Tech REG CHRONICLE

LEADERSHIP

SEPTEMBER 2024

CPI COMPETITION POLICY INTERNATIONAL

Competition Policy International, a What's Next Media and Analytics Company

LETTER FROM THE EDITOR

Dear Readers,

This edition of the TechReg Chronicle addresses issues related to the annual LeadershIP EU Conference, which took place in Washington, DC on April 9, 2024. The panelists span the private and public sectors: regulators, academics, and private practitioners. Each brings a unique perspective on current issues relevant to the interaction between the IP rules, antitrust, and emerging fields, including notably artificial intelligence ("AI").

On that topic, **Dr. Kirti Gupta** explores the issues raised by the integration of AI into creative and inventive processes. Her paper summarizes the evolving dynamics between AI and IP, focusing on the patentability of AI-assisted inventions, copyrightability of AI-generated works, and potential copyright infringement of content for training AI models and by AI generated outputs. The paper examines recent legal rulings, such as those by the United States Patent and Trademark Office and the U.S. Copyright Office, highlighting the ongoing debates over AI as an inventor or creator. Furthermore, it discusses the implications of copyright infringement lawsuits and data licensing activity, emphasizing the need for clarity in IP rights and responsibilities.

The **Hon. Paul R. Michel (ret.)** & **Matthew J. Dowd** discuss the patent system's role in promoting competition. In their view, patents are frequently touted as detrimental to competition, but that perspective overlooks a more comprehensive view of

competition in an innovation economy. As a result of almost twenty years of adverse judicial decisions, arguably the legal system now deters competition and creates a David-versus-Goliath situation for smaller startups. Larger, entrenched corporations disproportionately benefit from weaker patents, leaving innovative startups with a mountain to climb. The authors discuss recent legislative proposals that would restore a more equitable competition environment and steer the American focus back to innovation.

Taking an unconventional view, **Jonathan M. Barnett**, rather than characterizing patents as barriers to competition, emphasizes the function played by IP rights in enabling transactions between innovators and the holders of complementary non-innovation assets. In those cases, IP rights can lower entry costs and expand access by reducing expropriation risk and enabling transactions between innovators and entities that hold capital, among other key competitive assets. Evidence from U.S. technology history (and in particular, the biotechnology and semiconductor markets) is consistent with this thesis.

Finally, **Richard Vary** explores recent German FRAND injunction jurisprudence, particularly from the Munich courts, and contrasts it with the approach in other jurisdictions, notably England and Wales. Other commentators have noted that the German courts have never upheld a FRAND defense. This, they say, is evidence of a need for reform, and for the Unified Patent Court ("UPC") to adopt a different approach. In the author's view, however, this is somewhat unfair. German courts were the first to recognize a FRAND defense, in *Standard Spundfass* and *Siemens v. Amoi*. The author argues that the UPC is proving successful as a patents court. It has achieved that success through adopting the parts of English and mainland European civil litigation procedure that work best in patent cases. If it could take the best aspects of English and German procedure in FRAND disputes, it may resolve those quickly, cost-effectively and fairly.

As always, many thanks to our great panel of authors.

Sincerely,

CPI Team

TABLE OF CONTENTS

CPI COMPETITION POLICY® INTERNATIONAL

LEADERSHIP
SEPTEMBER 2024

SUMMARIES

INTELLECTUAL PROPERTY MEETS ARTIFICIAL INTELLIGENCE

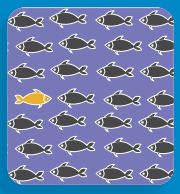
By Dr. Kirti Gupta

As artificial intelligence ("AI") technologies advance, their integration into creative and inventive processes raises critical questions regarding the intellectual property ("IP") framework. This paper summarizes the evolving dynamics between AI and IP, focusing on the patentability of AI-assisted inventions, copyrightability of AI-generated works, and potential copyright infringement of content for training AI models and by AI generated outputs. Traditional IP laws, designed to protect human inventors and creators, face challenges as AI systems increasingly contribute to innovation and creativity. The paper examines recent legal rulings, such as those by the United States Patent and Trademark Office and the U.S. Copyright Office, highlighting the ongoing debates over AI as an inventor or creator. Furthermore, it discusses the implications of copyright infringement lawsuits and data licensing activity, emphasizing the need for clarity in IP rights and responsibilities. Through a comprehensive overview of these issues, this paper advocates for a harmonized approach that balances the promotion of innovation and the inevitable use of technology in inventive process of invention and creation, with the protection of original creators' rights, and identifying key issues to pay attention to, as the landscape of AI and IP evolves.

PATENT PROTECTION: A CRUCIAL ANTITRUST TOOL FOR INCREASING INNOVATION

By Hon. Paul R. Michel (ret.) & Matthew J. Dowd

This article showcases why the patent system's oft-overlooked role as a promotive tool of innovative SMEs must receive more attention, including in the antitrust context. Patents are frequently touted as detrimental to competition, but that perspective overlooks a more comprehensive view of competition in an innovation economy. We also briefly describe the less fortified U.S. patent — a result of almost twenty years of adverse judicial decisions and system deters competition and creates a David-versus-Goliath situation for smaller startups. Larger, entrenched corporations disproportionately benefit from weaker patents, leaving innovative startups with a mountain to climb. Recognizing this adverse trend, several key Congress members have introduced important legislation that would amend the Supreme Court's past missteps. While no bill is without shortcomings, the pending legislation would restore a more equitable competition environment and steer the American focus back to innovation.



AN UNCONVENTIONAL VIEW OF INTELLECTUAL PROPERTY AND ANTITRUST POLICY

By Jonathan M. Barnett

It is commonly assumed that intellectual property rights and antitrust law stand in inherent tension. This view reflects an incomplete characterization of IP rights solely as an exclusionary instrument designed to block imitation and reward invention. This view overlooks the enabling function played by IP rights in enabling transactions between innovators and the holders of complementary non-innovation assets. In those cases, IP rights can lower entry costs and expand access by reducing expropriation risk and enabling transactions between innovators and entities that hold capital assets and production and distribution capacities that accelerate delivery of the underlying technology to businesses and end-users. More broadly, robust IP rights can promote both innovation and competition by facilitating entry into technology markets by the broadest possible range of firm types, irrespective of the level of integration or cost of accessing non-IP-based mechanisms for appropriating returns on innovation. Evidence from U.S. technology history (and in particular, the biotechnology and semiconductor markets) is consistent with this thesis.

HOW SHOULD THE UPC HANDLE FRAND?

By Richard Vary

The UPC is up and running, and considering its first FRAND cases. English and German courts have approached the question of injunctions in cases in different ways: the English court focusing on determining a FRAND rate which the infringer may agree to avoid injunction, whilst the German Court decides whether to grant an injunction under the fault-based approach in *Huawei v. ZTE*. This article considers which practices of the English and German Courts the UPC might adopt in FRAND cases, and what it can learn from parties' experiences in both courts.

WHAT'S **NEXT**

For October 2024, we will feature a TechREG Chronicle focused on issues related to **IP & AI**.

ANNOUNCEMENTS

CPI TechREG CHRONICLES November 2024

For November 2024, we will feature a TechREG Chronicle focused on issues related to **Digital Privacy**.

Contributions to the TechREG Chronicle are about 2,500 – 4,000 words long. They should be lightly cited and not be written as long law-review articles with many in-depth footnotes. As with all CPI publications, articles for the CPI TechREG Chronicle should be written clearly and with the reader always in mind.

Interested authors should send their contributions to Sam Sadden (**ssadden@competitionpolicyinternational.com**) with the subject line "TechREG Chronicle," a short bio and picture(s) of the author(s).

The CPI Editorial Team will evaluate all submissions and will publish the best papers. Authors can submit papers in any topic related to competition and regulation, however, priority will be given to articles addressing the abovementioned topics. Co-authors are always welcome.


INTELLECTUAL PROPERTY MEETS ARTIFICIAL INTELLIGENCE

BY DR. KIRTI GUPTA

Vice President, Cornerstone Research & Senior Advisor, CSIS. The views in this paper are those of the author alone and not necessarily of any of the professional affiliations.

01 INTRODUCTION

The relationship between human creativity and AI has emerged as an area of inquiry as AI technologies continue to advance and increasingly infiltrate various creative and inventive processes. This evolving dynamic necessitates a reevaluation of our existing IP framework.

First, the IP system must adapt to address the challenges posed by AI-generated and AI-assisted inventions and creations. Tra-

ditionally, patent law has been designed to protect the rights of human inventors for inventions that are useful, novel, and non-obvious thereby incentivizing innovation.[2] However, with the increasing use of AI tools in the inventive process across critical technologies ranging from biopharmaceuticals to semiconductor chip design, the patentability of AI-assisted inventions is an evolving question.[3] Similarly, copyright law has been designed to protect the rights of human inventors and creators for incentivizing creative output.[4] The advent of AI-generated or AI-assisted creative works ranging from art and music to literature are raising questions regarding what constitutes as creative work that is eligible for copyright protections.[5]

Moreover, questions about potential copyright infringement of both the input and output of large AI models are currently being raised in legal disputes in courts.[6] AI models are trained on large and extensive datasets, often generated by crawling the Internet, which may potentially include copyrighted material. The legality of utilizing this data for training AI models without explicit permission has become a contentious issue within legal and creative-work communities,[7] raising the economic question of valuing different types of data and any potential licensing models.[8] Some argue that Gen-AI models produce transformative works. Others posit that the use of data for training of Gen-AI models fall under the fair use doctrine. [9] Nevertheless, courts haven't yet established a clear precedent. At the same time, the U.S. Copyright Office is working on developing guidelines to help address some of these pressing issues and has received overwhelming interest and input from stakeholders, including the developers of AI models, content creators, and the general public.[10]

These issues highlight the complex interplay between fostering innovation, embracing the adoption of technology, and safeguarding patent and copyright protections. The purpose of this article is to provide an overview of the key issues at the intersection of AI and IP, and their potential implications for the inventive and creative process as AI tools are adopted more broadly. Section II provides an overview of the patentability of AI-generated or AI-assisted inventions. Section III summarizes issues related to copyrightability of AI-generated or AI-assisted creative works. Section IV discusses some of the key open questions and ongoing litigation concerning the use of training datasets in the training of GenAI models. Section V provides a conclusion.

02
AI AND PATENTS

New AI tools and applications are increasingly being used to assist in the process of creating inventions across industries. This has raised questions about the patentability of inventions generated by and assisted by AI.

One of the simpler questions –AI systems may invent but are they inventors? – has been asked and answered by the United States Patent and Trademark Office ("USPTO") and the United States Federal Circuit. In 2019, Dr. Thaler tested the limits of patent law by filing patent applications in more than a dozen countries for two inventions created by his AI machine, which he called Device for Autonomous Bootstrapping of Unified Sentience ("DABUS").[11] In the USPTO patent applications, Dr. Thaler wrote that "the invention [was] generated by artificial intelligence." The USPTO denied the applications on

2 35 U.S.C. § 101, § 102, and § 103 (United States Patent Act), defining what constitutes patentable subject matter. Merges, Robert P. & John F. Duffy, "Patents, Trade Secrets, and the New Economy," *Harvard Law Review,* vol. 113, no. 3, 2000, pp. 1322-1342.

3 See Kersten, Alex, "Assessing the Patent and Trademark Office's inventorship guidance on AI assisted inventions," *CSIS,* June 2024.

4 "Copyright Basics," *U.S. Government Publishing Office,* 2021.

5 Abbott, Ryan Benjamin and Rothman, Elizabeth, "Disrupting creativity: Copyright law in the age of Generative Artificial Intelligence," *Fla. L. Rev.*, Vol. 75, Issue 6, 2023.

6 Samuelson, Pamela, "Generative AI meets copyright," *Science,* 381.6654 (2023): 158-161.

7 Quang, Jenny, "Does training AI violate copyright law?," *Berkeley Tech. LJ* 36 (2021): 1407.

8 Benjamin, Misha, *et al.*, "Towards the standardization of data licenses," *AI for Social Good Workshop, ICLR*. 2019.

9 *Supra* notes 6 and 7.

10 See the Copyright Office's Notice of Inquiry, August 2023, at: Artificial Intelligence and Copyright.

11 See https://www.uspto.gov/sites/default/files/documents/ai-inventorship-memo.pdf.

grounds that "a machine does not qualify as an inventor." Dr. Thaler challenged the USPTO's decision in the U.S. District Court which upheld the USPTO's decision, concluding that an "inventor" under the Patent Act must be an "individual," or a natural person. Dr. Thaler then appealed to the Federal Circuit, which ultimately found that there is no ambiguity in the Patent Act requirement that an inventor listed on a patent application be a human being.[12] Thus, the USPTO has made clear that AI cannot be an inventor.

However, given that inventorship is limited to natural persons under U.S. law, AI's growing use has raised questions around whether AI-assisted inventions should receive patents. There are industries where AI is an important tool for the inventive processes including design and discovery, especially in industries that are heavily reliant on patent protection. For example, AI is becoming an indispensable tool in the chemical, biological, and pharmaceutical industries to facilitate cheaper, quicker, and more effective discovery and development, such as by proposing, refining and even "inventing" new molecules and chemicals through iterative machine learning processes. Automated chip design software ("ADS") tools increasingly use AI-powered tools for the complex process of designing semiconductors. The degree to which those discoveries made with the help of AI tools are patentable may be the next frontier at the intersection of AI and patent law. At industry roundtables conducted by CSIS, there was broad consensus across large and small biotechnology and technology companies – for applications across drug discovery, code generation, and material sciences – that AI-enabled inventions should be entitled to patent protection.[13]

The U.S. government has a key role to play in clarifying the rules of invention and patentability with the growing use of AI in the inventive process. Accordingly, following President Joe Biden's Executive Order on AI in October 30, 2023, the USPTO put out a notice and called for public comment on proposed "Inventorship Guidance for AI-Assisted Inventions" in February 2024.[14] The USPTO's guidelines are an important step towards clarifying key principles for AI-assisted inventions — namely, that inventors and joint inventors must be natural persons, that AI-assisted inventions are not categorically unpatentable for improper inventorship, and that there must be "significant contribution" by a human inventor to conception based on joint inventorship law.[15]

Some areas requiring clarification will emerge from the application of these guidelines to real-world patent applications. For example, the USPTO guidance lists various examples that illustrate patentability in situations where a human has made a significant contribution to an invention. However, the USPTO guidance does not explore certain gray areas, such as what might constitute the minimal requirements for human contribution to satisfy inventorship, or the threshold of "significant contribution" by a human when judged against AI's contribution. In addition, the USPTO guidance includes a disclosure requirement for the use of AI in the inventive process, but not for the use of other tools, such as computers and algorithms. What constitutes AI and to what degree it may contribute to a patentable invention are not clearly defined yet.[16] These uncertainties leave the door open for the courts.

03
AI AND COPYRIGHT

Similar to patents, the question at the intersection of copyrights and AI is: when creative works are produced, in whole or in part, using AI, should they be protected by copyright?

On the extreme end of the spectrum of copyrightability, a work can be generated with no human creativity and thus is not protectable. For example, the Ninth Circuit made clear that a photograph produced by a camera triggered by a monkey is not entitled to a copyright because the Copyright Act only recognizes human inventors.[17] At the other extreme, a work may be wholly created by a human and is protectable. The guidance on both is straightforward. The more difficult cases are those in between, and complex questions arise about where to draw the line between an AI-aided work that is and is not protectable by copyright law.

12 *Thaler v. Vidal* 43 F.4th 1207 (Fed. Cir. 2022).

13 *Supra* note 3.

14 See, Federal Register :: Inventorship Guidance for AI-Assisted Inventions

15 *Supra* see Section IV.

16 *Supra* note 3.

17 *Naruto v. Slater*, 2018 WL 1902414 (9th Cir. 2018). The famous case involved a selfie taken by a monkey in Naruto in Indonesia with the camera of the British nature photographer David Slater in 2011. The People for the Ethical Treatment of Animals ("PETA") commenced an action against Slater and his book publisher, claiming Naruto was the copyright owner of the selfie.

The U.S. Copyright Office issued several rulings recently on the question of when works generated using AI technology are protected under U.S. copyright law and, so far, applicants have not been able to convince the U.S. Copyright Office that the AI-generated components of their works are protectable.

Stephen Thaler again filed a lawsuit against the U.S. Copyright Office in response to the denial for the registration of an artwork created by his AI system a computer scientist and creator of an AI system he dubbed the "Creativity Machine," on the grounds that it lacked human authorship. The U.S. District Court upheld the decision of the U.S. Copyright Office.[18]

On the question of whether AI-generated works contain sufficient human authorship to be copyrightable, the U.S. Copyright Office provided its first analysis in its ruling in *Kashtanova*. That ruling narrowly interpreted the human authorship requirement and refused the registration of AI-generated images in a graphic novel, finding that detailed text prompts did not sufficiently constitute human authorship.[19] Consistent with its decision in *Kashtanova*, the U.S. Copyright Office also refused to register a work titled "Théâtre D'opéra Spatial," a two dimensional artwork, whose copyright application described a detailed, iterative creation process that involved inputting numerous text prompts and hundreds of rounds of revisions in Midjourney, a generative AI tool for image creation. The Review Board found this was insufficient to constitute human authorship. More recently, the U.S. Copyright Office also rejected the registration of a two-dimensional computer-generated image titled "Suryast," created by inputting an original photograph into a style transfer tool called RAGHAV, to produce a highly stylized version of the original photograph. The office found the work non-registerable "because [it] is a derivative work that does not contain enough original human authorship to support a registration." It is worth noting that both the Indian Copyright Office and the Canadian Copyright Intellectual Property Office have registered "Suryast" and recognized RAGHAV AI painting app as its co-author along with its human creator, Sahni.

In March 2023, the U.S. Copyright Office did issue guidance on registration of works generated by AI.[20] Along the lines of the decision it made, the U.S. Copyright Office clarifies that while technological tools can be a part of the creative process, "what matters is the extent to which the human had creative control over the work's expression and 'actually formed' the traditional elements of authorship," which it will determine on a case-by-case basis.[21] While the U.S. Copyright Office has so far taken a narrower view of what is required to constitute sufficient human authorship in an AI-generated work, the law is still unclear, as no court has yet addressed the issue.

04
COPYRIGHT INFRINGEMENT

The issue that is receiving the most attention at the intersection of AI and IP is copyright infringement. Recently, the U.S. Copyright Office issued a Notice of Inquiry ("NOI") soliciting public comments regarding the collection and curation of sources for AI datasets, the methodologies employed in training AI models with these datasets, and the necessity for obtaining permission or providing compensation to copyright owners when their works are incorporated into this process.[22] The inquiry received over 10,000 comments from the public and stakeholders which the U.S. Copyright Office is in the process of evaluating.

In the meantime, over a dozen lawsuits are pending in various jurisdictions across the U.S. in which copyright holders are advancing multiple theories of infringement against AI platforms, specifically, the Gen-AI models. Plaintiffs in these actions generally contend that Gen-AI models infringe upon copyrights through impermissible inclusion of copyrighted materials in training data. Plaintiffs have also alleged that Gen-AI outputs do or are likely to infringe copyrighted materials.

Some argue that AI-generated works are transformative, thereby falling under fair use protections. However, courts have yet to establish clear precedents in this area. The application of fair use to the data used for training AI models is still being debated, especially with regard to the balance between innovation and copyright protection.

18 *Thaler vs. Pertmutter*, 2023 (U.S. District Court of Columbia), at: https://caselaw.findlaw.com/court/us-dis-crt-dis-col/114916944.html.

19 See https://copyright.gov/docs/zarya-of-the-dawn.pdf.

20 See https://copyright.gov/ai/ai_policy_guidance.pdf.

21 *Supra*.

22 Notice of Inquiry, 88 Fed. Reg. 59942 (U.S. Copyright Office Aug. 30, 2023), https://www.regulations.gov/document/COLC-2023-0006-0001.

Several plaintiffs' cases have advanced direct and/or indirect infringement claims alleging that a Gen-AI model accessed and copied copyrighted material for the purpose of training the model.[23] Gen-AI models need substantial amounts of training data. For example, GPT-3 was trained on approximately 570 gigabytes of text data, derived from a diverse range of sources, including books, articles, and websites.[24] Some Gen-AI models employ techniques that "scrape" content from the internet, which may include potentially copyrighted content. However, the training that used by most Gen-AI models remains limited in public knowledge. Consequently, the viability of this infringement theory may vary depending on the facts and circumstances of each case.

There are some technical and economic arguments that are likely to surface in the ongoing copyright infringement disputes. For the question regarding the use and storage of datasets for training purposes, Gen-AI large language models need to break down text into smaller words and tokens for creating training datasets, and then correlate specific functions and linguistic data to tokens to probabilistically predict the next word given the previous words. Open AI has stated that the only thing stored in its model is the structure of the language itself, rather than the copyrightable expression of a given work.[25] An additional question would be about the incremental value of any specific input of data in terms of its contribution to the training of a model, given the large size of the training datasets. Finally, another question would be whether a market for licensing of the training datasets would be viable in the cost-vs-benefit tradeoff of creating such a market. In the meantime, various licensing deals are emerging in the industry for the use of certain data by Gen-AI model developers. For example, Google signed a $60 million annualized licensing deal with Reddit to access Reddit Data APIs.[26] Open AI struck a deal with various media companies and outlets including the Financial Times, The Associated Press, Axel Springer, and News Corp (a media company that owns The Wall Street Journal, the New York Post, and The Daily Telegraph) for the use of current and archived articles.[27] Members of the newly formed Dataset Providers Alliance are looking to streamline the licensing process, ensuring fair compensation for rights holders and high-quality data for AI companies. It remains to be seen if collective licensing schemes for specific AI training datasets are viable or will gain traction.

> ***"In the meantime, over a dozen lawsuits are pending in various jurisdictions across the U.S. in which copyright holders are advancing multiple theories of infringement against AI platforms, specifically, the Gen-AI models"***

Plaintiffs have also proposed theories of infringement that extend beyond the training phase of Gen-AI models. They contend that the operation of a given Gen-AI model constitutes an unauthorized derivative work, as it utilizes copyrighted materials in its outputs.[28] Additionally, plaintiffs maintain that the outputs generated by AI models can result in substantially similar works, which may constitute copyright infringement.[29] It remains to be seen whether or not any of these claims would hold in the courts. At the very least, it is clear that courts require plaintiffs to sufficiently allege similarity of the output of the models to plaintiffs'

23 For example, *Getty Images (US), Inc. v. Stability AI, Inc*., No. 1:2023cv01850 (S.D.N.Y. 2023), *Authors Guild et al vs. Open AI, Alter vs. Open AI*.

24 Brown, T. B., Mann, B., Ryder, N., Subbiah, M., Kaplan, J., Dhariwal, P., ... & Amodei, D. (2020). *Language Models are Few-Shot Learners*. In *Advances in Neural Information Processing Systems*, 33, 1877-1901.

25 Comment from Open AI, Re: Notice of Inquiry and Request for Comment [Docket No. 2023-06] (Oct. 30, 2023), COLC-2023-0006-8906.

26 See "Reddit signs AI content deal ahead of IPO," *Bloomberg,* February 16th, 2024, available at: Reddit Is Said to Sign AI Content Licensing Deal Ahead of IPO - Bloomberg.

27 See "Open AI's News Corp deal licenses content from WSJ, New York Post, and more," *The Verge,* May 22, 2024, available at: OpenAI's News Corp deal licenses content from WSJ, New York Post, and more - The Verge.

28 See *Authors Guild v. OpenAI, Inc*., No. 1:23-cv-08292 (S.D.N.Y. filed Sept. 19, 2023); *Andersen v. Stability AI Ltd*., No. 3:23-cv-00201 (N.D. Cal. Oct. 30, 2023).

29 See *Doe 1 v. GitHub, Inc*., No. 4:22-cv-06823-JST (N.D. Cal. filed Nov. 3, 2022); *Getty Images, Inc. v. Stability AI, Inc.*, No. 1:23-cv-00135-JLH (D. Del. filed Feb. 3, 2023); *Concord Music Grp., Inc. v. Anthropic PBC*, No. 3:23-cv-01092 (M.D. Tenn. filed Oct. 18, 2023); *Andersen v. Stability AI Ltd.*, No. 3:23-cv-00201 (N.D. Cal. filed Oct. 30, 2023); *The N.Y. Times Co. v. Microsoft Corp*., No, 1:23-cv-11195, (S.D.N.Y. filed Dec. 27, 2023).

works.[30] Courts have also requested evidence of sufficient economic injury, about a potential impact on the market for the copyrighted work.[31]

In the backdrop of the evolving litigation and licensing landscape, one of the issues for enterprises and customers of Gen-AI models is the indemnity protection against potential copyright infringement. While several AI providers indemnify enterprise and developers from copyright claims of their AI services, the scope this indemnity protection is often limited.[32] For example, the indemnification may only cover third-party infringement claims related to outputs, but not for claims that the training data and inputs were infringing.

The numerous ongoing copyright infringement lawsuits mark a critical juncture that is poised to shape the relationship between content creators and AI models. Until these are resolved, individuals and organizations engaging with AI platforms should be cognizant of the uncertainty and the risk of copyright liability. The forthcoming recommendations from the U.S. Copyright Office to Congress may provide more guidance towards the resolution of these pending issues.

"In the backdrop of the evolving litigation and licensing landscape, one of the issues for enterprises and customers of Gen-AI models is the indemnity protection against potential copyright infringement"

30 See, example, Silverman vs. Meta, No. 4-23-cv-03416-KAW.

31 Id.

32 See Regina Sam Penti, Georgina Jones Suzuki & Derek Mubiru, "Trouble Indemnity: IP Lawsuits In The Generative AI Boom," *Law360* (Jan. 3, 2024), https://www.law360.com/articles/1779936/trouble-indemnity-ip-lawsuits-in-the-generative-ai-boom.

05
CONCLUSION

In summary, the intersection of AI and IP presents a complex and evolving landscape for inventors, creators, and users of AI tools. As AI technologies increasingly permeate creative and inventive domains, significant questions arise regarding the patentability of AI-assisted inventions and the copyrightability of works generated with the help of AI. The ongoing legal disputes surrounding copyright infringement further underscore the need for a clear framework that delineates the rights and responsibilities of content creators, AI developers, and users.

The U.S. Copyright Office's efforts to develop guidelines and the recent public inquiries reflect an acknowledgment of the pressing challenges posed by AI in the realm of IP. However, the lack of established legal precedents, particularly concerning the classification of AI-generated outputs and the utilization of copyrighted materials for training purposes, leaves much ambiguity in the current legal framework. As litigations unfold, the outcomes may set critical precedents that will shape the future of both copyright and patent law.

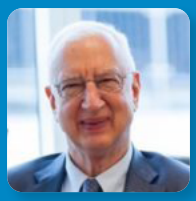
Moreover, as various licensing agreements emerge within the industry, the question of fair compensation for content creators becomes increasingly pertinent. The potential for collective licensing schemes for AI training datasets may pave the way for a more equitable balance between fostering innovation and protecting the rights of original creators.

Ultimately, it is imperative for stakeholders — including legal practitioners, AI developers, and policymakers — to remain engaged in this discourse. By proactively addressing the implications of AI on intellectual property rights, we can work toward a more cohesive and adaptive legal framework that not only encourages technological advancement but also respects the fundamental rights of human creators. The ongoing evolution of this dialogue will be crucial in navigating the challenges and opportunities that lie ahead in the age of artificial intelligence. ■

"The U.S. Copyright Office's efforts to develop guidelines and the recent public inquiries reflect an acknowledgment of the pressing challenges posed by AI in the realm of IP"


PATENT

PATENT PROTECTION: A CRUCIAL ANTITRUST TOOL FOR INCREASING INNOVATION



BY HON. PAUL R. MICHEL (RET.)

& MATTHEW J. DOWD

Hon. Paul R. Michel, Former Chief Judge, U.S. Court of Appeals for the Federal Circuit; Matthew J. Dowd, founder and managing partner, Dowd Scheffel PLLC.

In a little under two years, the United States will celebrate the Semiquincentennial, 250 years from the signing of the Declaration of Independence. Over those two and a half centuries, the world witnessed an upstart, nascent group of thirteen colonies grew into one of the most innovative nations in history. The United States became the leading creator of life-changing inventions, producing far more Nobel laureates than any country. A quarter-way through the 21st century, the United States is still leading in many technological areas, but remaining competitive, particularly in critical technologies, is becoming increasingly difficult in the global arena, especially in areas of artificial intelligence, personalized medicine, and next-generation communications technologies.

Most discussion about improving the innovation ecosystem centers on the patent system, and for good reason. No other legal regime has proven to be as effective at incentivizing innovation as the patent system, and until recently, the U.S. patent system was the long-accepted gold standard. It established a reasonable balance of the *quid pro quo*: Granting a limited exclusive right in exchange for disclosing the invention and making it publicly available (in contrast to trade-secret protection, which would keep innovation details hidden from the public).

An equally important — if not more important — role of the patent system is to facilitate investment and commercial transactions for smaller and mid-sized innovation-focused firms. Rather than simply providing an incentive to innovate in the first place, patent protection provides the needed legal and economic structures that enable smaller innovation-focused firms to obtain the necessary financial investments and to enter into transactions with larger firms that may be less focused on innovation but better equipped to commercialize innovation.

By facilitating these investment and commercial transactions, patents should be an effective antitrust tool, available to competitors to ensure that the established, market-dominant companies do not monopolize markets. Unfortunately, during the last almost twenty years, we have witnessed a significant weakening of the U.S. patent system, through Supreme Court decisions, flawed legislation that created the Patent Trial and Appeal Board ("PTAB"), and continued lobbying by entrenched, market-dominant corporations that want to maintain their dominance by weakening the patent system, thereby making it more difficult for upstart innovators to break into established markets.

In this brief essay, we highlight how the patent system's underappreciated role of facilitating investment, licensing, manufacturing, and commercial transactions for innovation-focused small and medium-sized enterprises ("SMEs") can and should be better recognized as a key benefit of patents, as well as an important tool in antitrust policy considerations. Patents are too often viewed myopically as detriments to competition, but that erroneous view fails to consider competition more holistically, beyond the near term. We also briefly describe how the weakening of the U.S. patent system impedes competition and puts smaller startups at a competitive disadvantage. Weaker patents make it more difficult for innovative startups to disrupt large, market-dominant corporations. We also highlight recent legislative efforts to fix many of the problems imposed on the patent system. While no legislation is perfect, several pending bills in the U.S. Congress would restore the competitive balance and improve the innovation ecosystem.

01

INNOVATION IS BECOMING INCREASINGLY EXPENSIVE IN CRITICAL TECHNOLOGIES

Innovating has always been an expensive and risky endeavor. Modern technologies now ubiquitous, with some obsolete, were the result of earlier cutting-edge research that was made possible only by innovators and their financial supporters willing to devote time, money, and other resources, and usually with no guarantee of any financial return.

The risk-reward calculus has only become starker in the 21st century when it comes to contemporary critical technologies. According to one report, "[o]ver the past decade, the average cost to bring a new innovation to market has increased by 67%."[2]

Take as one example research and development in artificial intelligence. Private sectors will need to invest hundreds of millions of dollars in the development of AI technologies.[3] Some of this will come in the form of developing new advanced chips and processors. Other R&D will focus on AI training models, such as neural networks or support vector machines. Expensive R&D is not limited to the private sector. AI R&D investments by U.S. federal entities have grown from $560 million in 2018 to approximately

2 Gary Drenik, *How AI is Accelerating Innovation In Research and Development*, Forbes (July 18) https://www.forbes.com/sites/garydrenik/2024/06/18/how-ai-is-accelerating-innovation-in-research-and-development/.

3 See Dylan Thomas, Maira Imtiaz & Annie Sabater, *Private Equity-backed Investment Surge in Generative AI Defies 2023 Deal Slump*, S&P GLOBAL (Mar. 2024) (noting that private equity-backed investment in generative AI was $927.7 million in Q3 2023), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/private-equity-backed-investment-surge-in-generative-ai-defies-2023-deal-slump-80625128; see also Ana Swanson & Erin Griffith, *American Firms Invested $1 Billion in Chinese Chips, Lawmakers Find*, New York Times (Feb. 2024), https://www.nytimes.com/2024/02/08/business/economy/china-chips-house-select-committee.html.

$2.9 billion in each of 2022 and 2023, with it expected to exceed $3 billion in 2024.[4] Similar amounts are being invested by non-U.S. governments, including China and European countries.[5]

R&D in other critical technologies exhibits a similar demand for capital-intensive support. The costs to develop personalized medicines for devastating cancers and other diseases can easily run into the hundreds of millions of dollars, if not more.[6] Gene-editing-based treatments will be able to treat previously untreatable genetic-based conditions, such as sickle cell anemia, which disproportionately affects individuals of African descent.[7] But those treatments are extraordinarily expensive to develop and implement, and innovators and their investors need to recoup a reasonable return on their investments so that they can then continue their innovative contributions.

In a similar vein, U.S. national security is increasingly dependent on employing the most cutting-edge technologies. Those technologies must be developed by companies that can provide stable, secure support to the U.S. government. And again, those companies must be permitted to earn a reasonable profit in order to support the necessary R&D.

As R&D becomes more expensive, investors will naturally assess whether to invest in companies involved in the riskier areas, as opposed to investing in less risky options. Capital investments can be moved to less risky domestic options, such as entertainment and retail opportunities. Investors could also choose to move their capital to non-U.S. investments, to countries that provide innovation ecosystems that are friendlier to startups. Policy makers should want to avoid that outcome and should do everything reasonably possible to promote the progress of entrepreneurial firms.

02

PATENTS FACILITATE CAPITALIZATION AND COMMERCIALIZATION, PARTICULARLY FOR INNOVATION-FOCUSED STARTUPS AND MARKET DISRUPTERS

The conventional view of patents is that they create an incentive to invent and an incentive to disclose. That view is well-known and remains valid, but more importantly patents facilitate capitalization and commercialization, particularly for SME entrepreneurial firms. Fortunately, we are seeing a renewed recognition of a patent's important role in post-grant capitalization, licensing, manufacturing, and commercialization activities.[8]

To begin, patents can reduce transaction costs between entrepreneurial SMEs and larger established corporations. Robust, reliable patent grants enable innovative SMEs to share their innovations (through licensing) with more established companies that are better structured to commercialize the innovations. The patents provide reasonable assurance to the innovative SME that the large corporations who want to expropriate the SME's innovations will pay a fair price. As the certainty in patent protection decreases, however, the transaction costs for innovative SMEs increase because they need to be more cautious with disclosing their innovation.

4 Artificial Intelligence Research and Development Interagency Working Group, *2020-2024 Progress Report: Advancing Trustworthy Artificial Intelligence Research and Development* (July 2024), https://www.nitrd.gov/pubs/AI-Research-and-Development-Progress-Report-2020-2024.pdf.

5 Thomas Colvin, et al., *A Brief Examination of Chinese Government Expenditures on Artificial Intelligence R&D*, Science & Technology Policy Institute (February 2020), https://cdn01.dailycaller.com/wp-content/uploads/2020/02/IDA-Document-Under-Embargo.pdf.

6 Vinay Prasad & Sham Mailankody, *Research and Development Spending to Bring a Single Cancer Drug to Market and Revenues After Approval*, 177 JAMA Internal Med. 1569 (Sept. 2017), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5710275/; see also Michael Schlander, et al., *How Much Does It Cost to Research and Develop a New Drug? A Systematic Review and Assessment*, 39 Pharmacoeconomics 1243 (2021) ("Estimates of total average capitalized pre-launch R&D costs varied widely, ranging from $161 million to $4.54 billion (2019 US$). Therapeutic area-specific estimates were highest for anticancer drugs (between $944 million and $4.54 billion)."), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8516790/.

7 U.S. Food & Drug Administration, *FDA Approves First Gene Therapies to Treat Patients with Sickle Cell Disease*, FDA (Dec. 8, 2023), https://www.fda.gov/news-events/press-announcements/fda-approves-first-gene-therapies-treat-patients-sickle-cell-disease.

8 See generally Jonathan M. Barnett, Innovators, Firms, and Markets: The Organizational Logic Of Intellectual Property (2021); see also Randall R. Rader & Benjamin J. Christoff, Patent Law In a Nutshell 10-11 (3d ed. 2018) ("The incentives of patent law do some of their best work after invention, disclosure, and issuance of a patent. At that point, the patent system enables an inventor to raise capital to market and manufacture the invention.").

Second, patent protection also reduces financing costs for innovative SMEs. As detailed by Professor Jonathan Barnett, "IP rights can reduce financing costs incurred by an entrepreneurial firm that wishes to integrate forward into some or all commercialization functions without relying on the infrastructures, reputational capital, and scale economics of an existing dominant firm."[9] In other words, even after the innovation is created and disclosed in a patent, IP rights enable SMEs to grow into larger, more integrated companies with commercialization and/or manufacturing capabilities.

When patents are understood to be a tool for facilitating licensing, manufacturing, and other commercialization activities, it is easier to understand why larger, more established companies in many industries no longer favor strong patent protection. In many industries (even many technology-intensive industries, with the pharmaceutical and biotech industries being notable exceptions), "larger firms tend to have lower-cost access to non-patent mechanisms for extracting returns from innovations."[10] In other words, larger corporations — think Cisco, Google, Apple, and the like — can rely on their market dominance and vertically integrated structures to ensure reasonable financial returns on their R&D efforts.

Moreover, larger firms do not need to rely on IP's roles of facilitating capitalization and commercialization. They already have ready access to the capital markets, usually through public stock markets. They also typically have internal means of commercializing their products (unlike SMEs), through vertical integration of manufacturing, retail, marketing, and other commercialization capabilities.

When viewed this way, patents are easily seen as an effective antitrust tool.[11] Reliable patent protection can allow startups to enter markets and disrupt entrenched firms. If, however, patent protection is unreliable and there is no reasonable chance of enjoining infringing activity, the market-dominant companies will remain emboldened to continue their predatory-infringement practices.[12] Large, market-dominant companies that engage in predatory infringement can do so with little risk of near-term liability, as courts are unlikely to stop infringing activity and any order to pay monetary damages is years down the road, which allows the large companies to take more market share using expropriated technologies.

03
THE WEAKENING OF A CRUCIAL ANTITRUST TOOL

Despite the common objectives of patent and antitrust law to increase innovation and increase consumer welfare, we have seen a continued weakening of patent rights spanning almost the past two decades. We have documented this trend elsewhere, as have others.[13] We provide a brief overview here.

A. The Supreme Court Overlooks the Pro-Competition Role of Patents by Repeatedly Weakening Patent Rights

The Supreme Court's rewriting of modern patent law's basic doctrines began with its 2006 *eBay v. MercExchange*[14] decision that drastically limited the availability of injunctions for patent infringement. That change was followed a year later by *KSR v. Teleflex*,[15] which rejected the Federal Circuit's test for obviousness. Those two decisions destabilized the innovation ecosystem and enabled entrenched market-dominant companies to adopt a more dismissive approach to the patent rights of smaller, innovative companies looking to either enter the market or obtain a reasonable recoupment of their R&D investment.

9 Barnett, *supra*, at 38.

10 Barnett, *supra*, at 139.

11 See e.g. Greg Dolin, *Resolving the Patent-Antitrust Paradox: Promoting Consumer Welfare Through Innovation* (May 2013) ("Whereas antitrust law seeks to promote competition mostly on price, patents promote competition by incentivizing new innovation, product differentiation, manufacturing and process innovations, and influencing consumer tastes."), https://cip2.gmu.edu/wp-content/uploads/sites/31/2013/08/Dolin-Patent-Antitrust-Paradox.pdf.

12 See e.g. Kristen Jakobsen Osenga, *"Efficient" Infringement and Other Lies*, 52 Seton Hall L. Rev. 1085 (2022).

13 See Paul R. Michel & Matthew J. Dowd, *From a Strong Property Right to a Fickle Government Franchise: The Transformation of the U.S. Patent System in 15 Years*, 69 Drake L. Rev. 1 (2021); see also Paul R. Michel & Matthew J. Dowd, *The Need for "Innovation Certainty" at the Crossroads of Patent and Antitrust Law*, CPI Antitrust Chronicle (Apr. 2017), https://www.competitionpolicyinternational.com/wp-content/uploads/2017/04/CPI-Michel-Dowd.pdf; Gene Quinn, *The Supreme Crusade to Weaken Patent Rights in America*, IP Watchdog (July 16, 2018).

14 See *eBay Inc. v. MercExchange, L.L.C.,* 547 U.S. 388 (2006).

15 See *KSR International Co., v. Teleflex Inc.,* 550 U.S. 398 (2007).

The Court's *eBay* decision effectively rejected the "exclusive" right set forth in the U.S. constitution. Subsequent research has exposed the flaw with the Court's basic holding as well as the subsequent application of *eBay* by district courts.[16] Availability of injunctions for owners successful in infringement suits declined, gradually but steadily, particularly from 2012 onward.[17] The Court's decision — and particularly Justice Kennedy's concurrence — gradually gained traction in the district courts. The end result was that largely only directly competing product producers can expect permanent injunctions.

In one of the most recent comprehensive studies, it was shown that "the *eBay* ruling reduced the annual percent of patent cases in which a motion for an injunction was sought."[18] The same study also shows that, post-*eBay*, district courts discriminate against certain patent owners, such as licensing entities. "Moreover, not only did the *eBay* decision result in operating companies scaling back their requests for permanent injunctions, but they are also shown to have scaled back the requests for preliminary injunctions."[19]

"In one of the most recent comprehensive studies, it was shown that "the eBay ruling reduced the annual percent of patent cases in which a motion for an injunction was sought."

Further, patent owners who actively license their IP, such as universities and research clinics, largely stopped asking for injunctions, with their requests decreasing by 85 percent.[20] The decimation of injunctive relief has undermined the ability of entrepreneurial SMEs from participating in the licensing and commercialization markets. Without a reliable right to prevent a large corporation from expropriating innovation and know-how, smaller and more innovative SMEs must be more cautious when disclosing their intellectual property.

The Supreme Court's *KSR* decision similarly changed the innovation landscape. District courts and the USPTO have applied *KSR* broadly, raising the bar for showing that inventions are nonobvious and creating massive uncertainty for thousands and thousands of already-issued patents.

Next came the Supreme Court's perhaps most disruptive intervention. In 2010-2014, four cases — *Bilski*,[21] *Mayo*,[22] *Myriad*,[23] and *Alice*[24] — added confusion and uncertainty to patent-eligibility jurisprudence under 35 U.S.C. § 101. The Court's decisions made vast swaths of innovation — including life-saving medical diagnostics — now ineligible for patent protection, regardless of how novel or nonobvious the technology was. Many of those same inventions remain eligible in all of Europe and most of Asia, including China.

Examples illustrating the § 101 problem abound, but two recent Federal Circuit decisions underscore the confusion, with the court reaching conflicting results about whether a digital camera constitutes patentable subject matter under § 101. In 2021, the court ruled that a claimed digital camera was not patentable subject matter, despite the claim being plainly directed to tangible digital camera.[25] Only three years later, in a different case, the court held

16 Adam Mossoff, *Injunctions for Patent Infringement: Historical Equity Practice Between 1790 - 1882* (June 14, 2024), forthcoming in the Harvard Journal of Law & Technology (2025), https://ssrn.com/abstract=4870351; Hon. Paul R. Michel & Matthew J. Dowd, *Understanding the Errors of eBay*, The Criterion Journal on Innovation (Feb. 2017).

17 Christopher B. Seaman, *Permanent Injunctions in Patent Litigation After eBay: An Empirical Study*, 101 Iowa L. Rev. 1949 (2016).

18 Kristina M.L. Acri née Lybecker, *Injunctive Relief in Patent Cases: The Impact of eBay,* Colorado College Working Paper 2024-01 (2024), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4866108.

19 *Id.* at 24.

20 *Id* at 10.

21 *Bilski v. Kappos,* 561 U.S. 593 (2010).

22 *Mayo Collaborative Services v. Prometheus Laboratories, Inc.,* 566 U.S. 66 (2012).

23 *Association for Molecular Pathology, v. Myriad Genetics, Inc.,* 569 U.S. 576 (2013).

24 *Alice Corporation Pty. Ltd., v. CLS Bank International,* 573 U.S. 208 (2014).

25 *Yu v. Apple Inc*., 1 F.4th 1040, 1041-46 (Fed. Cir. 2021).

that a "portable point of view digital video camera" did satisfy § 101.[26] Those two decisions are irreconcilable and epitomize the uncertainty created by the Supreme Court's recent foray into § 101 law.

The current Supreme Court has disappointingly exhibited the same patent-skeptical approach. The most notable example is *Amgen v. Sanofi*, decided in 2023.[27] The opinion completely overlooks how broad disclosures in patents can spur innovation and enable innovators to license those rights as needed.[28]

B. The America Invents Act of 2011 and the Creation of the PTAB

In 2011, the U.S. innovation ecosystem underwent a seismic shift when Congress passed the America Invents Act, which created the PTAB. Thirty years after it created the Federal Circuit, Congress enacted a law that effectively undid its earlier efforts of increasing certainty and predictability in national patent law.

The PTAB has upended the IP transactional environment, whether it involves licensing, enforcement, development, or commercialization. AIA proceedings challenging a patent frequently run in parallel with district court suits, adding expense, distraction, and delay for patent owners. Unsurprisingly, invalidation rates at the PTAB have been significantly higher than in the courts. The AIA yielded patent-skeptical PTAB reviews, a weakened presumption of validity, an easier path for infringers to invalidate valuable patents, and erased the standing requirement. One-way estoppel provisions let court judgments be erased by later PTAB decisions.

Again, it is intriguing to compare Congress's apparent disparate treatment of patents compared to other IP. With the PTAB, Congress created a forum whose sole mandate is to invalidate patents. In contrast, for copyrights, Congress created the Copyright Claims Board ("CCB"), a three-member tribunal within the Copyright Office that provides an efficient option for copyright owners to resolve claims up to $30,000.[29] Thus, in contrast to its creation of the PTAB, Congress created a forum for copyright owners to facilitate copyright's objective "To promote the Progress of Science," *i.e.*, the creative arts.

C. The "Patent Troll" Myth that Won't Go Away

In 2002, Peter Detkin, then an attorney at Intel, is said to have coined the "patent troll" term to describe patent owners who don't practice the inventions in the patents. Amazingly, more than twenty years later, lobbyists and advocates are still invoking this myth, despite much research showing that it isn't the case. Of course, we know that some of the greatest innovators in history — including university researchers — could be called a "patent troll."

A good part of the "patent troll" myth stems from the early 2000s when the Federal Trade Commission and the National Research Council weighed in with notably anti-patent views.[30] The takeaway from these reports was generally that the Federal Circuit was supposedly hampering and stifling competition. Move forward twenty years, and the myth-based campaigns continue today. Big tech mega-giants (sometimes referred to as FAANGS[31]) picked up support from large banks, retailers, and automotive companies. Similarly, standard-essential patent owners are accused of being patent "hold-outs," even though this academic theory was refuted by actual experience.

"Again, it is intriguing to compare Congress's apparent disparate treatment of patents compared to other IP. With the PTAB, Congress created a forum whose sole mandate is to invalidate patents"

Of course, asserting a patent against an infringer or refusing to capitulate to an infringer's licensing demands should hardly warrant pejorative labels, such as "troll" or "hold-

26 *Contour IP Holding LLC v. GoPro, Inc*., No. 22-1654 (Fed. Cir. Sept. 9, 2024).

27 *Amgen Inc. v. Sanofi,* 143 S. Ct. 1243 (2023).

28 On a related point, it is curious how the Supreme Court can be consistently critical of patent rights while at the same time be far more generous to trademark and copyright owners. See e.g. *Jack Daniel's Properties, Inc. v. VIP Products, LLC*, 143 S. Ct. 1578 (2023); *Andy Warhol Foundation for the Visual Arts, Inc. v. Goldsmith*, 598 U.S. 508 (2023).

29 Copyright Alternative in Small-Claims Enforcement Act of 2020 ("CASE Act of 2020"), H.R. 2426, 116th Cong. §1 (2020).

30 Federal Trade Commission, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy* (Oct. 2003), https://www.ftc.gov/reports/promote-innovation-proper-balance-competition-patent-law-policy.

31 FAANG stands for the five major tech companies: Facebook, Amazon, Apple, Netflix, and Google.

out." It is simply protecting a presumptively valid property right, in the face of infringement — and too often predatory infringement.

D. Other Narratives Seek to Weaken Patents, to the Benefit of Entrenched Market-Dominant Companies

Beyond the above issues, advocates seeking to further devalue patent protection continue to push narratives that will only strengthen the dominance of the larger, more established companies at the expense of more innovative SME firms. Such an outcome should concern anyone who is troubled by large corporations' monopolistic tendencies. These narratives will also damage the longer-term innovation ecosystem, as it becomes less hospitable for the innovative SMEs that produce the majority of U.S. innovation.

For instance, the current Biden-Harris administration is aggressively pushing for an unprecedented and controversial implementation of march-in rights under the Bayh-Dole Act.[32] As experienced commentators have observed, "[u]nder the Administration's property confiscation proposal, unelected, unaccountable, bureaucrats in government will be allowed to seize a company's intellectual property if they decided, for whatever reason is politically popular at the time, that they do not like how a company is using that property."[33] This radical approach will devastate the IP licensing environment, particularly given that "universities create, on average, three new start-ups that produce two new products every day."[34]

Standard essential patents ("SEPs") and the right-to-repair doctrine are two additional areas where certain groups are working to advance their "weak patents" agenda. SEPs have long been a target, with the misguided belief that an owner of an SEP should never be granted injunctive relief. In June 2022, the USPTO, the National Institute of Standards and Technology, and the U.S. Department of Justice disappointingly withdrew the *2019 Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments*,[35] which offered an extremely reasonable approach to FRAND licensing of SEPs and the availability of injunctions for SEP owners.

On the right-to-repair doctrine, consumer-rights advocates have pushed legislation that could require open access to proprietary tools and technology, in view of electronics and software systems being more integrated into consumer products, such as automobiles and farming equipment.[36] No doubt balance is needed in these contexts, but it is alarming, though not surprising, that the large, entrenched players continue their predictable campaign to weaken IP rights.

Finally, a few academics have recently advanced the entirely unsupported argument that the International Trade Commission ("ITC") is an unnecessary forum for patent enforcement. This argument is plainly a solution in search of a problem. The ITC is the one forum that offers at least some patent and IP owners a fast and thorough option for enforcing their rights.

> ***Standard essential patents ("SEPs") and the right-to-repair doctrine are two additional areas where certain groups are working to advance their "weak patents" agenda"***

32 Request for Information Regarding the Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights, 88 Fed. Reg. 85,593 (Dec. 8, 2023).

33 Brad Watts & Matt Furlow, *Biden's March-In Rights Proposal Risks CHIPS Investments,* U.S. Chamber of Commerce (July 2024), https://www.uschamber.com/intellectual-property/bidens-march-in-rights-proposal-risks-chips-investments.

34 *Id.*; see also Hideki Tomoshige & Sujai Shivakumar, Center For Strategic & International Studies, *The Use of March-In Rights Could Undermine Innovation and National Security* (May 23, 2024) ("[E]mploying march-in rights as a means of price control creates an uncertain environment surrounding the commercialization of university research, given the lack of clear guidelines for federal officials when it comes to determining whether the market price of an innovation is 'unreasonable' or 'extreme and unjustified.'"), https://www.csis.org/analysis/use-march-rights-could-undermine-innovation-and-national-security.

35 https://www.justice.gov/opa/pr/justice-department-us-patent-and-trademark-office-and-national-institute-standards-and.

36 Sarah Kulik, Brian H. Pandya, & Joseph Robert Welsh, *Illinois Federal Court Clears Hurdles of Aftermarket Right-to-Repair Class Action*, American Bar Association (July 29, 2024), https://www.americanbar.org/groups/antitrust_law/resources/newsletters/federal-court-clears-hurdles-right-to-repair/.

04

IMPROVEMENTS TO PATENT LAW WILL REVITALIZE INVESTMENT, INNOVATION, AND COMPETITION

As each year passes, the U.S. innovation economy is increasingly dependent on intellectual property, especially IP developed by SMEs. According to the USPTO, in 2019, IP-intensive industries generated $7.8 trillion in U.S. GDP and supported over one in three U.S. jobs.[37] Action is therefore needed to ensure that the innovation ecosystem is restored to a status where innovative SMEs can thrive and not be overwhelmed by the large, market-dominant corporations that view strong IP as a hindrance to their desired market domination.

Fortunately, we are seeing increased support for innovative SMEs and for improving the innovation ecosystem. The U.S. Chamber of Commerce and the Council for Innovation Promotion ("C4IP") are both advocating for re-adjusting policy in favor of reliable and valuable patents.[38] So have other organizations, including the Association of University Technology Managers, the Licensing Executives Society, and the Heritage Foundation. They augment on-going work of the Innovation Alliance, the Coalition for 21st Century Patent Reform, the National Security Commission on AI, and the Center for Strategic and International Studies. Additionally, the recently formed Inventors Defense Alliance should bolster the effort to improve the U.S. innovation ecosystem.[39]

As for proposed legislative fixes, several Congress members have taken the laboring oar and introduced proposed legislation that would restore reliability to U.S. patent protection. Senators Coons and Tillis introduced the Patent Eligibility Restoration Act ("PERA") to "restore patent eligibility to important inventions across many fields, while also resolving legitimate concerns over the patenting of mere ideas, the mere discovery of what already exists in nature, and social and cultural content that everyone agrees is beyond the scope of the patent system."[40] Senators Coons and Tillis also introduced the PREVAIL Act, which seeks to correct numerous design defects in the post-grant provisions of the America Invents Act.[41]

More recently, in July 2024, Senators Coons and Cotton introduced the Realizing Engineering, Science, and Technology Opportunities by Restoring Exclusive (RESTORE) Patent Rights Act of 2024, "a bipartisan, bicameral bill that would restore the presumption that courts will issue an injunction to stop patent infringers, strengthening protections for U.S. inventors, entrepreneurs, universities, and startups."[42] The House companion bill was introduced by Representatives Moran and Dean.

> ***"Fortunately, we are seeing increased support for innovative SMEs and for improving the innovation ecosystem"***

37 https://www.uspto.gov/sites/default/files/documents/uspto-ip-us-economy-third-edition.pdf.

38 C4IP's advisory board includes former Chief Judge Paul R. Michel and former Judge Kathleen O'Malley.

39 http://inventorsdefense.org.

40 https://www.tillis.senate.gov/2023/6/tillis-coons-introduce-landmark-legislation-to-restore-american-innovation.

41 Promoting and Respecting Economically Vital American Innovation Leadership Act, S. 2220; see also https://www.coons.senate.gov/imo/media/doc/prevail_act_fact_sheet.pdf.

42 https://www.coons.senate.gov/news/press-releases/senator-coons-colleagues-introduce-bipartisan-bicameral-bill-to-restore-injunctive-relief-for-patent-infringement.

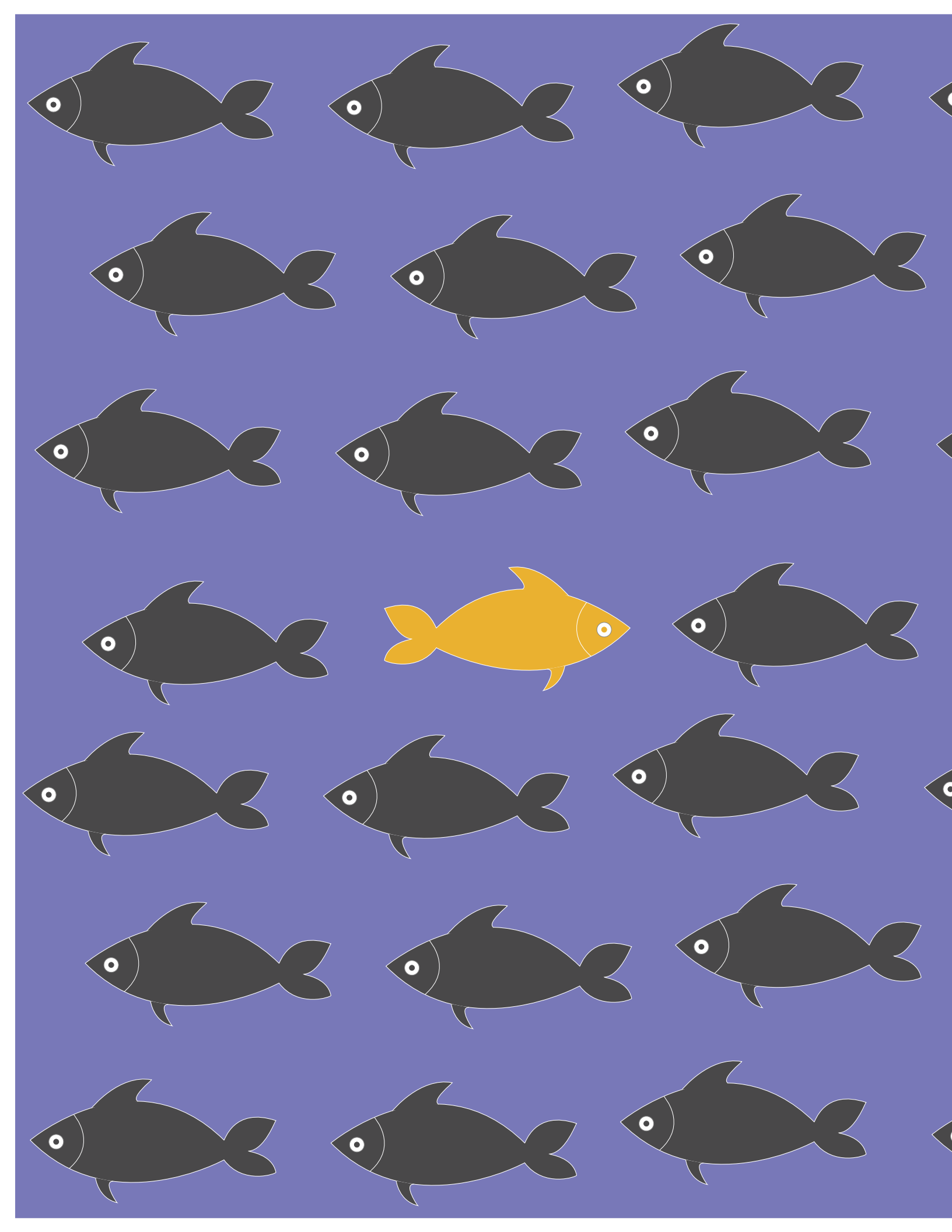
Representative Massie has introduced H.R. 8134, Restoring America's Leadership in Innovation Act of 2024 ("RALIA").[43] His bill is more aggressive in that it "allows inventors to get injunctions again against intellectual property thieves, restores inventors' rights to defend their inventions in court by abolishing the Patent Trial and Appeal Board, and ends the automatic publication of patent applications unless a patent is granted."[44]

No legislation is perfect, but it is clearly time to modernize the Patent Act — to catch up with developments in technology, to modify judge-made doctrines that conflict with the intent of Congress, and to implement sound patent policy for our national economy and global leadership in technology. Strengthening patent protection will improve the innovation ecosystem and will provide a natural countermeasure to business practices that become anticompetitive. ■

"Representative Massie has introduced H.R. 8134, Restoring America's Leadership in Innovation Act of 2024 ("RALIA")"

43 https://massie.house.gov/news/documentsingle.aspx?DocumentID=395632.

44 *Id.*



AN UNCONVENTIONAL VIEW OF INTELLECTUAL PROPERTY AND ANTITRUST POLICY

BY JONATHAN M. BARNETT

Torrey H. Webb Professor of Law, Gould School of Law, University of Southern California. This contribution reflects in part remarks delivered by the author at the LeadershIP event at the Center for Strategic and International Studies in April 2024 and at the Information Technology and Innovation Foundation in May 2023.

01 INTRODUCTION

It is common to view IP rights, and patents in particular, as a "second-best" solution to the free-rider problem that afflicts innovation markets. Following this view, IP rights provide a monopoly franchise to incentivize innovation that would not otherwise take place due to the gap between the high costs and risks of invention and the low costs and risks of imitation. The deadweight losses borne by consumers and the increased transaction costs (licensing and litigation-related) borne by subsequent improvers are the unfortunate price that must be borne to sustain private investment in R&D that would otherwise be exposed to expropriation by second-movers. This "apologetic" view of the IP system appears, whether explicitly or implicitly, throughout much of IP jurisprudence, antitrust agencies' policy statements on IP licensing and enforcement, and the economic and legal academic literature on innovation markets and competition policy.

This conventional view of the IP system can explain *part* of the function of IP rights in a market economy that relies to a substantial extent on private investment to sustain the innovation and commercialization process. However, it is incomplete and, as a result, systematically biases IP policy discussions toward reducing the scope and strength of IP rights, which in turn runs the risk that IP protection may fall short of

the levels necessary to support efficient resource allocation in innovation markets.

The conventional view assumes an inherent tension between innovation policy, which values IP rights as a mechanism to incentivize R&D investment, and competition policy, which views IP rights as a monopoly entitlement that raises entry costs and drives a wedge between price and marginal cost. As I will argue, this view understates the value, and misappreciates the economic functions, of IP rights in technology markets. In particular, this view relies on an antagonism between innovation and competition policy that is illusory or overstated in a broad range of circumstances once the functions played by IP rights in an innovation-based market economy are more fully appreciated.

02
THE DUAL FUNCTIONS OF IP RIGHTS

Following the conventional view, IP rights primarily play an *exclusionary* function that blocks unauthorized users. As a matter of static analysis, this is an inherently anticompetitive outcome that blocks actual and potential rivals and, given the "nonrivalrous" nature of intangible goods[2], inefficiently raises price above marginal cost. The primary oversight of the conventional view is that it overlooks the *enabling* function of IP rights, which not only incentivizes innovation but provides the legal infrastructure that supports complementary transactions that are necessary to convert innovations into commercially viable products or services.

These complementary transactions involve entities that supply commercialization inputs without which an innovation will sit on the proverbial shelf — a corporate lab, home workshop, or academic journal — and fail to generate economic and other benefits. These inputs range from the financing supplied by venture-capital investors to the production expertise supplied by a contract manufacturer to the distribution infrastructure supplied by a large multinational corporation. As a matter of dynamic analysis, the combination of innovation and non-innovation inputs generates long-term economic gains that typically overwhelm the short-term economic gains that arise from driving price toward marginal cost.

Why are IP rights often so critical in enabling interactions between innovators and the outside suppliers of the non-innovation inputs necessary to complete the commercialization process?

The answer is found in a thought exercise presented in a famous paper published in 1962 by Kenneth Arrow.[3] In that exercise, Arrow supposes that an innovator seeks to sell a valuable invention but cannot enter into negotiations with potential buyers without fully disclosing the details of the invention. As Arrow shows, the innovator will be unable to sell the invention at any positive price since any sophisticated buyer will simply replicate the invention after disclosure. While Arrow's thought exercise abstracts away from some mitigating factors (such as reputation effects, non-disclosure agreements, and difficult-to-replicate know-how) in real-world negotiations between innovators and potential commercial partners, it nonetheless captures the risk faced to some extent by any innovator who wants to commercialize an invention but lacks the financial, technical or other means to do so independently in a timely and efficient manner.

A reasonably secure IP system mitigates this transactional roadblock by enabling the innovator to place its technology in a "property envelope" that is reasonably secure from expropriation. Just as in tangible goods markets, a legal system that enables this form of asset partitioning sets in motion the iterative sequence of negotiation, pricing, and other transactions through which markets allocate resources in response to demand and supply conditions. When situated within the practical context of real-world innovation markets, IP rights are not a second-best solution to support innovation incentives through a monopoly entitlement but rather, a first-best solution to support the formation of markets in innovation assets by providing a property-rights foundation for privately negotiated transactions.

In innovation-dependent markets, this transactional solution to the information paradox yields two foundational categories of efficiency effects that resolve much of the tension commonly assumed to exist between IP rights and antitrust policy.

First, IP rights can *lower entry costs* for entities that operate as "invention factories" (to borrow a term used to characterize Thomas Edison's famous laboratory in Menlo Park, New Jersey). This category encompasses a diverse range of entities that specialize in innovation but lack the capacities to commercialize innovations independently as efficiently as other entities, including securing the funding and expertise necessary to support the commercialization process. Concrete examples include startups that lack independent pro-

2 This economic term refers to the fact that an intangible good, unlike tangible goods, can be used simultaneously by multiple users without depletion of its value.

3 Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609-626 (National Bureau for Economic Research 1962).

duction and distribution capacities, large companies that monetize R&D primarily through licensing transactions with producers and other downstream entities, and the technology transfer divisions of academic research institutions. All of those entities rely on contractual relationships with third parties to convert ideas into products and services. Those contractual relationships must be anchored in a property-rights foundation (or, when feasible, a technological mechanism) to regulate and therefore price access to the underlying innovation.

Second, IP rights can *lower access costs* for firms that specialize in financing, production, or distribution, but lack the capacities to undertake innovation as efficiently as other entities. As Arrow theorized in the same 1962 paper[4] and business management scholars and economic historians have extensively documented empirically,[5] large firms tend to excel in incremental and process innovations but generally underperform when undertaking "radical" innovations that disrupt existing technologies. By contrast, smaller firms tend to excel in developing breakthrough innovations that challenge existing technologies — by necessity, since they have little chance of competing by simply refining incumbents' existing products. Hence, robust innovation ecosystems will often or usually require a robust property-rights infrastructure that enables entry by the full range of firm types (especially smaller or vertically disintegrated firms that often propel the Schumpeterian process of creative destruction).

If we put together these two counterintuitive effects attributable to a robust IP system in a significant range of circumstances — lower entry costs and lower access costs—a picture emerges that bears little resemblance to the conventional view of IP rights. That view assumes that IP rights inherently impede competition by blocking entry and raising access costs. In a "snapshot" view of any particular market at a given moment in time, that proposition is true by definition since IP rights impose a cost to use an existing *stock* of technologies that would otherwise be freely accessible. However, that proposition falters from any longer-term perspective that appropriately prioritizes sustaining a robust *flow* of technologies over time. From that dynamic perspective, IP rights facilitate the transactional relationships that foster the division of labor that allocates each step of the innovation and commercialization process to the entity that can execute that step most efficiently.

This process is a "win-win" as a matter of both competition and innovation policy: IP rights reduce entry barriers for certain entities that excel at developing innovations while enabling those same entities to partner with larger integrated firms that excel at commercializing innovations. This also benefits larger firms over the medium to longer term by enabling those firms to source innovations that are unlikely to be developed in-house due to the absence in large-firm bureaucratic environments of what Oliver Williamson called the "high-powered" incentives of smaller entrepreneurial entities.[6] By implication, rolling back IP rights undermines the market's ability to design transactional structures that can most efficiently develop and execute the innovation and commercialization process from beginning to end. This outcome prevents markets from achieving the maximally efficient division of labor and, as a result, makes all stakeholders — including end-users — worse off over any relevant policy horizon.

03
LESSONS FROM U.S. INNOVATION HISTORY

As I have shown in two books,[7] this unconventional view of IP rights is not a mere conjecture; rather, it can explain changes in technology monetization strategies in response to changes in the strength of patent protection.

A shift in U.S. innovation policy in the early 1980s provides a natural experiment — and like any such experiment, imperfect in certain respects — to test out this thesis. From the late 1930s through the 1970s, courts had generally been inhospitable to patent infringement lawsuits, the antitrust agencies had treated a variety of patent licensing practices as per se antitrust violations, and federal regulations had

4 *Id*.

5 For classic studies showing the disproportionate role of small firms and individual inventors in technological advancement, see JOHN JEWKES, DAVID SAWERS, AND RICHARD STILLERMAN, THE SOURCES OF INVENTION (2d ed. 1969); Ashish Arora, Wesley M. Cohen, and John P. Walsh, *The Acquisition and Commercialization of Invention in American Manufacturing: Incidence and Impact*, NATIONAL BUREAU OF ECONOMIC RESEARCH WORKING PAPER, No. 20264 (2014).

6 OLIVER E. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS (1975).

7 The following discussion draws substantially on JONATHAN M. BARNETT, INNOVATORS, FIRMS, AND MARKETS: THE ORGANIZATIONAL LOGIC OF INTELLECTUAL PROPERTY (2021) [hereinafter BARNETT, INNOVATORS], JONATHAN M. BARNETT, THE BIG STEAL: INTEREST, IDEOLOGY, AND THE UNDOING OF INTELLECTUAL PROPERTY (forthcoming 2024).

limited the ability to patent innovations arising out of federally funded research.[8] Reflecting widespread concern over an "innovation malaise," three policy actions were undertaken:

- In 1980, Congress enacted the Bayh-Dole Act, which lifted existing legal restrictions on patenting innovations developed using federal funding, especially following a 1986 amendment that expanded the statute's scope to private firms.[9] This provided the legal foundation for the technology transfer industry.

- In 1980, the Supreme Court issued its decision in *Diamond v. Chakrabarty*[10], which adopted a broad understanding of patentable subject matter and provided the basis for patent protection over biotechnological inventions (such as the landmark patent issued in that same year by the U.S. Patent and Trademark Office on the Cohen-Boyer recombinant DNA process technology).[11]

- In 1982, Congress established the Court of Appeals for the Federal Circuit,[12] which proceeded to issue decisions that tended to strengthen patent protections.[13] In particular, the Federal Circuit affirmed the presumptive availability of injunctive relief for patent owners that defend validity and demonstrate infringement,[14] as illustrated by the shutdown of Kodak's instant-camera division in 1976 following its loss in a patent infringement litigation brought by Polaroid.[15]

Unsurprisingly, use of the patent system increased substantially following these legal changes, rising from 62,000 patent applications by U.S. residents in 1980 to 177,000 applications by 2000, which translates on a per capita basis to an increase from 273 applications per one-million U.S. residents in 1980 to 584 applications per one-million U.S. residents in 2000.[16] Reflecting the conventional view, expert commentators in academia and policy circles widely predicted that innovation was suffering, or would imminently suffer, under the "burden" of excessive patent issuance and a "thicket" of patent claims and licenses.[17]

Yet a closer look at the facts in the two decades following the shift toward a strong-patent regime shows that experts had little reason for concern. First, over a broader historical time-frame, patent issuance on a per capita basis was simply returning to the levels that had existed prior to the onset of the weak-patent regime in the late 1930s.[18] Second, national R&D intensity (measured by annual R&D expenditures as a percentage of national GDP) modestly *increased*, with a significant shift in funding from public to private sources.[19] Third, increased patent issuance had coincided with a dramatic increase in the percentage of private R&D investment attributed to smaller firms (less than 1000) employees, increasing from about 5 percent of private R&D investment as of 1980 to about 25 percent as of 2000. During the period extending from 1957 through the 1970s, when courts were hostile to patent enforcement, that percentage had never risen above 7 percent.[20]

"Yet a closer look at the facts in the two decades following the shift toward a strong-patent regime shows that experts had little reason for concern"

8 BARNETT, INNOVATORS, *supra* note 7, at 69-72.

9 Patent and Trademark Law Amendments (Bayh-Dole) Act, Pub. L. No. 96-517, 94 Stat. 3015 (1980), codified by 35 U.S.C.S. §§ 200-212 (amended 1984, 2000); Federal Technology Transfer Act of 1986, Pub. L. No. 99-502, 100 Stat. 1785 (1986).

10 447 U.S. 303 (1980).

11 U.S. Patent No. 4237224A, Process for producing biologically functional molecular chimera (Dec. 2, 1980).

12 Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (1982).

13 BARNETT, INNOVATORS *supra* note 6, at 72-75.

14 *Smith Int'l, Inc. v. Hughes Tool Co.,* 718 F.2d 1573, 1578 (Fed. Cir.), *cert. denied,* 464 U.S. 996 (1983).

15 *Polaroid Corp. v. Eastman Kodak Co.,* 641 F.Supp. 828 (D. Mass. 1986).

16 BARNETT, INNOVATORS *supra* note 6, at 86-87, Fig. 4.6.

17 See, e.g. Michael A. Heller and Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, SCIENCE, Vol. 280, no. 5364: 698-701 (1998).

18 BARNETT, INNOVATORS *supra* note 6, at 106, Fig. 5.3.

19 *Id*., at 107, Fig. 5.4.

20 *Id*., at 110-111, Figs. 5.6-5.7.

Based on these "macro" data points, the strengthening of the patent system coincided with not only an increase in innovation investment but an improved distribution of that investment across incumbents and entrants. That would seem to suggest that strengthening patent protections had been a positive policy initiative that should have been welcomed, rather than being widely attacked.

04 LESSONS FROM BIOTECHNOLOGY AND SEMICONDUCTORS

If we look at the "micro" data from two industries that blossomed during this period, there is further reason to believe that increased patent protection starting in the 1980s enhanced both innovation performance and competitive conditions. Both industries are mission-critical components of the U.S. innovation economy (which, in the current policy environment, has important geopolitical in addition to economic implications).

In the biotech industry and certain segments of the semiconductor industry (in particular, ASICs or application-specific integrated circuits), the strengthening of the patent system appears to have enabled entry by smaller firms that specialize in the innovation segments of the tech supply chain but rely on partnerships with other firms to execute the commercialization process.

A. Biotechnology

From the industry's inception, the biotech industry has relied on transactional structures involving relationships among research institutions and startups that deliver the innovation, VC firms that deliver the funding, and large pharmaceutical firms that deliver testing, production, and distribution expertise, personnel, and facilities. Each of these interactions involves the exchange of valuable information that can be seized and used without compensation by a sophisticated counterparty. Patents, in conjunction with contractual instruments, can play a valuable role in protecting that exchange and enabling parties to structure relationships with reduced concern over knowledge leakage and other forms of expropriation risk. It may therefore not be coincidental that the biotech industry has been characterized by widespread use of patents as a monetization strategy, the prominence of VC-backed startups as a critical source of innovation, and the widespread use of partnerships between small and large firms to execute the testing, production, and distribution process.[21]

B. Semiconductors

In the semiconductor industry, IP rights played a role in the emergence of the "fabless" chip-design industry in the 1980s.[22] These firms specialize in chip design and rely on VC funding for capital and contractual relationships with third-party "foundries" for wafer production services and associated process innovation. This transactional structure, which relies on IP rights and contractual instruments to protect the flow of information across technically sophisticated firms, dramatically lowered entry barriers into the semiconductor industry by relieving entrants from incurring the billions of dollars required to establish independent production capacities by constructing and maintaining "fab" structures. The result has been a flowering of both innovation and competition that broke open the semiconductor supply chain (which had previously been populated principally by vertically integrated chip producers), benefiting not only chip-design firms but the far broader ecosystem of device producers and intermediate and end-users that rely on semiconductor innovations.

05 CONCLUDING THOUGHTS ON RECENT POLICY DEVELOPMENTS

Notwithstanding the favorable effects of patent protection on innovation and competition in at least two industries, the conventional view of patents and IP rights more generally as at best a tolerated monopoly continues to predominate in innovation policy. This view is reflected in a sequence

21 CLAUDE E. BARFIELD AND JOHN E. CALFEE, BIOTECHNOLOGY AND THE PATENT SYSTEM: BALANCING INNOVATION AND PROPERTY RIGHTS (2007); Ashish Arora and Alfonso Gambardella, *Complementarity and External Linkages: The Strategies of the Large Firms in Biotechnology*, 38 J. IND. ECON. 361 (1990).

22 This paragraph reflects BARNETT, INNOVATORS, *supra* note 6, at 124-126, and Alexander Galetovic, *Patents in the History of the Semiconductor Industry*, in THE BATTLE OVER PATENTS: HISTORY AND POLITICS OF INNOVATION 27-68 (eds. Stephen H. Haber and Naomi R. Lamoureaux 2021).

of U.S. Supreme Court decisions since the mid-2000s that have almost consistently reduced patent protections[23], resistance by federal courts (since the *eBay Inc. v. MercExchange LLC* decision in 2006)[24] to grant injunctions in favor of patent owners that rely predominately on licensing revenues or, in some cases, hold a patent on a component technology[25], repeated efforts by antitrust agencies to constrain the licensing freedom of standard-essential patent holders in wireless communications technologies (aside from a policy shift during 2017-2020 at the U.S. Department of Justice),[26] and the Office of the U.S. Trade Representative's endorsement in 2021 of the COVID-19 IP waiver.[27]

Misguided innovation policy can have adverse consequences that are hard to correct.

Failure to consider how to preserve Bell Labs in connection with the otherwise pro-competitive breakup of AT&T in 1982 resulted in the loss of one of history's greatest technology laboratories (functionally equivalent to the loss of a major academic research institution), which faded into irrelevance under Lucent Technologies. The FTC's antitrust lawsuit from 2017 until 2020 against Qualcomm, in tandem with Apple's concurrent litigation against Qualcomm, almost succeeded in undermining the economic viability of one of the world's leading chip-design firms in the wireless communications market.[28] Continued adherence to IP-skeptical policies across all branches of government has eroded the legal security of patents and, based on at least one study, diverted VC dollars away from industries (in particular, biopharmaceuticals and IT hardware) that use business models that rely substantially on patents to monetize innovation.[29]

This policy trajectory places at risk the U.S.'s holistic innovation ecosystem that relies on the synergies between basic research at academic institutions, the inventive capacities of startups, the risk-bearing capacities of VC firms, and the scale efficiencies of larger firms to deploy new technologies in target business and end-user markets. In a period during which innovation policy encompasses geopolitical effects, the costs of a continuing weak-IP policy trajectory for the U.S. innovation economy are magnified.

Without a robust patent system (and at a minimum, a return to the historical tradition of presumptively granting injunctive relief against adjudicated infringers), some industries can, do, and will use technological mechanisms and business strategies to earn returns on innovation without reliance on patents. Hence, analytical rigor does not support "doomsday" arguments that innovation will uniformly collapse in the absence of robust patent protection. However, there are two important caveats. First, non-IP-based mechanisms may not be feasible in the biopharmaceutical industry given the almost universal use of patents across virtually all firm types and therapeutic categories. This consideration raises special concern over policy steps that impact the strength of pharmaceutical patent protections, such as recent efforts by federal agencies to interpret the Bayh-Dole Act's "march-in" rights provision as a mechanism for government intervention when drug prices are deemed to be "unreasonable."[30] Second, even in industries in which non-patent-based business models are feasible, there is no assurance that the remaining pool of practically workable models will always represent the most efficient mechanism for commercializing particular types of innovations. Without a robust IP baseline, markets are no longer able to engage in an unrestrained trial-and-error process that converges upon the most efficient mix of commercialization structures.

"Non-IP-based mechanisms may not be feasible in the biopharmaceutical industry given the almost universal use of patents across virtually all firm types and therapeutic categories"

23 Jonathan M. Barnett, *Patent Groupthink Unravels*, 34 HARV. J. L. & TECH. 419, 422-23 (2021).

24 547 U.S. 388 (2006).

25 Christopher B. Seaman, *Permanent Injunctions in Patent Litigation After eBay: An Empirical Study*, 101 IOWA L. REV. 1949 (2016). For examples where courts denied injunctive relief to the holder of a patent on a component technology, see *z4 Technologies, Inc. v. Microsoft Corp.*, 434 F. Supp. 2d 437 (E.D. Tex. 2006); *Paice LLC v. Toyota Motor Corp.*, No. 2:04-211, 2006 U.S. Dist. LEXIS 61600 (E.D. Tex. 2006).

26 Jonathan M. Barnett, *Antitrust Overreach: Undoing Cooperative Standardization in the Digital Economy*, 25 MICH. TECH. L. REV. 163, 211-212, 223-224 (2019).

27 Office of the U.S. Trade Representative, Statement from Ambassador Katherine Tai on the Covid-19 Trips Waiver, May 5, 2021.

28 Barnett, *supra* note 26, at 224-225.

29 Mark F. Schultz, *The Importance of an Effective and Reliable Patent System to Investment in Critical Technologies,* ALLIANCE OF U.S. STARTUPS AND INVENTORS FOR JOBS (2020), https://www.usij.org/research/2020/8/3/usij-releases-report-on-the-importance-of-an-effective-and-reliable-patent-system-to-critical-technologies.

30 The White House, Biden-Harris Administration Announces New Actions to Lower Health Care and Prescription Drug Costs by Promoting Competition (Dec. 7, 2023); National Institute of Standards and Technology, Request for Information Regarding the Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights (Dec. 8, 2023).

In particular, a weak-IP environment may compel the market to select commercialization mechanisms that have adverse effects on innovation performance and competitive conditions. Recall that patents tend to facilitate transactional exchanges over informational assets by mitigating the risk of expropriation by a business counterparty. More broadly, patents operate as a market-making mechanism that enables transactions between the holders of inventions and sources of capital or production and distribution capacities. In a truncated property-rights environment, expropriation risk reemerges and the holders of innovation assets may be reluctant to enter into those transactions. Anticipating this outcome, the market is likely to respond by directing capital for purposes of innovation toward large integrated incumbents that can monetize R&D within protected "walled gardens" in which expropriation risk is managed by minimizing interactions with third parties or erecting entry barriers by creating difficult-to-replicate product-and-services ecosystems. Counterintuitively, a weak-IP environment can therefore raise entry costs by compelling firms to monetize R&D through integrated structures — precisely the structures that incumbents tend to already have in place but are difficult to replicate for smaller firms and other innovation specialists to replicate. The potential result over time is both less innovation and less competition. That is a patently anticompetitive outcome. ■

"Patents operate as a market-making mechanism that enables transactions between the holders of inventions and sources of capital or production and distribution capacities"

HOW SHOULD THE UPC HANDLE FRAND?

BY RICHARD VARY

Partner, Bird & Bird, London.

01 INTRODUCTION

The conference season has barely restarted after the summer break, but twice already speakers have stated that the German courts have never upheld a FRAND defense. This, they say, is evidence of a need for reform, and for the Unified Patent Court ("UPC") to adopt a different approach.

This is a powerful argument. But it is also little unfair. German courts were the first to recognize a FRAND defense, in *Standard*

Spundfass and *Siemens v. Amoi*. Many implementers have successfully argued FRAND before German courts since. But on 20 May this year, an IPFray article observed that since the German Supreme Court's *Sisvel v. Haier* decision there have been comparatively few written judgments published in which the defendant has successfully raised a FRAND defense, and none at all from the Munich 1 Regional Court.

As IPFray points out, Munich 1 isn't all of Germany. But it is a popular court for Standard-essential patent ("SEP") cases. One Munich judge is reported to have said, a little cryptically to those unfamiliar with German procedure, that this statistic arises because the Defendant does not control the proceedings. What I think he means is this: German Courts tend to tell the parties what their decision is going to be. What English lawyers think of as the "trial" is, in Germany, largely conducted in writing in the weeks or months before a final hearing. So when parties arrive in court on "trial day," the judges have read the written submissions from each side, discussed the case amongst themselves, and largely reached their decision. Unlike English judges, who do not wish to be seen to have pre-judged the issue, German judges will tell the parties at the outset of the hearing where they are clear in their view, and where they need to hear more argument.

And if they tell the patent owner at the outset of the hearing that they think the FRAND defense succeeds, the patent owner would be well advised to withdraw the case before the end of the hearing. Doing so reduces the court fee that he will be ordered to pay, and the contribution he must make to the other side's costs. It avoids getting a written judgment that may criticize his FRAND behavior. It may also be thought to curry favor with the court by not making it write a lengthy judgment. The patent owner can revise his FRAND offer to improve his chances when the next patent reaches trial. If he does that correctly, the opponent will either take the offer (in which case there will be no more decisions) or decline it (in which case the next decision will be a published judgment in which the FRAND defense fails).

The defendant, by contrast, has no such ability to withdraw and try again. If after reading the papers, the judges conclude that the FRAND defense fails, the defendant generally cannot prevent a written judgment being given to that effect. So, I would venture that the statistic that there are few or no recent German written judgments upholding the FRAND defense is not necessarily evidence that a FRAND defense doesn't work in German courts. It may just be because that we won't see a published written judgment in the cases where the FRAND defense is upheld.

The UPC has a choice before it where it comes to FRAND. It can adopt the *Huawei v. ZTE* case law that the German courts follow, deciding in a yes/no way whether to grant an injunction. Or, as some of the Dutch UPC judges have suggested, it could adopt a more English approach: it could determine a rate, and offer that to the Defendant as an alternative to an injunction under the infringed patents. This is what the English courts call a FRAND injunction

Article 32(1) of the Agreement on a Unified Patent Court (the "UPC Agreement") does not give the court power to set a rate for a FRAND license. But the English court does not generally have that power either. What the English Court is doing is deciding the terms on which a conditional injunction will or will not be granted. It has power to grant injunctions, and power to decide the circumstances under which they would take effect. The UPC, it could be argued, has that power too.

Equally an implementer might run a FRAND defense under *Huawei v. ZTE* in which it agrees that it will take a license on "whatever terms the court determines to be FRAND." The UPC might accept that as evidence of willingness by the implementer under the second step of the *Huawei v. ZTE* test, and accept it as a FRAND offer in the fourth step.

"The defendant, by contrast, has no such ability to withdraw and try again. If after reading the papers, the judges conclude that the FRAND defense fails, the defendant generally cannot prevent a written judgment being given to that effect"

So it is possible that the UPC might adopt a more English approach. I would urge them not to go all the way, though: UK FRAND cases are expensive relative to European cases. The costs of recent English FRAND cases (well over £10m on each side) might be proportionate for the largest SEP holders taking on the largest implementers, but for anything less than that the current UK approach is not well adapted. This is partly because almost everything in the UK is arguable: in *Lenovo v. InterDigital*, and in *Alcatel v. Amazon* the parties spent the best part of a day in court arguing about whether a trial would occur in July or September. A German court would have set the date at the outset of the case, without reference to the parties. English FRAND cases now commonly have four or more "case management" conferences before the trial itself, each a day in court which could have been used to resolve the actual dispute. "Robust case management" is a watchword of the English judges, but too often "robust case manage-

ment" translates into scheduling a series of interim hearings, and interim hearings are expensive. So I would hope that the UPC judges don't take too many leaves from the current English book.

02
RECOMMENDATIONS

The UPC has one major advantage that the English court does not have: the mediation and arbitration center in Lisbon and Lubyanka. In general, FRAND is not easily mediated: where the negotiators have not been able to reach agreement it is usually because there are too many variables and too many unknowns to make agreement possible. But there comes a point in a litigated FRAND dispute at which the unknowns become known, many of the variables fall away, and FRAND reduces to a single variable equation with the inputs necessary to solve it. At that point mediation (or negotiation) is more likely to succeed. Unfortunately, in English procedure, that point only arises shortly before trial.

So, if I were a Dutch UPC judge (being born British this is relatively unlikely) contemplating a FRAND dispute, I would do the following:

A. Decide What to do with the Technical Infringement and Validity Cases.

Often, when we get to FRAND, it is because a court has found a patent valid and infringed, and one or two years have passed since the case was filed. But that does not need to be the case. It may be that the infringement trial are proceeding on a parallel track. It might be that the parties agree that FRAND should go first. Where the parties are dealing with a large and well known portfolio it may be practically inevitable that a patent will be valid and infringed. In that case, the court may decide to deal with FRAND first and only look at infringement if it becomes necessary at the end to impose an injunction under a patent. In two recent English cases (*Nokia v. Oppo*, *InterDigital v. Oppo*) the parties have agreed to proceed on the assumption that one of the patents is valid and infringed, and skip the costs of establishing that fact.

B. Order Early on the Disclosure of Licenses on each Side which Cover the Technology at Issue

We have had many (expensive) arguments in the UK about what should be disclosed. In a fast moving technology area, a ten year old license is not going to be helpful, so there is probably some basis for imposing a time limit. And a full portfolio cross license may be difficult to unpack to derive a rate for a single technology. But sometimes if a party is arguing strongly that a particular category should be excluded, it is doing so because there is something in that category that undermines its case. So, I would cast the net relatively widely andorder two things:

1. Disclosure of the patentee's out-license agreements that have not expired, that are less than 10 years old, and that cover the technology at issue. Hopefully this will capture ten or more licenses. This will be more than are useful, but the additional cost caused by superfluous disclosure is probably less than the cost of arguing about the scope of disclosure.

2. Disclosure of the defendant's in-license agreements.

It is often argued that the defendant's in-licence agreements are irrelevant as they relate to a different portfolio. In the UK that argument works with some judges, but not with others. But in-licenses are useful for two reasons. First, it is commonly argued that a patent owner's rates are above market rate, and that, if the implementer had to pay such rates, the products would be unmarketable. These two arguments are of course mutually contradictory: the first relies upon other SEP owners charging proportionately less than the patent owner, and the second relies on other SEP owners charging a proportionately similar rate. Disclosure makes a defendant focus his arguments on reality, rather than theory.

The second reason is that it is becoming increasingly common to argue that a FRAND license must cover <u>all</u> patents, not just those essential to the standard in question. The argument is that it would be unfair for the defendant to pay a large sum of money for SEPs to cover expected future sales, and then be removed from the market under another patent in the portfolio. Some protection under those other patents, the Defendant argues, is commercially necessary. But there are patent owners, and pools, who offer two licensing programs: one covering just SEPs to a particular standard, and a more expensive program covering all patents. The "commercial necessity" argument would be resolved by seeing whether the Defendant took the more expensive "whole portfolio" licenses when those are offered.

There has also been argument as to who can see the licenses. Lawyers and independent advisers who are under strict confidentiality conditions, and under a prohibition against use outside the proceedings, are usually included. But English courts have settled on allowing one or two in house people at the companies to see the relevant license agreements also.

Transparency is often argued to be a good thing, and in some markets it works well: the price at which UK houses are sold are all published, for example. Other markets work better when opaque: employment salaries are an example. The problems arise when one person has more information than their competitor, which is why we are so wary of inside information in stock markets.

So, generally the in-house representatives who are allowed to see the relevant license agreements may not be licensing executives: they would benefit too much from seeing the information, and SEP litigation would become a means for a party to secure a competitive advantage through obtaining market information. Instead, these in-house representatives may be in house litigators, and in the English courts they would give an undertaking not to participate in licensing discussions after seeing the information. Whether this is sufficient protection is arguable: would an employee in a large global company really feel bound to withhold valuable information from his employer by a promise that he gave to a court on a small island a long way away? I suspect that we in the UK overestimate our influence. But, this is where we have got to. And it will become useful when we get to stage 4.

C. Order the Parties to Produce a Proposed Form of License

A problem with resolving FRAND is the number of variables. Are we discussing a three year or a seven year license? Are we licensing all standardized technologies, or just one? What products is this to cover? Is it a one way or a cross license? Is it lump sum or running royalty?

Provided a patent owner offers a FRAND license, he is generally free to choose between these options. Some patent owners have lump sum licensing programs, others operate running royalty programs. Some offer long licenses, others short. Until we know what is being discussed, it is difficult to determine a price. So I would order the patent owner to propose a form of license, and the defendant to put forward any arguments about why a particular element is not FRAND. If they cannot agree, I would hold an interim hearing to resolve the arguments, and determine the form of license that is to be valued.

D. Mediation

The parties now know what form of license they are discussing: long or short, running royalty or lump sum, one way or cross. They also have the information needed to value this, in the form of their opponent's licenses. They need time to digest this information. It will inevitably come as bad news to one or the other, and quite possibly both. It takes humans (and organizations) a surprising amount of time to readjust their expectations once they have sight of the facts.

This is also the part of the proceedings that requires the most work by the parties' economists and legal advisers. So I would order two things: I would order that the lawyers and economists have a reasonable deadline (some months) to produce submissions as to valuation of the license determined (and I would also cap the number of pages of those submissions).

In the meantime I would order that the parties themselves attend mediation at the UPC mediation center. Now that they know what they are valuing, and they have seen the information needed to value it, there is a relatively good chance that they can reach agreement without further help from the Court.

"Provided a patent owner offers a FRAND license, he is generally free to choose between these options. Some patent owners have lump sum licensing programs, others operate running royalty programs"

E. Two-day Trial

If mediation fails, then a trial is necessary. In the UK, we hold 15 day trials, and produce many thousands of pages of documents, but give the judge only a couple of days to read them. The most interesting part of the trial is the economic expert evidence, and that takes two or three days. The key part of that is the hot tubbing, when both experts are put in the box and the judge asks them both questions. That part lasts only a few hours. I would order a two or three day trial, with a week of reading time beforehand. Most submissions can be in writing, with a strict length limit to ensure that they can be read in the time available. The days of the hearing can be a discussion of the valuation evidence, and if needed the judge can ask questions of the parties. Whether this is through questioning the economic experts in a hot tub, or questioning the legal representatives, is up to the court. Although different legal systems have strong principled views about whether economic arguments should be presented by economists or the representing lawyers, both approaches seem to be working in practice.

F. Remedy

At the end of this process, a number will emerge. If the defendant agrees a license at this rate, pays and signs the license, the court need not grant injunctive relief. Otherwise, the court can grant an injunction under any SEPs found valid and infringed.Conclusion.

03
CONCLUSION

The UPC is proving successful as a patents court. It has achieved that success through adopting the parts of English and mainland European civil litigation procedure that work best in patent cases. If it could take the best aspects of English and German procedure in FRAND disputes, it may resolve those quickly, cost-effectively and fairly. ■

> ***"The most interesting part of the trial is the economic expert evidence, and that takes two or three days"***

ABOUT US

Since 2006, **Competition Policy International** ("CPI") has provided comprehensive resources and continuing education for the global antitrust and competition policy community. Created and managed by leaders in the competition policy community, CPI and CPI TV deliver timely commentary and analysis on antitrust and global competition policy matters through a variety of events, media, and applications.

As of October 2021, CPI forms part of **What's Next Media & Analytics Company** and has teamed up with **PYMNTS**, a global leader for data, news, and insights on innovation in payments and the platforms powering the connected economy.

This partnership will reinforce both CPI's and PYMNTS' coverage of technology regulation, as jurisdictions worldwide tackle the regulation of digital businesses across the connected economy, including questions pertaining to BigTech, FinTech, crypto, healthcare, social media, AI, privacy, and more.

Our partnership is timely. The antitrust world is evolving, and new, specific rules are being developed to regulate the so-called "digital economy." A new wave of regulation will increasingly displace traditional antitrust laws insofar as they apply to certain classes of businesses, including payments, online commerce, and the management of social media and search.

This insight is reflected in the launch of the **TechREG** Chronicle, which brings all these aspects together — combining the strengths and expertise of both CPI and PYMNTS.

Continue reading CPI as we expand the scope of analysis and discussions beyond antitrust-related issues to include Tech Reg news and information, and we are excited for you, our readers, to join us on this journey.

Scan to Stay Connected!

Scan here to subscribe to CPI's **FREE** daily newsletter.

CPI SUBSCRIPTIONS

CPI reaches more than **35,000 readers** in over **150 countries** every day. Our online library houses over **23,000 papers**, articles and interviews.

Visit **competitionpolicyinternational.com** today to see our available plans and join CPI's global community of antitrust experts.

CPI COMPETITION POLICY® INTERNATIONAL