



# IP Literature Watch

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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

### **Patent trolls: moral panics, motions in limine, and patent reform**

Edward Lee (Illinois Institute of Technology – Chicago-Kent College of Law)

*Stanford Technology Law Review*, vol. 19, 2016

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2768939](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2768939)

This Article provides the first empirical study of the use of the term “patent troll” by U.S. media—specifically, examining leading newspapers and online publications. The study offers several key findings: (1) First, starting in 2006, the U.S. media surveyed used “patent troll” far more than any other term, despite the efforts of scholars to devise alternative, more neutral-sounding terms. The tipping point was the combination of the controversial Blackberry and eBay patent cases in 2006 — prior to that time, “patent holding company” was the most popular term. (2) Second, the media more often portrayed such patent entities in a one-sided, negative light with very little analysis or empirical support. For example, few works provided statistics or discussion of any studies to support their negative portrayal. Practically no articles mentioned the lack of a working requirement in U.S. patent law, which permits all patentees not to practice their inventions. These findings provide support for the recent judicial decisions that have barred, at trial, the use of the term “patent troll” as unfairly prejudicial.

### **Measuring the costs and benefits of patent pools**

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

Michael Mattioli (Indiana University Maurer School of Law)

*Ohio State Law Journal*, *Forthcoming*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2759027](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2759027)

This Article addresses a policy question that has challenged scholars and lawmakers since the 1850s: Do the transaction cost benefits of patent pools outweigh their potential for consumer harm? This question has special importance today. Patent pools are on the increase, due to large numbers of patents in critical industries such as software and mobile phones. In this Article, we present the first empirically-based estimate of the transaction costs savings engendered by patent pools. Drawing on

interviews with administrators of prominent pools, we document the costs of assembling and administering a functioning pool. We then estimate the transaction costs that would result if the pool were never formed. This means estimating the costs of large-scale bilateral licensing of all patents included in the pool. We include an estimate, again based on empirical data, of the cost of occasional litigation when bilateral negotiations break down. Comparing the cost of running a pool with the counterfactual cost of licensing (plus probabilistic litigation) in the absence of a pool, we estimate empirically the transaction cost savings from pooling patents. The numbers are impressive: many pools save hundreds of millions of dollars in transaction costs.

Next, we tackle consumer welfare losses. Antitrust regulators and scholars identify two chief costs: lost substitutes and lowered incentives to invent improvements. Substitutes may be lost when a pool combines patents on two technologies that perform the same function. This has the potential to increase consumer prices. We present a method for estimating social welfare losses from combining substitutes. Through case studies, we apply this method to estimate the welfare losses (in dollars) caused by specific patent pools. We present a second method for estimating the consumer welfare losses represented by lowered incentives to innovate. The chief feature of pools that affects future incentives is the “grantback clause,” under which members agree to license future members into the pool. Again drawing from real-world case studies, we apply our method to estimate the potential losses in dollars that flow from grantbacks. This phase of the analysis draws on cutting-edge patent portfolio mapping techniques to estimate future lost substitutes due to grantback clauses.

When the welfare loss estimates are compared to the transaction cost savings, one arrives at a comprehensive methodology for evaluating patent pools. The systematic approach presented here allows a regulator to say, for example, that society could tolerate a certain number of lost substitutes, given the cost savings of a pool. And it allows a regulator to estimate the future substitutes, lost due to grantback provisions, that can be tolerated given the pool’s cost savings. Thus we present a comprehensive, reproducible, and rigorous framework for evaluating the net effects of any proposed patent pool.

This Article contributes two important “firsts” to the patent pooling debate: (1) We quantify the benefits (transaction cost savings) of patent pools, and (2) we quantify the consumer welfare costs from (a) lost substitutes, and (b) pool grantback clauses. The bottom line is a rigorous empirical approach to a policy question that has, until now, been carried along solely by theory and conjecture.

### **Infringement damages for externally acquired patents: an antitrust analysis**

Erik Hovenkamp (Northwestern University, Department of Economics)

Herbert J. Hovenkamp (University of Iowa – College of Law)

*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2767098](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2767098)

Most patent assignments are procompetitive and serve to promote the efficient commercialization of patented inventions. However, patent acquisitions may also be used to combine substitute patents from external patentees, giving the acquirer an unearned monopoly position in the relevant technology market. A producer requires only one of the substitutes, but by acquiring the combination it can impede product market rivals by limiting their access to important technological inputs. Similarly, a patent assertion entity may acquire substitute patents to eliminate inter-licensor competition, enabling it to charge supra-competitive license fees, much like a merger or cartel. For example, by acquiring two or more substitute patents that collectively dominate a market a PAE can effectively monopolize the technology for that market. Such anticompetitive practices are regularly condemned in conventional product contexts, but the courts have not yet applied the same antitrust logic to patent markets. And

they passively encourage anticompetitive patent acquisitions by awarding large damages when such patents are infringed.

We propose that infringement damages for an externally acquired patent be denied if the acquisition served materially to expand or perpetuate the plaintiff's dominant position in the relevant technology market. By weakening enforcement, this limits the patent holder's ability to use such acquisitions to anticompetitive ends. We do not suggest that a dominant patent holder should be prohibited from securing external patent rights in the relevant technology market, but simply that it should obtain them through nonexclusive licensing, not transactions that restrict third party access. This is as valuable to patent policy as it is to antitrust, for it will tend to increase innovation by discouraging systematic monopoly in technology markets.

## IP & Innovation

### Patent prospect theory and competitive innovation

Erik Hovenkamp (Northwestern University, Department of Economics)

*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2765478](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2765478)

In his seminal “prospect theory” of patents, Edmund Kitch contends that patents should be relatively broad in order to promote post-grant follow-on innovation and development. The argument rests critically on the assumption that post-grant competition will diminish such efforts. This is just a special case of the more general claim that a market will be more innovative when it is less competitive. When an innovator invents a new technology, it enters (or creates) a market for the relevant technology class, and the breadth of its patent determines how competitive this market can become. Prospect theory asserts that this post-grant market should involve little or no competition, and infers from this that patents should be broad.

However, economists have long debated the relationship between competition and innovation. A leading view among contemporary economists – the inverted-U hypothesis – contends that aggregate innovation is maximized somewhere in between monopoly and perfect competition; that is, the market should be relatively competitive, but not too competitive. This hypothesis is strongly supported by recent theoretical and empirical economic research, much of which suggests that the socially optimal market structure is in fact closer to perfect competition than monopoly. Although this theory has not previously been related to the question of optimal patent breadth, it provides perhaps the best economic machinery for addressing this problem. In particular, it suggests that, in contrast to the teachings of prospect theory, patent breadth should be fairly modest in order to elicit a relatively significant degree of post-grant competition.

### Shielded innovation

Lauren Cohen (Harvard Business School; NBER)

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*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2758841](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2758841)

We show that increased litigation risk has driven innovators to shield themselves by shifting innovation out of industry and into universities. We show both theoretically and empirically that litigation by non-practicing entities (NPEs) pushes innovation to spaces with reduced litigation threat. Innovation has

shifted into universities (and away from public and private firms) in exactly those industries with the most aggressive NPE litigation, precisely following extensive NPE litigation. The extent of innovation shielding is large and significant. An increase of 100 NPE lawsuits in an industry shifts up the university share of innovation by roughly 70% in subsequent years ( $t=5.34$ ).

### **Patents and innovation in economic history**

Petra Moser (Leonard N. Stern School of Business – Department of Economics; NBER)

*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2754342](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2754342)

A strong tradition in economic history, which primarily relies on qualitative evidence and statistical correlations, has emphasized the importance of patents as a primary driver of innovation. Recent improvements in empirical methodology – through the creation of new data sets and advances in identification – have produced research that challenges this traditional view. The findings of this literature provide a more nuanced view of the effects of intellectual property, and suggest that when patent rights have been too broad or strong, they have actually discouraged innovation. This paper summarizes the major results from this research and presents open questions.

## IP & Litigation

### **TCL v. Ericsson: Brazil's first standard essential patents antitrust investigation**

Ademir Antonio Pereira Jr. (University of Sao Paulo)

*Intellectual Property Committee, Fall 2015*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2765519](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2765519)

TCL, a Chinese manufacturer of smartphones and consumer electronics, filed an antitrust complaint against Ericsson with the Brazilian Antitrust Agency, CADE. After an 8-month investigation, CADE issued a reasoned decision closing the case without further action.

In reaching such decision, the Brazilian agency was writing on a blank slate — prior to this case, CADE had never investigated a complaint involving the use of injunctions to enforce essential patents, nor had any Brazilian Court addressed the antitrust issues related to essential patent disputes. By focusing on the competitive process rather than the narrow interests of a specific industry player, the decision demonstrates CADE's alignment with international best practices in sound unilateral conduct enforcement.

## IP Law & Policy

### **Rethinking assignor estoppel**

Mark A. Lemley (Stanford Law School)

*Stanford Law and Economics Olin Working Paper No. 486*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2755785](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2755785)

The Supreme Court and the Federal Circuit have repeatedly emphasized the public interest in testing the validity of patents, weeding out patents that should not have been issued. But there is one important group of people the law systematically prevents from challenging bad patents. Curiously, it is the very group patent law is supposed to support: inventors themselves. The century-old doctrine of assignor estoppel precludes inventors who file patent applications from later challenging the validity or

enforceability of the patents they receive. The stated rationale for assignor estoppel is that it would be unfair to allow the inventor to benefit from obtaining a patent and later change her tune and attack the patent when it benefits her to do so. The Supreme Court has traditionally disfavored the doctrine, reading it narrowly. But the Federal Circuit has expanded the doctrine in a variety of dimensions, and applied it even when the benefit to the inventor is illusory. Further, the doctrine misunderstands the role of inventor-employees in the modern world.

More important, the expansive modern form of assignor estoppel interferes substantially with employee mobility. Inventors as a class are put under burdens that we apply to no other employee. If they start a company, or even go to work for an existing company in the same field, they will not be able to defend a patent suit from their old employer. The result is a sort of partial noncompete clause, one imposed without even the fiction of agreement and one that binds anyone the inventor comes in contact with after leaving the job. Abundant evidence suggests that noncompetes in general retard innovation and economic growth, and several states prohibit them outright, while all others limit them. But assignor estoppel is a federal law doctrine that overrides those state choices.

It is time to rethink the doctrine of assignor estoppel. I describe the doctrine, its rationale, and how it has expanded dramatically in the past 25 years. I argue that the doctrine is out of touch with the realities of both modern inventing and modern patent law, and that it interferes with both the invalidation of bad patents and the goal of employee mobility. Should the Supreme Court take up the doctrine, it is unlikely to survive in its current form. Rather, it should – and will – return to its much more limited roots.

### **European Union competition law, intellectual property law and standardization**

Damien Geradin (George Mason University School of Law; Tilburg Law & Economics Center (TILEC))  
*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2765549](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2765549)

This paper provides an overview of the efforts of the European Commission to identify and, when necessary, challenge anticompetitive behaviour with respect to standardization and the licensing of standardized technologies, as well as the case-law of the CJEU on the same subject. The paper starts by discussing the 1992 Communication on Intellectual Property Rights and Standardization, which was the first important contribution of the Commission on the complex interface between standardization, intellectual property and competition law. It then analyses the first major investigations that the Commission made into the licensing conduct of SEP holders, i.e. the proceedings against Rambus and Qualcomm. Next, it discusses the 2010 Commission Guidelines on horizontal cooperation agreements, which contain a chapter dedicated to the application of EU competition rules to standardization agreements. The paper then examines how the Commission has dealt with mergers involving firms holding large SEP portfolios, such as its Google/MMI and Microsoft/Nokia decisions respectively adopted in 2012 and 2013. The paper also analyses the Commission decisions of 2014 against Motorola and Samsung regarding the use of injunctions by SEP holders to enforce their patents against standard implementers. It also analyses the Huawei v. ZTE judgment adopted by the CJEU in 2015, in which the CJEU was asked to determine the circumstances in which SEP holders could seek injunctions against standard implementers without breaching Article 102 TFEU. The paper then discusses several forms of licensing or litigation conduct, which can be problematic under EU competition law, but which have not yet been dealt with by the EU courts or the Commission. Finally, the paper concludes.

# Copyright Law

## Notice and takedown in everyday practice

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Joe Karaganis (Columbia University – The American Assembly)

Brianna L. Schofield (University of California, Berkeley – School of Law)

*UC Berkeley Public Law Research Paper No. 2755628*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2755628](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2755628)

It has been nearly twenty years since section 512 of the Digital Millennium Copyright Act established the so-called notice and takedown process. Despite its importance to copyright holders, online service providers, and Internet speakers, very little empirical research has been done on how effective section 512 is for addressing copyright infringement, spurring online service provider development, or providing due process for notice targets.

This report includes three studies that draw back the curtain on notice and takedown:

1. using detailed surveys and interviews with more than three dozen respondents, the first study gathers information on how online service providers and rightsholders experience and practice notice and takedown on a day-to-day basis;
2. the second study examines a random sample from over 100 million notices generated during a six-month period to see who is sending notices, why, and whether they are valid takedown requests; and
3. the third study looks specifically at a subset of those notices that were sent to Google Image Search.

The findings suggest that whether notice and takedown “works” is highly dependent on who is using it and how it is practiced, though all respondents agreed that the Section 512 safe harbors remain fundamental to the online ecosystem. Perhaps surprisingly in light of large-scale online infringement, a large portion of OSPs still receive relatively few notices and process them by hand. For some major players, however, the scale of online infringement has led to automated, “bot”-based systems that leave little room for human review or discretion, and in a few cases notice and takedown has been abandoned in favor of techniques such as content filtering. The second and third studies revealed surprisingly high percentages of notices of questionable validity, with mistakes made by both “bots” and humans.

The findings strongly suggest that the notice and takedown system is important, under strain, and that there is no “one size fits all” approach to improving it. Based on the findings, we suggest a variety of reforms to law and practice.

## U.S. Copyright Office Section 512 Study: Comments in Response to Notice of Inquiry

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Daphne Keller (Stanford University – Stanford Law School)

*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2757197](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2757197)

These comments were prepared and submitted in response to the U.S. Copyright Office’s December 31, 2015 Notice and Request for Public Comment on the impact and effectiveness of the DMCA safe harbor provisions in Section 512 of Title 17. Of the 30 questions posed in the Notice, we respond to



almost half, addressing (1) the overall effectiveness of the safe harbors in balancing stakeholder interests and promoting innovation in online products and services, (2) the operation of the notice-and-takedown process and the problems associated with a proposed “notice-and-staydown” policy, (3) the adequacy of the DMCA's counter-notice provisions to protect non-infringing user expression, (4) the soundness of judicial interpretations of legal standards relating to service providers' knowledge and control of users' infringements, and (5) the effectiveness of service providers' repeat infringer policies in light of the statute's lack of specificity concerning this requirement.

### **Oracle v. Google and software's copyright anticommons**

Clark D. Asay (Brigham Young University – J. Reuben Clark Law School)

*Emory Law Journal, Forthcoming*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2755732](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2755732)

Scholars have long assessed “anticommons” problems in creative and innovative environments. An anticommons develops when an asset has numerous rightsholders, each of which has a right to prevent use of the asset, but none of which has a right to use the asset without authorization from each of the other rightsholders. Hence, when any one of those rightsholders asserts its rights in ways that inhibit use of the common asset, an anticommons results.

In the software world, scholars have long argued that anticommons problems arise, if at all, because of patent rights. Copyright, on the other hand, has not been viewed as a significant source of anticommons problems. But this Article argues that copyright is an increasingly significant cause of anticommons problems in the software context because of at least two related reasons. First, the increasingly collaborative nature of much modern software innovation means that any given software resource is subject to dozens, hundreds, or even thousands of distinct copyright interests, each of which can ultimately hamper use of the software resource. While collaborative innovation licensing models help reduce the threat of any given copyright holder restricting use of the software resource, these licensing models do not altogether eliminate such risks and, in fact, actually create risks of holdup that have previously received less attention than they are due. Second, interoperability needs in the growing “Internet of Things” and “Cloud” economies demand sharing and reuse of software in order for these ecosystems to work. Yet because these technological ecosystems implicate thousands of different parties with distinct copyright interests in their software, the threat of any one of those parties ultimately asserting such rights in ways that inhibit the successful development and use of the Internet of Things and Cloud economies looms large. In order to illustrate these anticommons problems in practice, this Article examines a recent high-profile software copyright dispute between Oracle and Google.

As a solution to these types of problems, this Article proposes that courts should take into account the collaborative and interconnected nature of any given software resource in applying copyright's fair use defense to copyright infringement. Such legal adaptations are necessary because modern copyright law doctrines, and the predominant theory behind them, largely focus on the interests of single copyright holders, while paying insufficient attention to the modern dynamics of collaborative, interconnected creative efforts among a variety of stakeholders. The Article concludes by arguing that such considerations should become increasingly relevant in solving copyright disputes in other fields of creativity characterized by collaborative, interconnected development. Otherwise, anticommons problems will increasingly affect those fields as well.

## Undetected conflict-of-laws problems in cross-border online copyright infringement cases

Marketa Trimble (University of Nevada, Las Vegas, William S. Boyd School of Law)

*North Carolina Journal of Law and Technology, Forthcoming*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2755583](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2755583)

This article provides and analyzes data on copyright infringement cases filed in U.S. federal district courts in 2013; it focuses on infringement cases involving activity on the internet and discusses actual and potential conflict-of-laws issues that the cases raised or could have raised. The article complements the report entitled “Private International Law Issues in Online Intellectual Property Infringement Disputes with Cross-Border Elements: An Analysis of National Approaches” (the “Report”), which was published by the World Intellectual Property Organization in September 2015. In the Report its author, Professor Andrew F. Christie, discusses his empirical findings about the intersection of intellectual property (“IP”) law and conflict of laws and concludes that training activities, further research, and development of soft law would be the optimal means to address conflict-of-laws issues associated with cross-border IP infringements. This article arrives at a different conclusion: while training activities, further research, and the development of soft law may raise awareness of the issues, they will not solve the core problems that IP rights holders face when they strive to protect their rights against infringements on the internet. Development and coordination of conflict-of-laws rules, improvements in judicial cooperation, and streamlining of judicial proceedings in cross-border cases will be indispensable for addressing the issues effectively.

## IP & Asia

### Injunctions in Indian pharmaceutical patent infringement actions: some observations

Sandeep K. Rathod (Mylan Laboratories Limited)

*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2758327](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2758327)

India’s most recent tryst with pharmaceutical product patents is eleven years old. These years have seen a number of pharmaceutical patent infringement actions/suits brought on by patentees, though many of these litigations are pending final judgment as they have not yet completed trial due to various factors. The focus of the pharmaceutical patent owners/holders (patentees) in the initial stage is clearly to secure an immediate, interim injunction against the defendants. The present article focuses only on this initial stage – i.e. the practice of interim injunctions within the domain of pharmaceutical patent infringement suits - and based on the author’s experience and review of the information available in public domain for these litigations, makes the following observations:

- a) Obtaining an order of interim injunction in a pharmaceutical patent suit is not difficult for the patent owner. Indian Courts have in fact, granted interim injunctions in a majority of pharmaceutical patent infringement suits;
- b) A large majority of injunction requests are filed by the patentees as ex-parte and are quia-timet in nature. The defendant may not get an adequate opportunity to present its defense before the grant of such injunctions;
- c) While arguably, patent infringement suits can be filed in a host of District and High Courts, it would appear that patent owners prefer to initiate their suits and corresponding injunction requests only before the High Court of Delhi;
- d) Undertakings for non-commercialisation given by generic companies also act/stand on same footing as injunctions; and



- e) India will see more pharmaceutical patent infringement suits- including cases where IP owning generic companies file suits against other generic companies.

### **The emergence and development of intellectual property law in the Middle East**

Michael Birnhack (Tel Aviv University – Buchmann Faculty of Law)

Amir Khoury (Tel Aviv University - Buchmann Faculty of Law)

*Rochelle C Dreyfuss & Justine Pila (eds), The Oxford Handbook of Intellectual Property Law (2016 Forthcoming)*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2768379](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2768379)

The Eurocentric term ‘Middle East’ captures the historical sources and the emergence of Intellectual Property (IP) in this region. The initial European (British and French, replacing the Ottoman Empire) influence had a long lasting effect, and its laws, sometimes reformulated into local laws, are still in force in large parts of the region. In the mid-1990s the European dominance was taken over by newer winds of globalization. The global replaced the colonial, with new demands. Both the colonial IP and the globalized IP legal frameworks were mostly indifferent to local needs, and imposed a ‘one size fits all’ approach, allowing a rather narrow leeway for the local interests. Thus, Middle Eastern IP law is a case of western legal transplants, which by now have been absorbed within the recipient local legal systems. However, the insertion of a law from one jurisdiction into another is a process rather than a one-time event, and in the course of its assimilation, the transplanted law itself changes. This Chapter explores the emergence and development of IP law in the Middle East as a case of a western legal transplant.

Politics, economics and culture have invariably affected the practice of the law. Instead of a rather technocratic doctrinal approach that compares the law in a given country to the international standards and asks about ‘compliance’, we advocate a richer evaluation of a country’s IP regime. In assessing IP laws against global standards, one should inquire whether the law emerged from within this country, or was imposed upon it. In the latter case, the assessment should contextualize IP within the larger legal framework, along with constitutional law (especially freedom of expression), contract and property law, antitrust, tax and corporate law, as well as principles of unjust enrichment, good faith and the like. The assessment should take into consideration the political economy, local and global politics, and the country’s unique cultural needs.

We focus on several countries, each illustrating a different mix of legal, economic, political, and cultural factors. We discuss Egypt, Israel and the Palestinian Authority, Jordan, Saudi Arabia and the United Arab Emirates (UAE). We focus on the three main branches of IP laws: copyright, patents, and trademarks.

## **Other IP Topics**

### **Patents as commercial assets in political, legal, and social context**

Adam Mossoff (George Mason University School of Law)

*Tulsa Law Review*, vol. 51, 2016, pp. 453–468

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2757831](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2757831)

This essay, which was solicited for a special book review issue of the *Tulsa Law Review*, discusses Christopher Beachamp’s *Invented by Law: Alexander Graham Bell and the Patent that Changed the World* (Harvard University Press, 2015). Beachamp tells the story of Alexander Graham Bell’s invention, patenting, commercialization and litigation of the telephone. But his monograph does much more than this: it details the complex commercial, legal, social, and political contexts in which patented innovation functions as a commercial asset.

This essay examines the extensive historical details presented in *Invented by Law* in the context of today's "smartphone war" — the patent war wrought by the wireless computing revolution. Professor Beauchamp brings much-needed historical data to a debate in which many commentators assert that patent licensing, complex uses of patents in multi-component products, and extensive litigation are allegedly new features of the high-tech economy arising from the digital revolution. *Invented by Law* disabuses anyone of this false belief. Beauchamp explicates how complex inventions driving innovation in business models, as well as widespread licensing of patents, were common features of the nineteenth-century innovation economy. More generally, *Invented by Law* presents a fascinating historical case study of technological and commercial innovation, litigation, and ensuing public policy debate in Congress and in the country at large. As the Cylons intoned in Sy Fy Channel's *Battlestar Galactica*, "All of this has happened before, and all of this will happen again" — a theme about patented innovation convincingly presented by Beauchamp in *Invented by Law* as well.

### **Patent citations – an analysis of quality differences and citing practices in hybrid corn**

Petra Moser (Leonard N. Stern School of Business – Department of Economics; NBER)

Jeorg Ohmstedt (Bain & Company; Cornell University – Department of Economics)

Paul W. Rhode (University of North Carolina (UNC) at Chapel Hill – Department of Economics; NBER; University of Arizona)

*Working Paper*

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2754341](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2754341)

A growing empirical literature uses patent citations as a quality-adjusted measure for innovation, despite concerns about the validity of this measure. This paper links patents with objective measures of improvements in the quality of patented inventions – measured through performance in field trials for hybrid corn – to examine three potential factors that influence citations: 1) improvements in performance 2) citing practices of patent attorneys, and 3) citing practices of patent examiners. This analysis reveals that citations are robustly correlated with performance, which confirms that citations are a useful quality adjusted measure for innovation. The citing practices of patent attorneys and examiners, however, also influence citations. Patent attorneys cite early patents, which help establish the patentability of an invention; this practice may inflate citation counts for early patents, particularly for inventions that have only recently become patentable. Attorneys also add self-citations; our analysis indicates that that self-citations can be an indicator of follow-on invention. By comparison, examiner-added citations are typically unrelated to improvements in performance or follow-on invention.

#### **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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