Symposium

Steps Toward Evidence-Based IP

The Path of IP Studies: Growth, Diversification, and Hope

John M. Golden,* Robert P. Merges**, & Pamela Samuelson***

In *Bilski v. Kappos,*¹ the U.S. Supreme Court made it official: we live in “the Information Age.”² Information’s paramount economic significance is now undeniable. In the century’s first decade, intangible assets were estimated to account for “[a]s much as three-quarters of the value of publicly traded companies.”³ Related to this predominance of “conceptual” assets,⁴ public policymakers and private actors now widely recognize innovation—a form of “information in action”—as vital to economic growth.⁵ Moreover, in an age of drone warfare,⁶ the Stuxnet computer virus,⁷ panopticon-like electronic surveillance,⁸ cheap gene sequencing,⁹

* Loomer Family Professor in Law, The University of Texas at Austin.
** Wilson Sonsini Goodrich & Rosati Professor of Law and Co-Director, Berkeley Center for Law & Technology, University of California at Berkeley.
*** Richard M. Sherman Distinguished Professor of Law, Professor of Information, and Co-Director, Berkeley Center for Law & Technology, University of California at Berkeley.

¹. 130 S. Ct. 3218 (2010).
². Id. at 3227–29.
⁷. William J. Broad et al., *Israeli Test on Worm Called Crucial in Iran Nuclear Delay,* N.Y.
and massive computer-related breaches of privacy, information and innovation have assumed unprecedented prominence even in “noneconomic” policy areas such as national security, liberty, and personal health. Although world events can still turn on Bismarck’s “iron and blood,” knowledge and bits increasingly determine wealth, power, and everyday life.

Focus on information and innovation inevitably leads to concern with intellectual property. “Intellectual property” or “IP” is an umbrella term for a menagerie of legal regimes, such as copyright, patent, trademark, and trade secrets, that provide or fortify private rights in information. Although a variety of rationales for IP regimes have been posited, the dominant rationales, particularly in the United States, have been instrumental, viewing IP rights as means to ends. Despite this instrumental outlook, however, good empirical evidence about IP regimes’ operation and potential for reform has typically been frustratingly sparse. Some of this sparseness has reflected the difficulty of assembling such information, but much has reflected a lack of heavy investment in serious IP empirical studies. The Information Age, an age that “empowers people with new

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11. Otto von Bismarck, Prussian Chancellor, Statement on the German Future (Sept. 30, 1862), in ENCYCLOPEDIA OF THE AGE OF IMPERIALISM, 1800-1914, at 784, 785 (Carl Cavanagh Hodge ed., 2008) (“It is not by speeches and majority resolutions that the great questions of the time are decided . . . but by iron and blood.”).

12. See, e.g., Greenspan, supra note 4 (“[R]egardless of its causes, conceptualization is irreversibly increasing the emphasis on the protection of intellectual, relative to physical, property rights.”).


14. See WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 4 (2003) (“Today it is acknowledged that analysis and evaluation of intellectual property law are appropriately conducted within an economic framework that seeks to align that law with the dictates of economic efficiency.”); Fisher, supra note 13, at 169 (stating that the “most popular” of “four approaches” to intellectual property theory “employs the familiar utilitarian guideline that lawmakers’ beacon when shaping property rights should be the maximization of net social welfare”).
capacities to perform statistical analyses,”\textsuperscript{15} has caused this last worm to turn. IP legal studies have entered a new period of very substantial empirical scholarship, a period that might enable more precise and accurate policy prescriptions than ever before.

This symposium issue presents scholarship that aspires to push forward understanding of how IP functions and how it might improve. In view of the complex, diverse, and ever changing environments in which new information develops, definitive answers on IP’s performance and design cannot be expected anytime soon. But we can hope to take what this symposium terms “Steps Toward Evidence-Based IP.” Some steps might be largely promissory in nature, providing greater insight or understanding that might lead to practical results down the road. Some steps might suggest more immediate, discrete reforms. In any event, perhaps the greatest hope for this symposium is that it will herald ever greater commitment to more systematic and sophisticated studies of intellectual property’s normative justifications, empirical context, and actual and potential practical performance. In this sense, publication of this symposium issue should be more of a hopeful beginning than an accomplished end.

On the other hand, talk of this issue as a beginning should not obscure the fact that today’s intellectual property studies themselves build on decades of work that have already transformed IP studies from one of the legal academy’s more minor eddies into one of the academy’s most rapidly broadening streams. Just as the current Information Age reflects decades of relentless development of communications and computing technologies, the very existence of this symposium issue reflects decades of growth in IP scholarship and the IP scholarly community itself. As we think about where present empirically oriented intellectual property studies might take us, we should take brief note of the trajectory on which IP studies and the IP community have already traveled.

A few decades ago, a leading general law review’s dedication of an entire issue to largely empirically oriented IP studies would have been inconceivable. At that time, full-time professors teaching IP were a rarity at accredited U.S. law schools. IP teaching was largely the domain of practicing lawyers moonlighting as adjunct professors. Written IP scholarship tended to exist in a “bell jar”—or perhaps a series of separate bell jars for different fields of IP such as patent and copyright—largely segregated from the rest of legal academic scholarship (never mind economic scholarship) both in content and in locus of publication. IP scholarship was most likely to appear in a relatively small number of specialized, substantially practitioner-oriented journals—for example, the \textit{Bulletin of the Copyright Society of the U.S.A.}, the \textit{Journal of the Patent

\textsuperscript{15} Bilski v. Kappos, 130 S. Ct. 3218, 3229 (2010).

Of course, there were exceptions, for which a few “classics” might stand as representatives. Books by Benjamin Kaplan and Ray Patterson offered sweeping historical accounts of copyright law. In 1969 and 1970, Melville Nimmer’s Does Copyright Abridge the First Amendment Guarantees of Free Speech and Press and Paul Goldstein’s Copyright and the First Amendment grappled with tensions between free speech interests and copyright’s provision of private powers to restrict and tax expression. In 1970, Stephen Breyer’s The Uneasy Case for Copyright gave a critical account of copyright’s justification by both moral-rights theories and economic rationales. In 1966 and 1977, Edmund Kitch’s New Standards for Patents and The Nature and Function of the Patent System likewise brought to patent literature the sort of analysis characteristic of early stages of the law-and-economics revolution.

At the close of the 1970s, however, one might still have wondered whether IP scholarship had a very substantial future. A constellation of isolated lights was far from a cluster. It was only with the multiplication

16. BENJAMIN KAPLAN ET AL., AN UNHURRIED VIEW OF COPYRIGHT REPUBLISHED (AND WITH CONTRIBUTIONS FROM FRIENDS) 1 (Iris C. Geik et al. eds., Lexis Nexis Mathew Bender 2005) (beginning his account with “the Gutenberg revolution, which started it all”).
17. LYMAN RAY PATTERSON, COPYRIGHT IN HISTORICAL PERSPECTIVE (1968).
20. Id. at 984; Nimmer, supra note 18, at 1180.
22. Id. at 284.
25. See, e.g., Kitch, supra note 23, at 301 (explaining how “[t]he non-obviousness test [for patentability] shares the economic premises of both the novelty and genius tests”); Kitch, supra note 24, at 266 (“[T]he view of the patent system offered here conceives of the process of technological innovation as one in which resources are brought to bear upon an array of prospects, each with its own associated sets of probabilities of costs and returns.”). See generally Edmund Kitch, Foreword: The Fire of Truth: A Remembrance of Law and Economics at Chicago, 1932–1970, 26 J.L. & ECON. 163, 204 (1983) (quoting Harold Demsetz as recounting how law-and-economics trailblazers such as Aaron Director and Ronald Coase sought “to explain lots of things” through the assumptions “that people try to maximize and that really there is competition in the attempt to maximize”); Ejan Mackaay, History of Law and Economics, in 1 ENCYCLOPEDIA OF LAW AND ECONOMICS 65, 76–77 (Boudewijn Bouckaert & Gerrit De Geest eds., 1999) (describing the “research programme which has occupied the law and economics community through the 1970s” as fundamentally seeking “to tease out, using concepts borrowed from neoclassical economics, what would be ‘efficient’ rules . . . and to determine whether the common law in fact conforms to this logic”), available at http://encyclo.findlaw.com/0200book.pdf.
and diversification of IP scholarship in the 1980s and early 1990s that it became clear that the associated scholarly community had achieved a sort of bell-jar-defying escape velocity. During this decade and a half, IP scholarship grew not only in quantity but also in interdisciplinarity. The period saw continuing work in an economic vein—for example, in Wendy Gordon’s *Fair Use as Market Failure* and Part IV of Terry Fisher’s *Reconstructing the Fair Use Doctrine*. But an expanding corpus of IP literature also prominently featured, *inter alia*, historical and comparative law perspectives, **ethnographic attention to scientific norms**, philosophical influences, **lessons from linguistics**, and critical concern with public-choice theory. Meanwhile, a burgeoning body of technology and intellectual property law reviews provided increasing publication opportunities outside general-purpose legal journals.

Of particular relevance to this symposium’s empirical-studies focus, empirical IP studies have followed their own distinctive evolutionary path. In a 1952 report for the Senate Judiciary Committee, Fritz Machlup famously lamented how the state of empirical knowledge about the patent system made it impossible to know whether, economically speaking, the


31. See, e.g., Rochelle Cooper Dreyfuss, *Expressive Genericity: Trademarks as Language in the Pepsi Generation*, 65 Notre Dame L. Rev. 397, 399 (1990) (“draw[ing] upon the linguistic literature to show that discourse is indeed inhibited as control over words is lost”).

32. See, e.g., Jessica D. Litman, *Copyright, Compromise, and Legislative History*, 72 Cornell L. Rev. 857, 880 (1987) (discussing “suggest[ions] that courts should view statutes as negotiated, enforceable bargains between lobbyists and legislators”).

system as a whole was a good or bad thing.\textsuperscript{34} Machlup further suggested that, despite not being able to answer such large-scale questions, economists could give sound advice on micro-reforms designed to provide “‘a little more or a little less’ of various ingredients of the patent system.”\textsuperscript{35} But here too, Machlup cautioned that “[f]actual data of various kinds may be needed even before some of these decisions can be made with confidence.”\textsuperscript{36}

For decades, relatively little progress was seeming to be made in gathering the data necessary to answer questions either about IP regimes’ overall desirability or even about the desirability of more micro-level reforms.\textsuperscript{37} Trailblazing empirical work in the area came largely from scholars based outside of law schools—mainly economists such as Jacob Schmookler,\textsuperscript{38} F.M. Scherer,\textsuperscript{39} Edwin Mansfield,\textsuperscript{40} Zvi Griliches,\textsuperscript{41} Ariel Pakes,\textsuperscript{42} Mark Schankerman,\textsuperscript{43} Richard Levin,\textsuperscript{44} and, in occasional moon-

\textsuperscript{34} STAFF OF SUBCOMM. ON PATENTS, TRADEMARKS, & COPYRIGHTS, S. COMM. ON THE JUDICIARY, 85TH CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM 79 (Comm. Print 1958) (prepared by Fritz Machlup) (“No economist, on the basis of present knowledge, could possibly state with certainty that the patent system, as it now operates, confers a net benefit or a net loss upon society.”).

\textsuperscript{35} Id. at 80.

\textsuperscript{36} Id.

\textsuperscript{37} See George L. Priest, What Economists Can Tell Lawyers About Intellectual Property: Comment on Cheung, in 8 RESEARCH IN LAW AND ECONOMICS 19, 19–20 (John Palmer & Richard O. Zerbe, Jr. eds., 1986) (describing “classic literature on the scope of the patent right” as featuring a nearly zero “ratio of empirical demonstration to assumption” and as having failed to foster “an approach with a firmer empirical base”). See generally 1 ECONOMICS OF INTELLECTUAL PROPERTY LAW, at xii (Robert P. Merges ed., 2007) (noting “the progression of economic methodology” in articles relating to patent law, with “the qualitative, policy-oriented style of the Kahn article giv[ing] way to Nordhaus’ models of patent life and then the empirical approach of authors such as Schankerman and Pakes”).

\textsuperscript{38} See Richard R. Nelson, Demand and Discovery in Technological Innovation, 12 MINERVA 277, 277 (1974) (reviewing JACOB SCHMOOKLER, PATENTS, INVENTION, AND ECONOMIC CHANGE: DATA AND SELECTED ESSAYS (1972)) (describing how, through “[p]ainstakingly empirical” work, “Jacob Schmookler probably contributed more than any other economist to our understanding of the processes of technological advance”).

\textsuperscript{39} E.g., FREDERIC M. SCHERER ET AL., PATENTS AND THE CORPORATION: A REPORT ON INDUSTRIAL TECHNOLOGY UNDER CHANGING PUBLIC POLICY 4 (2d ed. 1959) (collecting “several sources of data . . . as the basis for conclusions on the use of patents by corporations and the requisites for an effective patent policy”).


\textsuperscript{42} Mark Schankerman & Ariel Pakes, Estimates of the Values of Patent Rights in European Countries During the Post-1950 Period, 96 ECON. J. 1052, 1052 (1986) (using empirical data on
lighting from similarly trailblazing theoretical work, Richard Nelson. In the 1990s, serious empirical work by legal scholars began to pick up, and in the past decade, legal scholars’ engagement in such work greatly accelerated—to a point where a separate electronic serial number for distributing abstracts from IP empirical studies was warranted.

As with IP studies more generally, the story of IP empirical studies flowering has been one of more than a mere growth in volume. Broad-brush approaches characteristic of early work—for example, looking at total numbers of patent grants as a function of factors such as national GDP—are now supplemented seemingly daily by finer-tuned studies that, for example, compare the treatment of particular counterpart patent applications filed in U.S., European, and Japanese patent offices. Significant contextualization of data and its analysis has become expected, if not absolutely necessary. Studies reporting data that crosses industrial or technological lines now routinely report not only overall numbers but also results for different industrial or technological categories. Other studies payment of patent renewal fees to estimate the private value of patents in the United Kingdom, France, and Germany).

43. E.g., id.


48. See, e.g., ZVI GRILICHES, Patent Statistics as Economic Indicators: A Survey, 28 J. ECON. LITERATURE 1661 (1990), reprinted in R&D AND PRODUCTIVITY: THE ECONOMETRIC EVIDENCE 287, 290 (1998) (explaining that “the information implicit in patent counts, in the number of patents issued at different times, in different countries, and to different types of inventors. . . . is the type of information that economists have largely focused on” and would be the principal focus of “this survey”).


focus more specifically on empirical aspects of IP within a particular industry, technology, or another subset of institutional contexts. Empirical studies seek to generate useful data through any of a variety of techniques, including surveys, interviews, hand coding, electronic data mining, and stylized experiments.

The growing empirical sophistication and capacities of IP legal studies have become evident. IP scholars sometimes adapt to their purposes data sets developed by others, but they often build up their own data sets, sometimes of prodigious size. The National Bureau of Economic Research’s U.S. Patent Citations Data File has now been joined by a number of litigation-oriented databases such as Lex Machina and DocketX, as well as a variety of proprietary databases to which private firms have occasionally allowed at least limited scholarly access. As with techniques of more systematic data gathering, the use of more sophisticated techniques of empirical analysis has migrated from economics and other fields into the heart of the work of IP legal scholars themselves, sometimes through direct partnerships between IP scholars and members of other academic departments that have greater traditions of technically sophisticated statistical analysis.

This background of IP studies’ growth and diversification resonates with this symposium’s gathering together of diverse forms of scholarship from a variety of IP fields. First, there are a series of litigation-related studies. The studies of John Allison, Mark Lemley, and David Schwartz and of Chris Cotropia and Jim Gibson each limn litigation landscapes in patent and copyright, respectively, and continue the work of constructing systematic databases that both their original authors and other researchers can later use. A narrower study by one of this Foreword’s coauthors focuses on lawsuits in which patent-infringement injunctions have issued, with this narrower focus facilitating concern with the specific language that

Berkeley Tech. L.J. 1255, 1277 tbl.1 (2009) (providing separate columns of data for patents held by medical device, software or Internet, biotechnology, and information-technology hardware start-up companies).

51. See, e.g., Ronald J. Mann, Do Patents Facilitate Financing in the Software Industry?, 83 Texas L. Rev. 961, 966 (2005) (using “a set of about 60 interviews with a variety of professionals knowledgeable about the software industry” to develop “qualitative information about the motivations and practices that form the institutional environment within which software firms operate”).

52. See, e.g., James Bessen & Michael J. Meurer, Essay, The Direct Costs from NPE Disputes, 99 Cornell L. Rev. 387, 389 n.6, 394–95 (2014) (describing use of aggregated results from a survey conducted by RPX, “a firm that helps companies manage risk from exposure to patent litigation,” and of data from “a comprehensive database of [non-practicing entity] litigation developed by RPX”).


In a second quartet of Articles, David Hyman and David Franklyn; Erin O’Hara O’Connor and Chris Drahozal; Ronald Mann; and Dotan Oliar, Nathaniel Pattison, and K. Ross Powell look at other sides of IP-related processes—namely, (1) purchases of rights in trademarked terms as keywords for internet searches;\footnote{David A. Hyman & David J. Franklyn, \textit{Trademarks as Search-Engine Keywords: Who, What, When?}, 92 TEXAS L. REV. 2117 (2014).} (2) contracts relating to innovation;\footnote{Erin O’Hara O’Connor & Christopher R. Drahozal, \textit{The Essential Role of Courts for Supporting Innovation}, 92 TEXAS L. REV. 2177 (2014).} (3) patent examination at the U.S. Patent and Trademark Office (USPTO);\footnote{Ronald J. Mann, \textit{The Idiosyncrasy of Patent Examiners: Effects of Experience and Attrition}, 92 TEXAS L. REV. 2149 (2014).} and (4) copyright registration with the U.S. Copyright Office.\footnote{Dotan Oliar, Nathaniel Pattison & K. Ross Powell, \textit{Copyright Registrations: Who, What, Where, and Why}, 92 TEXAS L. REV. 2211 (2014).} More specifically, Hyman and Franklyn look at questions of who typically purchases search rights in trademarked terms and how stable the pattern of such purchases is over time.\footnote{Hyman & Franklyn, supra note 56, at 2118.} O’Hara O’Connor and Drahozal study the extent to which private parties reserve the right to go to court, rather than arbitration, in disputes about rights in information or innovation.\footnote{O’Hara O’Connor & Drahozal, supra note 57, at 2181.} Mann studies the relationship between examiner characteristics such as experience, and issued-patent characteristics such as the number of claims.\footnote{Mann, supra note 58, at 2151.} Oliar, Pattison, and Powell use official records of copyright registrations to examine questions such as where the registering entities for a particular type of work are likely to call home, and whether such an entity is likely to be an individual or a firm.\footnote{Oliar, Pattison & Powell, supra note 59, at 2213–14.}

Finally, a trio of symposium Articles abstracts in different ways from the collection of empirical data about how existing IP systems operate. Chris Buccafusco, Zachary Burns, Jeanne Fromer, and Chris Sprigman explore how rules might be designed to stimulate innovation by discussing a series of experiments in which subjects perform various tasks with
different types of reward structures in view. Bob Bone and the duo of Oren Bracha and Talha Syed “abstract” in a more traditional way by focusing on questions of IP theory. Bone revisits and extends an earlier argument that trade secret law lacks normative justification independent of other normative structures such as those of contract or tort. Bracha and Syed contribute to a nascent literature on copyright’s justification that looks for insights in theories of product differentiation. Such “abstracted” scholarship remains an important part of any forward-looking empirical enterprise: theoretical concepts and understandings are necessary to make the leap from empirical studies of the past to legal prescriptions for the future.

The resulting mix of topical areas and methodologies—both in this symposium and in IP studies more generally—can be discomfiting and even a bit disorienting. There is cause for argument that at least certain subsets of what is now commonly called “intellectual property” are best considered more separately than all together. On the other hand, attention to a diversity of legal fields—whether different IP regimes or alternative legal regimes address analogous concerns—can offer some of the benefits that “generalists” are sometimes thought to have over “specialists”—for example, greater capacity for creativity and trans-substantive synthesis that can follow from a lack of precommitment to largely accepted assumptions or understandings within the specialist’s field.

Likewise, in at least one sense, the benefits of methodological diversity are self-evident. Each approach to study within an IP area, indeed each individual study, has something to teach us about IP rights. An empirical study of variability among patent examiners, for example, might lead to a call for better patent office quality control. Or it might simply push private actors to diversify their patent filings among different examining groups. On the theoretical side, better ways of grouping and organizing doctrines might stimulate new thoughts on core features of IP

66. Bone, supra note 65, at 1804.
68. Cf. Albert Einstein, Foreword to GALILEO GALILEI: DIALOGUE CONCERNING THE TWO CHIEF WORLD SYSTEMS—POLEMAIC & COPERNICAN, at xvii (Stillman Drake trans., 2d ed. 1967) (rejecting the notion of a “sharp contrast” between empirical work and theory by arguing, inter alia, that “[t]here is no empirical method without speculative concepts and systems”).
systems. Such thoughts might stimulate empirical study that leads to new insight into how current IP functions or malfunctions.

Additionally, methodological diversity can generate a significant payoff when multiple methodologies reach the same conclusion. Convergence of this sort sends a powerful message. We can more confidently argue for policy prescriptions when multiple scholars using different tools arrive at the same conclusion. So for example, when economic modeling, ethnographic interviews, and large-scale event studies all indicate that extending the term of copyright protection adds nothing to creators’ incentives, we can feel confident in advocating against further increases in the length of copyright. At the very least, methodological and scholarly consensus on this scale can help reveal the naked power of lobbying groups. The spectacle of a situation in which a policy proposal is opposed by all serious scholars but nonetheless gains political traction can suggest just how completely special-interest muscle can trump objective policy analysis.

Methodological diversity is actually essential if we are to have real confidence in our understanding of how IP works or should work. A new, policy-oriented synthesis can be robust precisely because it is built on many solid, discrete studies. To reach a high level in such a synthesis, we will need many more diverse studies of discrete phenomena. But as these pile up, we can hope to arrive at a firmer foundation for policy prescriptions than IP studies have ever known.

Although this symposium issue leaves us significantly short of a confident new synthesis, the Articles herein already suggest points of convergence and themes that might have significant policy implications. A number of this issue’s Articles suggest just how much we have to learn about the still relatively dark world of selection of disputes for litigation,\(^\text{70}\) for alternative forms of post hoc resolution,\(^\text{71}\) and for advance contractual arrangements.\(^\text{72}\) Quite distinct studies of patent litigation and copyright litigation suggest that the typical nature of IP lawsuits might not match the nature of those most salient cases to which we, the press, and policymakers tend to pay most attention.\(^\text{73}\) Hyman and Franklyn’s study of internet-keyword purchases suggests that denizens of the universe of contractual arrangements might be far from faithfully represented by denizens of the universe of litigated disputes.\(^\text{74}\) The work of Diamond and Franklyn reminds us that, even within the universe of litigated disputes, the work

\(^{70}\) See, e.g., Cotropia & Gibson, supra note 53, at 2016 (reporting relatively high frequencies for copyright litigation involving small firms or “low-IP industries”).

\(^{71}\) See, e.g., Diamond & Franklyn, supra note 55, at 2062 (reporting empirical evidence that surveys commonly promote settlement of trademark disputes).

\(^{72}\) See, e.g., O’Hara O’Connor & Drahazol, supra note 57, at 2180 (discussing evidence that contracting parties often opt to reserve the right to go to court to resolve certain types of disputes).

\(^{73}\) Cotropia & Gibson, supra note 53, at 2019; Golden, supra note 54, at 2075–78.

\(^{74}\) Hyman & Franklyn, supra note 56, at 211819.
product that appears publicly might not give the full flavor of the work product that operates offstage to help generate the settlement or abandon-
ment of conflict.\footnote{Diamond & Franklyn, supra note 55, at 2030–31.}

In short, the Articles in this symposium issue offer a variety of new insights and potential interconnections between them. But in part by helping to undermine prior understandings and intuitions, these studies also highlight the vastness of the remaining unknown. Even after decades of growth, IP studies have far to go before we can even hope for consensus about the proper bounds of evidence-based intellectual property. For the present, we can hope that the Articles in this issue contribute “Steps” toward that end, and we can hope that the Articles’ readers are moved to help in the journey.