seeking, or threatening to seek, injunctions against unlicensed implementers of their technology.

To that end, we use the theoretical framework described in a previous paper on rule-making in EU competition law (Petit, 2012). First, we sift through the various tests of abuse potentially applicable in positive EU competition law (I). Second, we show that an objective criterion should command the

selection of a test of abuse, and suggests using the notion of 'consistency' (II). Third, we rank the applicable tests of abuse on grounds of consistency (III). Fourth, our paper generalizes those results to propose a framework for the assessment of new forms of conduct under Article 102 TFEU (IV).

Standard-essential patents and the problem of hold-up

Joe Kattan (Gibson, Dunn & Crutcher LLP)
Chris Wood (Gibson, Dunn & Crutcher LLP)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2370113

Standard-setting organizations typically require FRAND commitments from owners of standard-essential patents in order to ensure the availability of technologies needed to practice the standard. Failure to observe these FRAND commitments can lead to "patent hold-up" when implementers of a standard are confronted with supracompetitive royalty demands from SEP owners exploiting the market power associated with the standard. This article reviews empirical evidence from several recent cases suggesting that the problem of patent hold-up is real. We then analyze a number of arguments that have been advanced to downplay the risks of patent hold-up and demonstrate that they are flawed.

Moving away from high-level theories: a market-driven analysis of FRAND in the context of standardization

Damien Geradin (George Mason University School of Law)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2371732

There is a large strand of legal and economic literature suggesting the FRAND regime is broken and that standardization is at risk given "hold-up and "royalty stacking" problems. A variety of proposals have been made to address these alleged problems, most of which seeking to decrease the bargaining power of essential patent holders to the benefit of standard implementers. The hold up and royalty stacking conjectures have been questioned by a number of authors essentially on the ground that these theories contained logical inconsistencies, but also that they were not based on sufficient empirical support to warrant policy reforms. Against this background, this paper explains why hold up and royalty stacking only occur in rare circumstances given the private solutions that are available to standard implementers to avoid paying license fees that are not FRAND or that would aggregate to a level that would render the implementation of the standard more difficult or even impossible. Given the dearth of empirical evidence over hold up and royalty stacking, this paper also looks at the evolution of the mobile communication sector in the past decade to see whether the alleged adverse consequences (in terms of harm to standard implementation, innovation and investment and the continuity of the standardization process) that would be created by hold up and royalty stacking can actually be observed. The available data suggests that the mobile communication device markets are healthy despite the fact that these markets have been said to be harmed by regular SEP-related abuses. Although it could be argued that these markets would be even healthier "but for" SEP abuses, the available data should give pause to those claiming that significant reforms should be made to the FRAND regime. In fact, the high degree of competition in the above markets and the presence of highly successful entrants that do not have a track record in the development of mobile communication technologies strongly suggest that the FRAND regime has largely worked in that it has stimulated the broad licensing of SEPs while maintaining a fair balance between the interests of SEP holders and standard implementers.

Decreasing returns, patent licensing and price-reducing taxes

Debapriya Sen (Ryerson University)
Giorgos Stamatopoulos (University of Crete)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2369827

In industries where a patent system is in place, licensing agreements among competing firms often create distortions, as they involve royalties. Royalties are generally considered to be anti-competitive as they raise market prices and reduce consumer welfare. In this paper we propose simple tax policies that can alleviate these effects. We consider industries where firms produce under decreasing returns and trade a patented technology. We first show that the interaction of royalty rates with decreasing returns can generate the counter-intuitive result that market prices decrease in the magnitude of diseconomies of scale. Using this result, we construct quantity tax schemes that lower prices and raise consumer surplus. Via these taxes the government collects sufficient revenue to compensate firms for their losses, without incurring any public deficit. Thus our schemes strictly Pareto improve the welfare of all agents.

'Essential' patents, FRAND royalties and technological standards

Mathias Dewatripont (Université Libre de Bruxelles)
Patrick Legros (Université Libre de Bruxelles)
The Journal of Industrial Economics, Vol. 61, Issue 4, pp. 913-937, 2013
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2373305

Standard Setting Organizations have developed FRAND agreements in order to prevent firms from holding up other participants once a standard is created. We analyze here the consequences of such agreements - in particular the requirements of fairness and non-discrimination - for the creation of technological standards that require the participation of existing patent holders. We abandon the usual assumption that patents bring known benefits to the industry or that their benefits are known to all parties. When royalty payments are increasing in one's patent portfolio, as is implicitly the case in FRAND agreements, private information about the quality of patents leads to a variety of distortions, in particular the incentives of firms to 'pad' by contributing patents that are 'inessential' for the given standard, a phenomenon that seems to be widespread. Several results emerge from the analysis: (i) the number of inessential patents co-varies positively with the number of essential patents; (ii) there is over-investment relative to the second-best, that is when padding cannot be avoided and (iii) the threat of disputes reduces incentives to pad but at the cost of lower production of strong patents; (iv) mitigating this undesirable side-effect calls for a simultaneous increase in the cost of padding, through a better filtering of patent applications.

IP & Biotechnology

'Pay for Delay': what do we disagree on?

Pierre Marcel Régibeau (Imperial College; Charles River Associates)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2368220

Antitrust concerns about "Pay For Delay" patent settlements are based on two theory of harms, one that stresses the need for Courts to review the validity of patents and one that emphasises the "probabilistic" nature of patent rights. The main weakness of the first theory of harm is that it fails to explain why some forms of patent settlements would be less desirable than others. The "probabilistic" theory of harm raises

fundamental questions about the legal obligations of a patent-holder, the type of uncertainty that should be reflected in the probabilistic nature of the patents and whether the theory can be applied to anything but the simplest PFD settlements. The paper also discusses the likely effect of a PDF ban on innovation and reviews both the European approach to recent and on-going PDF cases and the recent Actavis decision of the US Supreme Court.

IP & Innovation

The corporate preference for trade secret

Andrew A. Schwartz (University of Colorado Law School)
Ohio State Law Journal, Vol. 74, No. 4, 2013
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2368557

Many inventions can be legally protected either by patent or by trade secrecy, and a conventional wisdom exists on how to select between them. This Article adds to that literature by showing that corporations should have an inherent preference for trade secret over patent for reasons relating to their legal form. Among them is the idea that corporations are perpetual entities and therefore perfectly suited to reap the perpetual returns that only a trade secret can offer. The Article also addresses the potential for a conflict between the inherent corporate preference for trade secret and the preferences of corporate managers, who may prefer patent for reasons of their own.

What affects innovation more: policy or policy uncertainty?

Utpal Bhattacharya (Indiana University Bloomington - Department of Finance)
Po-Hsuan Hsu (University of Hong Kong)
Xuan Tian (Indiana University - Kelley School of Business)
Yan Xu (HKU, Faculty of Business and Economics)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2368587

We examine whether it is policy or policy uncertainty that affects technological innovation, using a large sample of 43 countries that have had various policy changes because of national elections. We find that innovation, captured by growth in patent counts, citations, and originality, is not affected by which policy (left, right, or center) is in place. Innovation, however, drops significantly during times of policy uncertainty measured by national elections. Taken together, our results suggest that businesses adapt to different policies, but face a problem when they do not know which policy to adapt to. Our paper provides new insights into the real effect of policy uncertainty on the economy.

Buy, keep or sell: economic growth and the market for ideas

Ufuk Akcigit (University of Pennsylvania - Department of Economics)
Murat Alp Celik (University of Pennsylvania - Department of Economics)
Jeremy Greenwood (University of Pennsylvania - Department of Economics)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2368232

An endogenous growth model is developed where each period firms invest in researching and developing new ideas. An idea increases a firm's productivity. By how much depends on how central the idea is to a firm's activity. Ideas can be bought and sold on a market for patents. A firm can sell an idea

that is not relevant to its business or buy one if it fails to innovate. The developed model is matched up with stylized facts about the market for patents in the U.S. The analysis attempts to gauge how efficiency in the patent market affects growth.

One foot in, one foot out: how does individuals' external search breadth affect innovation outcomes?

Linus Dahlander (Stanford University; Imperial College London)
Siobhan Clare O'Mahony (Boston University School of Management)
David Gann (Imperial College London - Innovation Studies Centre)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2366794

The 'variance hypothesis' predicts that external search breadth will lead to innovation outcomes, but time for search is fixed and cultivating breadth takes time. How does individuals' external search breadth affect innovation outcomes? We match survey data with complete patent records, to examine the search behaviors of elite experts at one of the world's most innovative firms. Counter to expectations, individuals who spent more time inside the firm were more likely to be innovative. Individuals with high external search breadth were more innovative only when they allocated more attention to those sources. Our research identifies limits to the 'variance hypothesis' and reveals two successful approaches to innovation search: 'cosmopolitans' who cultivate and attend to external sources and 'locals' who draw upon internal sources.

Complementary patents and market structure

Klaus M. Schmidt (Ludwig-Maximilians-Universität Munich - Faculty of Economics)
Journal of Economics & Management Strategy, Vol. 23, Issue 1, pp. 68-88, 2014
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2376554

Many high technology goods are based on standards that require several essential patents owned by different IP holders. This gives rise to a complements and a double mark-up problem. We compare the welfare effects of two different business strategies dealing with these problems. Vertical integration of an IP holder and a downstream producer solves the double mark-up problem between these firms. Nevertheless, it may raise royalty rates and reduce output as compared to nonintegration. Horizontal integration of IP holders (patent pool, pass through) solves the complements problem but not the double mark-up problem. Vertical integration discourages entry and reduces innovation incentives, whereas a horizontally integrated firm always benefits from entry and innovation.

IP & Growth

Patents and productivity growth: evidence from global patent awards

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R. David McLean (University of Alberta - Department of Finance and Statistical Analysis)
Bohui Zhang (University of New South Wales - School of Banking and Finance)
Wenrui Zhang (Xiamen University - Institute for Financial and Accounting Studies)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2371600

Using a large sample of global patents granted by 74 different patent offices to companies in 59 different countries during the period 1980-2005, we document novel stylized facts regarding the distribution of

patents around the world, and test whether patents portend total factor productivity (TFP) growth. We find that only 17% of international firms' patents are granted in the U.S., suggesting that patents granted outside of the U.S. are important for international studies. Per capita patents vary a good deal across countries, and are economically meaningful predictors of per capital GDP growth; a one standard deviation increase in patent stock per capita portends a 0.85% increase in per capita GDP growth. Consistent with endogenous growth theory, patents increase GDP growth by elevating TFP growth rather than through stimulating capital stock growth. Innovations patented only in non-U.S. countries are stronger predictors of TFP growth than are innovations patented in the U.S.

What are the channels for technology sourcing? Panel data evidence from German companies

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Elisabeth Müller (Frankfurt School of Finance & Management)
John Van Reenen (London School of Economics - Centre for Economic Performance (CEP))
Journal of Economics & Management Strategy, Vol. 23, Issue 1, pp. 204-224, 2014
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2376556

Innovation processes within corporations increasingly tap into international technology sources, yet little is known about the relative contribution of different types of innovation channels. We investigate the effectiveness of different types of international technology sourcing activities using survey information on German companies complemented with information from the European Patent Office. German firms with inventors based in the United States disproportionately benefit from R&D knowledge located in the United States. The positive influence on total factor productivity is larger if the research of the inventors results in coapplications of patents with US companies. Moreover, research cooperation with American suppliers also enables German firms to better tap into US R&D, but cooperation with customers and competitors does not appear to aid technology sourcing. The results suggest that the "brain drain" to the United States can have upsides for corporations tapping into American know-how.

IP Law & Policy

Patent office contested proceedings and the duty of candor

Lisa A. Dolak (Syracuse University - College of Law)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2374038

The implementation of post-grant trial proceedings in the U.S. Patent and Trademark Office is one of the most significant aspects of the Leahy-Smith America Invents Act. Practitioners have a great deal of new subject matter to master, including the governing statutes and rules, and instructive Patent Trial and Appeal Board decisions. All of this new law is superimposed, however, on an existing legal landscape relating to the practitioner's duty of candor and potential consequences for candor violations. Furthermore, the new law creates additional candor and disclosure obligations specifically applicable in post-grant contested proceedings.

This paper discusses the "old" and "new" candor obligations of practitioners – their sources, their reach and applicability, and the potential consequences for their breach – in the context of the representation of clients in the new USPTO post grant contested proceedings. It identifies several examples of statements and conduct in post-grant proceedings that may particularly implicate the practitioner's duties of candor

and/or disclosure and, accordingly, warrant heightened care on the part of practitioners (registered and unregistered) and parties who participate in the new proceedings.

What is the probability of receiving a US patent?

Michael Carley (United States Patent and Trademark Office)
Deepak Hegde (New York University - Leonard N. Stern School of Business)
Alan C. Marco (United States Patent and Trademark Office)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2367149

We follow the prosecution histories of the 2.15 million new patent applications filed at the US Patent and Trademark Office between 1996 and 2005 to calculate patent allowance rates. 55.8% of the applications emerged as patents without using continuation procedures to spawn related applications. The success rate of applications decreased substantially from 1996 to 2005, particularly for applications in the “Drugs and Medical Instruments” and “Computers and Communications” fields. Applications filed by large firms are more likely to emerge as patents than those filed by small firms. We discuss the policy implications of our findings for inventors, policy makers, and social scientists who use successful patent applications as indicators of innovation.

IP & Investment

An analysis of dynamic econometric relationship between R&D input and innovative output in China

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Shuhua Zhong (HuaZhong University of Science and Technology – School of Public Administration)
OIDA International Journal of Sustainable Development, Vol. 06, No. 05, pp. 47-58, 2013
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2377823

This paper is a further step toward closing the analytical gap in the extensive literature on the results of government and enterprises R&D efficiency on the innovative output by treating government R&D funding and enterprises R&D investment as inputs, considering patents and academic publications as outputs during 1990-2009 in China, which dynamics are adequately captured by the cointegration tests, error-correction models and Granger-causality tests. The empirical results evidently identified the long-lasting relationship between different R&D investment rate elasticity of respective innovative output, and the short-run rate elasticity and impact of government and enterprises R&D investment were smaller and statistically weaker than the long-run, while the Granger-causality tests were performed to determine the causal relationship between R&D inputs and outputs, the lag length tests were performed to facilitate the cointegration analysis, which indicated that both the government funding and enterprises investment had unidirectional granger relationships with scientific publication and patent application, however, the relationships between government funding and respective innovative output were stronger than enterprises investment, while the effect of enterprises investment on patent application was more direct and effective. Furthermore, the results also showed that it took two years for government funding, as for the enterprises investment it only took one year, which would have a significant impact on respective innovative output in China.

Crowdfunding's impact on start-up IP strategy

Sean M. O'Connor (University of Washington School of Law)
George Mason Law Review, Forthcoming
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2366937

"Crowdfunding" — the use of the Internet to raise significant aggregated funding from a large number of persons each contributing a small amount — includes both "project crowdfunding" (donations for a specific project that are not considered investment securities) and "enterprise crowdfunding" (sale of investment securities to raise general operating and growth capital). The former is lightly regulated and exemplified by sites such as Kickstarter and IndieGoGo. The latter has been effectively prohibited under traditional securities laws. The JOBS Act of 2012 required the SEC to promulgate rules providing a legal pathway for enterprise crowdfunding. Under the proposed rules, enterprise crowdfunding firms will become essentially "junior" reporting companies with significant public disclosure requirements. This Essay argues that such disclosures will negatively impact start-ups' intellectual property ("IP") portfolios. For example, firms may accidentally disclose patentable inventions or developing proprietary business or technology innovations. Experienced IP and securities counsel can mitigate these risks, but start-ups looking to use enterprise crowdfunding may not be able to afford such counsel. The crowdfunding disclosure regime may also force firms to accelerate or otherwise change their plans to procure IP rights. Meanwhile, the JOBS Act relaxed disclosure and general solicitation rules for the kinds of unregistered stock offerings currently used by start-ups. This means that there may be less practical value for start-ups to explore crowdfunding. The Essay concludes with suggestions for how start-ups can best manage their IP portfolios in light of the new kinds of unsophisticated investors and disclosure regimes entailed under crowdfunding.

This article is part of a symposium edition on "The Commercial Function of Patents in Today's Innovation Economy" published by the George Mason Law Review. It was delivered at a conference sponsored by the Law Review and the Center for Protection of IP at George Mason in September 2013.

IP & Copyright

Empirical copyright: a case study of file sharing and music output

Glynn S. Lunney, Jr. (Tulane University School of Law)
Working Paper
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2372630

In copyright, we are guided by a simple intuition: More revenue leads to more original works. But the relationship between revenue and creative output is not so simple. Broadening copyright in order to increase the revenue associated with any given work may ensure the expected profitability, and hence the creation, of additional works at the margins. At the same time, however, because copyright protection is uniform, broadening copyright also increases the revenue associated with works that are not at the margins, works that would have been profitable and so brought forth with less or even no copyright protection. As copyright broadens, it increases the "excess" incentives associated with these preexisting works. As these excess incentives grow, they may, at some point, lead popular authors to substitute leisure for work, and so perversely lead to fewer works from our most popular authors. Broader copyright may thus entail a trade-off between two marginal effects: More original works from new authors along one margin, but fewer original works from the most popular existing authors along a second. If the second effect outweighs the first, then more revenue may lead to fewer original works. Conversely, less revenue may lead to more original works.

While this may seem radically counterintuitive, it also happens to be true. To explore the relationship between copyright protection, revenue, and creative output, I treat the rise of file sharing and the parallel fall in music industry revenue as a natural experiment in radically reduced copyright protection. Using a hand-coded data set, covering songs in the top fifty of the Billboard Hot 100 from 1985 through 2013, and regression analysis, I show that the sharp decline in music industry revenue that paralleled the rise of file sharing was associated, ceteris paribus: (i) with fewer new artists entering the market; but (ii) also with more hit songs, on average, by those new artists who did enter. Moreover, because the second marginal effect was larger than the first, the decline in revenue since file sharing began was associated with a net increase in the number of new hit songs, ceteris paribus. Thus, for the music industry, the rise of file sharing and the parallel decline in revenue has meant the creation of more new music.

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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