

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

A Theory of Monopsony Power in SEP Licensing

Kalyan Dasgupta (Berkeley Research Group)

Bowman Heiden (University of California, Berkeley; University of Gothenburg)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7416958

This paper reframes the standard-essential patent (SEP) licensing debate around structural holdout rather than holdup. Contrary to the conventional narrative in which injunctive threats let SEP holders extract supra-FRAND royalties, the authors argue that implementers systematically hold the bargaining advantage: they can use declared technology for years before licensing, enforcement is fragmented across jurisdictions, and litigation costs deter smaller licensors from pursuing claims. Within this structural imbalance, a small set of power buyers, the largest device implementers, exercise a further, concentrated form of buyer power whereby their licensing decisions anchor FRAND benchmarks market-wide, giving them influence that more closely resembles monopsony than ordinary countervailing bargaining strength. Drawing on aggregate royalty data, litigation patterns and standard-setting governance, the chapter shows royalties persistently below court-endorsed caps and discusses the potential distortion in upstream innovation supply and standards composition. It closes by weighing institutional and competition policy responses, from centralized FRAND adjudication to renewed antitrust attention to buyer side power.

The Grand FRAND Bargain - Reframing the Competition Law & Economics of SEP Licensing

Bowman Heiden (University of California, Berkeley; University of Gothenburg)

Peter Camesasca (Camesasca BV)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7421098

This article advances a law-and-economics reframing of standard-essential patent (SEP) licensing, arguing that persistent regulatory and doctrinal confusion stems from analyzing SEP licensing as an ordinary, decentralized market transaction governed by substitutability, exit and price competition. It argues instead

that SEP licensing is better understood as the performance and completion of an inherently incomplete contractual framework: the "grand bargain" through which SEP holders undertake, as a condition of standard inclusion, to license on fair, reasonable and nondiscriminatory (FRAND) terms, while implementers rely on that commitment to make sunk investments in standard-compliant products. Because the FRAND commitment cannot specify royalties, portfolio allocation or downstream valuation ex ante, bilateral licensing, patent pools, licensing negotiation groups (LNGs) and judicial FRAND determinations are best understood as complementary mechanisms for completing the same underlying bargain, rather than as distinct antitrust phenomena. Applying this contractual paradigm, the article reexamines the competition law treatment of LNGs, arguing that they are more properly analogized to patent pools than to buyer cartels, and reconciles the apparently divergent English and German/Unified Patent Court approaches to SEP adjudication as different institutional methods for supervising performance of the same FRAND undertaking. The analysis has direct implications for the calibrated application of Articles 101 and 102 TFEU to standardization, collective licensing and post-standardization opportunism.

IP & Licensing

Injunction Frameworks and the Licensing of Standard-Essential Patents

Benno Buehler (Charles River Associates (CRA))

Dominik Fischer (Charles River Associates (CRA))

Bernhard Ganglmair (ZEW – Leibniz Centre for European Economic Research - Junior Research Group Competition and Innovation; University of Mannheim - Department of Economics; Mannheim Centre for Competition and Innovation (MaCCI))

ZEW – Centre for European Economic Research Discussion Paper No. 26-038

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7394698

We develop a licensing-litigation model to analyze how different injunction frameworks affect bargaining behavior, equilibrium royalties, and litigation outcomes in standard-essential patent (SEP) disputes. Motivated by recent developments in German case law, we compare two legal frameworks that differ only in whether the patent holder's licensing offer conditions the availability of injunctive relief. We show that removing the patent holder's offer from the injunction analysis raises equilibrium royalties and the risk of patent holdup when courts are sufficiently imprecise in assessing FRAND compliance; when courts are predictable, the two frameworks coincide. Higher royalties arise because SEP holders make more aggressive, non-FRAND, licensing offers, while implementers respond with higher counteroffers to reduce the risk of an injunction. The same mechanism, however, can reduce the incidence of injunctions, so injunction frequency is an imperfect measure of holdup. Whether the higher royalties raise or lower welfare depends on where the socially optimal royalty lies relative to the rates the two frameworks produce.

Ownership or License? Reassessing The Doctrine of Copyright Exhaustion for Digital Works Under Indian Copyright Law

Arvinth Vijay (School of law, Sastra university)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7378920

The doctrine of exhaustion, also known as the first sale doctrine, states that when a lawful copy of a copyrighted item is sold, the copyright holder no longer has control over how that particular copy is distributed. Historically conceived for tangible property, the doctrine presupposes the existence of a single, identifiable material object—a "copy" in the physical sense—whose boundaries define the scope of

what has been sold. This paper argues that this presupposition continues to hold for physical copies of video games, where a disc or cartridge functions as such a discrete object capable of outright sale and transfer, but breaks down for video games purchased through digital storefronts such as Steam or Epic Games. Drawing on the ontological distinction between a physical copy as a "token," capable of only one instantiation, and a digital copy as a "type," capable of indefinite instantiation whose scope is defined not by physical boundaries but by the terms of the license under which it is released, this paper contends that digital game transactions structurally resist the very premise on which exhaustion operates: there is no fixed material object corresponding to the physical copy whose transfer traditionally gives rise to exhaustion, and the consumer's rights are instead often structured through a license whose scope the rights holder defines. Drawing further on the doctrinal position under the Indian Copyright Act, 1957, the paper examines the resulting divergence in how Indian copyright law treats functionally identical consumer transactions—the purchase of a video game—based solely on the mode of delivery. It concludes by evaluating whether India's copyright framework should reassess the exhaustion doctrine to address this physical-digital divide, or whether the license-based model for digital works is doctrinally justified.

IP & Litigation

Patenting the Future

Sean B. Seymore (Vanderbilt University - Law School)

Texas A&M Law Review, Vol. 15, forthcoming 2027

Vanderbilt Law Research Paper No. 7468679

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7468679

This Essay examines a fundamental asymmetry in patent law: while patentability is evaluated at the patent application's filing date, infringement is evaluated at the time of infringement. This temporal misalignment allows patentees to paradoxically enforce patents against subsequent improvements or that were neither disclosed nor contemplated by the initial inventor at filing. This conflicts with two foundational requirements in patent law: that inventors both provide public notice of the claimed invention and enable a skilled artisan in the technical field to make and use the full scope of the claimed invention at the time of filing. Through the doctrine of equivalents (DOE), courts permit initial inventors to capture later-developed variants as infringements, even when such variants would fail statutory notice and disclosure requirements if claimed in the original patent application. This approach to the DOE causes tension between two essential patent policies: adequately rewarding pioneering inventors while preserving meaningful incentives for subsequent improvers.

This Essay proposes a recalibrated equivalence analysis that considers both parties' contributions: the initial patentee's enabling disclosure at filing and the technical merit of the subsequent improvement at the time of its development. This approach distinguishes between trivial technological advances warranting equivalence (and infringement) and substantial technical advances that do not. Adopting this approach would strike the right balance between the competing interests of initial inventors and subsequent improvers while also honoring patent law's commitment to public notice and disclosure.

Patents and Incentives to Assign, License, or Litigate

Keith N. Hylton (Boston University - School of Law)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7410840

This paper presents a model of the activity of patent intermediaries and potential infringers in a system of costly patent litigation. Because the intermediary, in comparison to the inventor, has a more credible threat to sue, both the revenue from infringement litigation and the intrinsic value of the patent are greater in the intermediary's hands. The central finding is that intermediaries license patents to potential infringers when infringement litigation is inefficient. Intermediaries tend to acquire high-quality patents from inventors and assign low-quality patents to potential infringers. Another issue this model addresses is the differential between the private and the social value of patents. Infringement reduces the private value of a patent but can increase the social value. This distinction implies that private and social incentives to license or to litigate patents may diverge. Intermediaries benefit society by licensing socially inefficient patents.

Proof After Compression: Copyright Infringement in AI Systems

Jie Wang (Southwest University of Political Science and Law)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7191998

Copyright proof has long established copying through a connection between a specific source and a specific output. When millions of works are compressed into a single model, the same process that gives the model generative power eliminates any record of which source contributed which feature of which output. That information is gone. Access and similarity remain observable, but what they once revealed is no longer recoverable at the level of detail prior doctrine assumed. The conditions that any such connection would have to satisfy, however, remain within the law's reach. Three are observable: the circumstances of training, the model's capacity to retain what it absorbed, and the features of the output itself. The fourth is settled only by elimination: whether any explanation independent of the source accounts for the resemblance. Copyright proof must shift from reconstructing the connection to verifying those conditions. This is proof after compression. Proof after compression works within copyright's existing commitments. Strict liability, the idea-expression distinction, plaintiff-side proof of copying, and adversarial adjudication all remain in place. Verification alone would let source-specificity collapse into protectability. The exclusion method holds the two apart: only a source-specific residuum that survives the elimination reaches copyright's unchanged protectability inquiry. Condition verification must also preserve rational inference, respect doctrinal limits, and permit meaningful adversarial contestation: three requirements this Article institutionalizes as Risk Path Proof, a four-element evidentiary framework that allocates burdens by observability and structures the defendant's challenge through specific alternative explanations. The leading AI copyright cases show what the framework must do and where its limits fall. The failure they expose has a doctrinal answer. The diagnosis beneath the failure reaches further.

IP & Innovation

Patents, Pay and People: How Innovation Reshapes the Workforce

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CESifo Working Paper No. 12986

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7463351

We examine how innovation shapes firm-level workforce dynamics using rich administrative data from Türkiye, a developing economy characterized by medium-technology, incremental innovation. We find that patent-based innovation increases both firm size and average daily wages, with the largest employment gains among workers earning just above the median wage. To uncover the mechanisms behind these outcomes, we construct worker transition matrices. Relative to comparable non-innovative firms, innovative firms (i) retain incumbent workers at higher rates, particularly at the top of the wage distribution, (ii) promote retained workers into higher wage bins more frequently, and (iii) hire more new workers, disproportionately into higher wage bins. Finally, occupational composition analysis shows that employment growth is concentrated among technical and production occupations, consistent with the medium-technology, incremental nature of innovation in our sample.

Stronger patent law increases the allocation of resources to external relative to internal R&D: Empirical evidence

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Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7444258

How should a technology firm adjust resource allocation between external and internal R&D in response to stronger patent protection? External R&D provides the firm with another channel of earnings to mitigate diminishing returns to internal R&D, but yields the firm only a fraction of the additional profit generated. Theoretically, if the marginal return to external R&D diminishes more slowly than the marginal return to internal R&D, the firm should increase external R&D proportionately more than internal R&D. Exploiting regional differences in the strengthening of patent protection due to the U.S. Court of Appeals for the Federal Circuit (CAFC), we find that the CAFC was associated with 35 percent more external R&D vis-à-vis 20 percent more internal R&D. The difference was more pronounced among firms more specialized in technology and in industries where patents were less effective.

The Innovation Trade-off of IP Box Regimes

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Ryan J. Wilson (University of Iowa - Henry B. Tippie College of Business)

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Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7405119

We explore the effect of intellectual property (IP) boxes on the nature of firms' innovative activities. As a policy tool to stimulate innovation, IP boxes offer a reduced tax rate on income generated from patents and

other IP investments. We examine how IP box tax incentives affect firms' production of basic research (i.e., scientific publications) and commercially marketable research (i.e., patents). Using a European cross-country setting and a stacked cohort difference-in-differences design, we find that IP box adoption is associated with a decrease in scientific publications and an increase in patents over the next three to five years, suggesting a trade-off between publishing and patenting activities. Results are strongest among financially constrained firms, in tight labor markets, and in IP box regimes with greater benefits. Additionally, while non-patent-related publications decline, publications receive more patent citations, and both radical and incremental patents increase post-IP box adoption. Finally, using individual-level author and inventor data, we find that the same individuals reduce publishing and increase patenting after IP box adoption. Our results are robust to using multiple subsamples and horizons. Our findings suggest that tax incentives that reward successful innovation motivate firms to direct resources away from publishing and toward patenting.

IP Law & Policy

Patent Enforcement vs Freedom to Conduct a Business: Managing the Fundamental Rights Balance in Europe

Enrico Bonadio (City University London, The City Law School)

Arjun Solanki (University of Vienna)

Submitted to the European Intellectual Property Review

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7479339

Injunctions, and patent enforcement more broadly, may, in some circumstances, impose disproportionate burdens on a range of businesses. Indeed, patent courts, especially in continental European countries such as Germany, effectively treat injunctions as the near-automatic consequence of infringement, despite proportionality-based guarantees in the Enforcement Directive, the UPC Agreement and national statutes. This article argues that patent enforcement, and injunctions in particular, must be tested against Article 16 of the EU Charter of Fundamental Rights (CFR), which protects the freedom to conduct a business (including for alleged infringers), through the proportionality and fair balance methodology of Article 52(1) CFR. This provision creates a unified constitutional framework that integrates the property guarantees in Article 17(2) CFR (as well as Article 1 of Protocol 1 of the European Convention on Human Rights) with business freedom under Article 16.

“Public use” without the Public: How Secret Prior Art Defeats the Patent Clause's Disclosure Mandate

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Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7411478

Ordinary readers would assume that "public use" means public use and that conduct kept secret cannot be "otherwise available to the public." Modern patent law increasingly embraces the opposite rule. Under a line of decisions culminating in *Helsinn* and its progeny, patents may be invalidated by confidential sales, secret commercial use, and other nonpublic activities that never make an invention available to the public.

This Article argues that the resulting doctrine of secret prior art is incompatible with both the America Invents Act (AIA) and the constitutional design of the patent system. Congress revised § 102 to reorganize novelty law around public availability, adding the phrase "otherwise available to the public" and replacing a complex set of inventor-specific forfeiture rules with a filing-date-based framework. Yet courts have continued to treat

secret activities as patent destroying prior art, effectively interpreting "public use" to include secret use and depriving Congress's public-accessibility language of much of its force.

The problem is not merely technical. The IP Clause directs Congress to promote the progress of useful arts by securing exclusive rights to inventors. The constitutional mechanism is reward. Secret-prior-art doctrine reverses that design. Rather than encouraging inventors to disclose their inventions through the patent system, it penalizes them for confidential conduct that contributes nothing to public knowledge.

The doctrine thus imposes a forfeiture on the very class that the Constitution identifies as the means through which technological progress is to be achieved. The doctrine also raises a broader question about statutory interpretation and separation of powers. By preserving judge-made forfeiture rules developed under a superseded patent regime, courts have effectively displaced Congress's decision to center novelty on public availability. This Article argues that public accessibility should be restored as the governing principle of prior art. Doing so would not merely resolve a dispute in patent law. It would restore coherence between statutory text, constitutional purpose, and the common-sense intuition that secret conduct should not constitute "public use," nor should a patent system designed to reward inventors operate by punishing them.

Mapping Professional Representation in European Intellectual Property Filings: Evidence from the IPRATE.Eu Research Dataset, 2004-2026

Mindaugas Kiškis (Mykolas Romeris University)

International Journal of Intellectual Property Management, forthcoming

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7441180

Professional representatives mediate intellectual property filing, yet the market through which applicants access intellectual property systems is rarely measured. This paper uses the IPRATE.eu European IP Firm dataset, consolidating 31 European national registers, the European Union Intellectual Property Office (EUIPO) and the European Patent Office (EPO), to measure professional representation in trade mark, design and patent filings in 2004-2026. The analysis harmonizes register data, resolves attorney-firm entities, filters in-house and self-filed strings, and computes representation rates, concentration, cross-border corridors and exploratory outcome/pendency associations. The analysis of 17.92 million records shows that the European Union trademark, design and European patent routes operate as professionalized, representative-mediated filing environments (near-fully represented within the representative-scoped extract, by construction), while resolved representation covers 44.86 percent of national trademark and 61.99 percent of national patent applications. The primary contribution is the first register-scale map of the European market of patent attorneys, trade mark attorneys and IP firms, linking filing route choice to professional-service intermediation, access to IP systems and market concentration, without claiming a causal effect of representation on outcomes.

Copyright Law

Who Authors (and Owns) Our Minds? Brain-Computer Interfaces (BCI), Artificial Intelligence (AI), and the Future of Copyright

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Nishtha Anil Agrawal (Fordham Law School)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7479481

The groundbreaking Brain-Computer Interfaces (BCI) are rapidly transforming the relationship between the human mind, artificial intelligence (AI) and the law. Once confined to the laboratories, implantable BCIs have finally entered multi participant human clinical trials and increasingly enable decoding of the neural activity into text, images, speeches, commands and other externally perceptible outputs. As AI-backed BCI systems become capable of interpreting, refining, generating and fixing neural signals into expressive outputs, they challenge one of the oldest assumptions of copyright law: that thoughts remain legally irrelevant until an individual voluntarily externalizes them into protectable expression.

Copyright doctrine has traditionally rested on a clear distinction between internal cognition and external expression. Where protection arises only on intentional externalization of ideas into an original expression that is sufficiently fixed to qualify for copyright protection. BCIs complicate this sequence. They allow the neural activity to be algorithmically decoded, interpreted, transformed and fixed through substantial AI mediation. This raises difficult questions of authorship and subject matter. When creative expression originated directly from the human neural activity but reaches its fixed form using technological intermediaries like AI-backed BCIs, who, if anyone, is considered the author? More fundamentally, at what point does human cognition become legally protected as expression? Or will these neural outputs always be considered mere manifestations of ideas?

These questions are no longer hypothetical. Copyright law must therefore determine whether such outputs fall within existing categories of copyrightable subject matter, remain unprotectable ideas, or warrant recognition as a new legal category. The answer will shape not only ownership of future creative works but also innovation incentives, investment in neurotechnology, and the protection of individual's cognitive autonomy.

This Article argues that existing copyright doctrine fails to adequately resolve these questions. Fixation, the idea-expression dichotomy, and traditional theories of authorship were developed in a context where internal cognition was largely separated from external manifestation. Treating decoded neural outputs categorically as ideas could leave individuals without meaningful protection against the unauthorized appropriation or commercialization of creative material derived from their cognition (brain activity). At the same time, extending exclusive rights to neural activity itself risks converting unexpressed thought into property, with implications for freedom of thought, scientific research, and technological development. The difficulty lies in distinguishing protectable expression from cognition without collapsing the two. Thus, looking past the false binary created by the existing doctrine that protects neither innovation nor human autonomy.

The Article evaluates competing ownership claims. One approach would allocate the copyright ownership and associated rights to the neurotechnology firms as users, based on technological fixation, algorithmic selection, substantial investment, Lockean labor principles, innovation incentives and based on Yanisky Ravid AI as agents approach following Work Made for Hire doctrine. The other competing approach

attributed the authorship in the individual whose neural activity provides the intellectual conception underlying the work, drawing upon personality theory, biological and cognitive individuality, moral accountability, and the longstanding principle that copyright protects human creativity rather than technological processes.

To resolve these doctrinal shortcomings, the Article develops a purpose-limited, consent-anchored Neuro-IP framework. The framework distinguishing successive stages of neural processing: from internal cognition, through decoded data and AI-assisted interpretation, to fixed expressive output.

Constitutional Copyright and the Meaning of Postponed Matters

Justin Hughes (Loyola Law School Los Angeles)

74 *J. Copyright Soc'y U.S.A.* ____ (forthcoming)

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7421620

The U.S. Constitution became an inspiration for the writing of organic laws all over the world; its provisions were often copied, its ideas even more often emulated. That includes Article I, Section, 8, Clause 8 – the mysterious 27 words drafted by the Constitutional Convention's "Committee on Postponed Matters" that gave Congress the power to grant copyrights and patents.

Since at least the mid-nineteenth century, American courts have wrestled with the meaning of many of the words in that clause -- "Author," "Writing," "Limited Times," and "Progress" – as well as what boundaries, if any, these words put on Congress' ability to legislate legal protection for expressive works. This paper offers a survey of these debates, noting that courts have been decidedly non-originalist when it comes to the Copyright and Patent Clause and that the one occasion when the Supreme Court used the clause to put sharp limits on copyright was a case centered on perceived lower court laxness, not Congressional expansion or strengthening of copyright.

Given the sparse historical record on the drafting of the Copyright and Patent Clause, this paper critiques various assumptions on how the clause was composed and emphasizes the speculative nature of any claims on the clause's meaning.

Boundaries Without Prices: Copyright, Deletion, and the Timing of Training Value

Bo Li (Guangxi Normal University)

Chengwei Wu (University of Macau)

Gao Wu (Guangxi Normal University)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7433981

Copyright institutions for generative artificial intelligence must act on values that become available at different times. Rightsholders know the opportunity cost of allowing training before use, whereas a work's realised training contribution is learned only through a post-training signal privately observed by the firm. We show that when the firm's observable technical intervention does not reveal differences within its private information, transfers alone cannot recover those differences for contribution-based payment. Post-training deletion nevertheless creates an ex ante option value that can increase both reservation and the measure of works ultimately trained. Copyright regimes therefore operate on different institutional margins. Under firmrightsholder joint surplus, an optimal positive-cost opt-out excludes a high-opportunity-cost head of works rather than sustaining a licensing region. Copyright can thus organise training access through observable boundaries even when realised contribution cannot be priced work by work.

IP & Trade

India's Traditional Knowledge Digital Library, the WIPO Genetic Resources Treaty and Patent Disclosure

Latika Choudhary (Mahindra University)

Australian Journal of Asian Law, Vol. 28, No. 1, Article 05: 77-91, 2026

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7392139

In examining possible pathways for strengthening the 2024 World Intellectual Property Organisation Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge this article turns to India's experience with the Traditional Knowledge Digital Library (TKDL) as a potential institutional reference point. The treaty's requirement that patent applicants disclose the origin of genetic resources and associated traditional knowledge constitutes an important development in international intellectual property law. In practise, however, the impact of this obligation is constrained by the absence of effective verification mechanisms and by dispersed enforcement across jurisdictions. Against this backdrop the article suggests that the incorporation of TKDL type databases into international patent examination processes could play a meaningful role in addressing these shortcomings. Full access to structured and authoritative repositories of traditional knowledge would allow patent offices to better evaluate disclosure claims, limit the scope for misappropriation, and contribute to more credible and equitable benefit-sharing outcomes for indigenous and local communities.

Other Topics

Connecting People and Spreading Ideas: Unraveling the Impact of Ride-Hailing on Knowledge Flows

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Aditya Karanam (University of Texas at Dallas - Naveen Jindal School of Management)

Dandan Qiao (National University of Singapore (NUS))

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7331578

This study examines how ride-hailing services affect localized knowledge flows among firms. Leveraging the staggered entry of Uber and Lyft across U.S. counties, we construct a panel dataset of within-city patent citations to measure interfirm knowledge flows. Using a difference-in-differences design, we find that the entry of ride-hailing services significantly increases local knowledge flows. Mechanism analyses using county-level traffic data and micro-level mobility data suggest that this effect operates through improved urban mobility: the entry of ride-hailing increases local traffic flows and facilitates opportunities for interactions across organizational boundaries. Consistent with this mechanism, we observe that the effect is stronger for firms that experience greater travel-time savings when using car-based transportation. Additional analyses show that ride-hailing entry disproportionately benefits firms with lower prior innovation output and fosters collaborative innovation. Overall, our findings indicate that, unlike physical infrastructure that creates new transportation links or relocates firms, ride-hailing platforms foster localized knowledge exchange and innovation by improving the use of existing urban transportation networks and enabling interpersonal interactions among geographically separated firms.

Social Capital and Innovation: Evidence from Facebook Friendship Networks

Brad Cannon (Binghamton University)

David Hirshleifer (University of Southern California - Marshall School of Business - Finance and Business Economics Department; National Bureau of Economic Research (NBER))

Joshua Thornton (Baylor University)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7390618

Using Facebook friendship data, we study how three aspects of social capital shape innovative activity. We find that the most important aspect of social capital in explaining innovation is Economic Connectedness (EC)--the share of high-income friendships. One standard deviation greater EC is associated with 97% more patents per capita among patenting ZIP Codes and 45% more breakthrough patents per capita among ZIP Codes with breakthrough patents. Reverse-causality tests, a within-inventor relocation design, and a quasi-experiment using fracking-driven economic shocks to nonlocal friends support a causal interpretation. Mechanism tests provide evidence consistent with a financing channel.

From Research Funding to Industry Partnerships: The Gateway and Gatekeeper Roles of University Technology Transfer Offices

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Vish Krishnan (University of California, San Diego (UCSD) - Rady School of Management)

Working Paper

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7439798

University Technology Transfer Offices are usually judged by patents, licenses, and revenue. This patent-centric view misses a critical part of their work: helping coordinate the broader process through which protected knowledge contributes to subsequent university-industry collaboration. We examine whether Technology Transfer Office presence changes how Japanese national universities convert publicly funded nanotechnology research into patent and publication outcomes. Using temporally ordered panel measures and university and year fixed effects, we find that Technology Transfer Office presence strengthens the association of prior research funding with subsequent patent grants and university-industry coauthored publications. University Technology Transfer Office presence is also associated with a stronger relationship between patents and later collaborative publication output. Separately, the complementarity between research funding and collaboration is stronger for junior than for senior researchers. The paper's central contribution is to move Technology Transfer Office evaluation beyond patents and licenses by treating collaborative publication as a technology-transfer outcome in its own right. The findings are consistent with Technology Transfer Offices helping universities protect potentially valuable knowledge while sustaining subsequent scientific collaboration. Theoretically, our study recasts the Technology Transfer Office as an organizational capability that may connect protection and dissemination, rather than as an office whose contribution ends with patents and licenses. Practically, it suggests that universities should evaluate Technology Transfer Offices not only by patent counts but also by whether protected knowledge is followed by scientific collaboration and lasting research ties with firms.

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