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The Case for a Strong Patent System
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I. Introduction

Good afternoon, and many thanks to the PTO and my alma mater, GMU, for hosting this important conference. Most of us in this room believe that inventors deserve property rights and that patents encourage innovation. Unfortunately, this is not a universal view. Criticism of the patent system has reached new heights. Op-eds call for limiting patent rights.² Even reputable sources like *The Economist* voice a skeptical tone.³ Some technology firms claim that patent lawsuits erode their R&D budgets and bottom lines.⁴ And a few even call for abolishing the patent system.⁵

¹ The views expressed here are my own and do not necessarily reflect the views of the Federal Trade Commission or any other Commissioner. I would like to thank Alan Devlin for his invaluable contributions to this speech.

² See, e.g., Electronic Frontier Foundation, *Patent Fail: In Defense of Innovation*, <https://www.eff.org/patent>; Charles Duhigg & Steve Lohr, *The Patent, Used as a Sword*, N.Y. TIMES, Oct. 8, 2012, at A1; Richard A. Posner, *Why There Are Too Many Patents in America*, ATLANTIC, July 12, 2012; see also Gene Sperling, *Taking on Patent Trolls to Protect American Innovation* (June 4, 2013), <http://www.whitehouse.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation>.

³ *The problem with profits*, THE ECONOMIST, Mar. 26, 2016; *Time to Fix Patents*, THE ECONOMIST, Aug. 8, 2015; *A Question of Utility*, THE ECONOMIST, Aug. 8, 2015.

⁴ See, e.g., Dana Rao, *Patent reform is within grasp*, Mar. 8, 2016, THE HILL; Steve Lohr, *With Patent Litigation Surging, Creators Turn to Washington for Help*, N.Y. TIMES, Apr. 29, 2015; John Chambers & Myron E. Ullman, *Stopping the Economy-Sapping Patent Trolls*, WALL ST. J., Feb. 16, 2015.

⁵ See MICHELE BOLDRIN & DAVID K. LEVINE, *AGAINST INTELLECTUAL MONOPOLY* (2010); cf. ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* (2007).

Against that backdrop, proponents of inventors' rights might despair. But they should not. We are here today to reorient the discussion, to rediscover the fundamental principles that underlie our patent system, and to celebrate all that is right with U.S. innovation. IP rights confer compelling benefits that patent skeptics overlook or discount. The U.S. economy itself stands as a shining reminder of everything that American innovation policy has achieved. IP rights lie at the heart of that policy. It is time to reassert the vital role of patents, and I commend you all for participating in today's conference.

Nevertheless, recent criticism of the patent system requires some explanation. Americans have long associated IP rights with ingenuity and held innovators in high esteem.

So what happened to the conviction that innovators deserve proprietary rights? Or that the American economy enjoys unparalleled success because it protects owners' interests?

Perhaps four factors are responsible. First, patent-assertion entities have drawn criticism. Second, patenting technologies and commercializing them are increasingly separate acts, undertaken by different entities, and connected by patent licenses, if at all, after the fact. If technology users independently invent infringing technologies, some skeptics argue that patent lawsuits tax innovation instead of copying. Third, litigation costs make enforcing and defending against patent claims expensive. Finally, not all patents are valid.

The welfare implications of those factors are complicated. But even if PAEs, *ex post* licensing, and high litigation costs sometimes produce imperfect outcomes, they do not undermine the patent system's core function. Today's patent regime drives a varied, complex, and evolving array of technologies. The markets in which novel products and methods arise are themselves changing. Of course there are imperfections in how patents execute their mission. But such complications are no reason to abandon the patent system wholesale.

Negativity has commandeered recent discourse, drowning out nuanced debate over how best to refine patent rights. I worry that those with an agenda have leveraged some legitimate grievances into a larger, anti-IP platform that would hinder U.S. innovation. So, today, I propose that we honor our patent system, which traces back to the founding of our country.

With that goal in mind, I will argue that patents do indeed spur innovation.⁶

II. The Econometric and Survey Literature Support Strong Patents Rights

A. Critics Question the Efficacy of the Patent System

As I mentioned, several critics have questioned the premise of the patent system. Their claims deserve serious attention. But like many of you in the audience, I have evaluated claims of patent failure and found them wanting. In an article forthcoming in the *Harvard Journal of Law & Technology*, I explain why.⁷

Abundant evidence links strong patents with R&D investment and economic growth. There is no question that patents are indispensable to innovation in the life-sciences industry and crucial to many inventors elsewhere, too.⁸ That is not to say that the evidence is in all respects unequivocal or that ever-expanding patent scope would always increase innovation. But, viewed dispassionately, empirical learning favors strong patents.⁹ By contrast, discarding or weakening inventors' rights would be reckless.

⁶ See, e.g., Maureen K. Ohlhausen & Dan Schneider, *Intellectual Property and the National Security Issue*, WASH. TIMES, Dec. 1, 2015; Maureen K. Ohlhausen, *Antitrust Oversight of Standard-Essential Patents: The Role of Injunctions*, Speech to the IP and Antitrust Forum, China Intellectual Property Law Association, Sept. 12, 2015, <https://www.ftc.gov/public-statements/2015/09/antitrust-oversight-standard-essential-patents-role-injunctions>; Maureen K. Ohlhausen & Joshua D. Wright, Reply Submission on the Public Interest – *In re Certain 3G Mobile Handsets & Components Thereof*, U.S. Int'l Trade Comm'n, July 20, 2015, <https://www.ftc.gov/public-statements/2015/07/reply-submission-public-interest-federal-trade-commissioners-maureen-k>; Maureen K. Ohlhausen, *Antitrust Enforcement in China – What Next?*, Remarks before the Second Annual GCR Live Conference, Sept. 16, 2014, <https://www.ftc.gov/public-statements/2014/09/antitrust-enforcement-china-what-next-second-annual-live-conference>.

⁷ Maureen K. Ohlhausen, *Patent Rights in a Climate of IPR Skepticism*, 30 HARV. J.L. & TECH. __ (2016) (forthcoming) [draft paper on file with author].

⁸ *Id.*

⁹ *Id.*

B. *Patents Lie at the Heart of U.S. Innovation Policy*

Let me begin by contextualizing the issue. Patents have been at the heart of U.S. innovation policy since the founding of the country. They are recognized in the Constitution, and Congress passed the first patent statute in 1790—just one year after the Constitution’s adoption.¹⁰ Patent rights have featured prominently in the realization and development of many of the country’s most famous inventions. Patents remain objects of prestige within American society, which associates them with famous inventors like Thomas Edison, Samuel Morse, and the Wright Brothers. And, of course, property rights go to the core of American identity.

But the case for maintaining our strong patent system is not sentimental. It derives in part from the axiom in medicine, “First, do no harm.” Patents are big business in America.

In 2015, the PTO received almost 630,000 patent applications and issued over 325,000 patents.¹¹ U.S. firms represent half of the top 10 most prolific patent recipients. IBM tops the list, obtaining over 7,000 U.S. patents last year.¹² Patent licensing is ubiquitous throughout the economy. All told, patents are a major economic activity in which firms across many industries invest heavily.

Hence, technology firms pay vast sums for patent portfolios, transferring value to upstream inventors. For example, in 2011, the Rockstar consortium paid \$4.5 billion for Nortel’s 6,000 patents. Google bought Motorola Mobility, and its 17,000 wireless-technology patents, for \$12.5 billion later that year. In 2012, Microsoft bought 800 patents from AOL for over \$1

¹⁰ U.S. CONST. Art. I, § 1, cl. 8; An Act to Promote the Progress of Useful Arts, 1 Stat. 109 (1790).

¹¹ U.S. PATENT STATISTICS CHART CALENDAR YEARS 1963-2015, U.S. PATENT AND TRADEMARK OFFICE, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm (last visited Jun. 9, 2016).

¹² PATENTING BY ORGANIZATIONS (UTILITY PATENTS) 2015, U.S. PATENT AND TRADEMARK OFFICE, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/topo_15.htm (last visited Jun. 9, 2016).

billion. In 2013, a consortium bought Eastman Kodak's digital-imaging patents for \$525 million.¹³

The U.S. patent system has gone hand in hand with extraordinarily high rates of innovation. America is the world's largest and most innovative economy. It boasts household names like Apple, Google, IBM, Microsoft, General Electric, Amazon, Uber, Lyft, Tesla, SnapChat, Instagram, Qualcomm, and more besides. Patents matter greatly to some of those companies, though less to others, depending on whether they are net users or licensors of intellectual property. But IP rights form part of the innovation environment in which all have arisen. Many of those firms apply for, and receive, hundreds if not thousands of U.S. patents annually.

That is the backdrop in which one should construe arguments in favor of abolishing or diluting patent rights. It is a context to which patent skeptics pay little attention.

C. The Hollow Argument against Patents

Consider how radical calls for abolishing patents really are. To heed that call would be to discard a policy imbedded not just in our country's entire history, but in a program that has overseen an economy uniquely successful in producing world-beating technologies. Abolition would also deprive individual inventors, start-ups, and other small businesses of crucial benefits. Such people and firms may be unable to protect their otherwise-appropriable technologies and to signal their scientific advances to prospective investors and customers.

It seems to me that those advocating such a momentous change of direction, despite the success of our current approach, must justify their proposals with impressive evidence. Yet, they

¹³ See Charles Arthur, *Nortel patents sold for \$4.5bn*, THE GUARDIAN, Jul. 1, 2011; Jenna Wortham, *Google Closes \$12.5 Billion Deal to Buy Motorola Mobility*, BITS, May 22, 2012; Steve Lohr, *Microsoft's AOL Deal Intensifies Patent Wars*, N.Y. TIMES, Apr. 10, 2012, at B1; Dana Mattioli & Mike Spector, *Kodak to Sell Patents for \$525 Million*, WALL ST. J., Dec. 19, 2012.

tend to identify only fleeting abuses and non-systemic weaknesses, which targeted policy adjustments can solve. I see little empirical work suggesting that granting robust rights to the owners of valid patents restrict innovation.

Of course, patents do not matter to some innovators, who may rely on trade secrecy or first-mover advantage to protect their inventions, or who innovate to survive under Darwinian competition. But that simply means that patents matter greatly to some inventors, and less to others. It is no ground for discarding a system on which much R&D investment relies. And the industry that IP critics often offer up as Exhibit A of a patent crisis—information and communications technology—is thriving.

To be sure, not every patent skeptic embraces abolition. But proposals to weaken IP rights may reflect the same mistaken convictions and would likely set us on the wrong course. Some academics favor bringing certain inventions, like methods involving computer software or business methods, categorically beyond the reach of patent protection.¹⁴ Due to recent antitrust doctrine, owners of FRAND-encumbered standard-essential patentees cannot even *ask* a court for an injunction if the accused infringer arguably fits the loose description of “willing licensee.”¹⁵ Calls for mandatory cost-shifting in patent litigation—even in close cases—would transform incentives, and not always for the better. Emerging competition regimes view

¹⁴ See, e.g., John R. Allison *et al.*, *Our Divided Patent System*, 82 U. CHI. L. REV. 1073, 1076-77, n.13 (2015) (identifying sources); see also David S. Olson, *Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter*, 82 TEMP. L. REV. 181, 227-36 (2009); Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions*, 39 EMORY L.J. 1025, 1133-34 (1990).

¹⁵ See Order, *In re Motorola Mobility LLC & Google Inc.*, FTC File No. 121-0120, <https://www.ftc.gov/sites/default/files/documents/cases/2013/07/130724googlemotorolado.pdf>; Order, *In re Robert Bosch GmbH*, FTC File No. 121-0081, <https://www.ftc.gov/sites/default/files/documents/cases/2013/04/130424robertboschdo.pdf>; Case C-170/13, *Huawei Tech. v. ZTE Corp.*, <http://curia.europa.eu/juris/document/document.jsf?docid=165911&doclang=en>.

“unfairly high royalties” as illegal under antitrust law, and impose essential-facility-derived doctrines on IP owners.¹⁶

In short, a great deal is at stake and it would be a disaster to change course only to find what I believe the evidence already supports: for innovation to thrive, it needs an ecosystem in which strong patents loom large. It is to that evidence that I now turn.

D. *Empirical Evidence of the Patent System*

While time constraints today merely allow summary treatment, we can garner quite a lot from even a quick look at the evidence.

First, as the Brookings Institute observed in 2013, “patents are correlated with economic growth across and within the same country over time” and “R&D spending since 1953 is highly correlated with patenting and the patent rate[.]”¹⁷ Two studies, in particular, warrant mention.

Scrutinizing cross-country data on R&D investment and patent protection from thirty-two countries from 1981 to 1995, Kanwar and Evenson found that “[t]he strength of intellectual property protection is positively and significantly associated with R&D. . . . Thus, countries which provided stronger protection tended to have larger proportions of their GDP devoted to R&D activities.”¹⁸

That study followed work by Park and Ginarte, who examined data from sixty countries between 1960 and 1990 to explore the relationship between IP rights and economic growth. They found that “IPRs affect economic growth by stimulating the accumulation of factor inputs like

¹⁶ See KFTC, Review Guidelines on Unfair Exercise of Intellectual Property Rights, III.3.A(3), III.3.B, III.3.7.A Mar. 30, 2016; NDRC, Anti-Monopoly Guideline on Intellectual Property Abuse (Draft), § III.(ii).1-2, Dec. 31, 2015; SAIC, Guidelines for Anti-Monopoly Enforcement against Abuse of Intellectual Property Rights (Draft), Ch. 4, Arts. 23-24 Feb. 2016.

¹⁷ Jonathan Rothwell *et al.*, *Patenting Prosperity: Invention and Economic Performance in the United States and its Metropolitan Areas*, BROOKINGS 4, 8 (2013).

¹⁸ Sunil Kanwar & Robert Evenson, *Does Intellectual Property Protection Spur Technological Change?*, 55 OXFORD ECON. PAPERS 250 (2003).

research and development capital and physical capital” and that IPRs’ “benefits to growth are from encouraging the research sector to invest and take risk”, except in developing countries.¹⁹

Second, firms respond to changes in the strength of patent protection. In a well-known study, for example, Hall and Ziedonis examined the U.S. semiconductor industry between 1979 and 1995. They found that “large-scale manufacturers have invested far more aggressively in patents during the period associated with strong U.S. patent rights, even controlling for other known determinants of patenting.”²⁰

Third, survey evidence reveals that patents are critical to innovation in some markets and relevant to varying degrees elsewhere, too. A Carnegie Mellon study published in 2000 surveyed 1,478 R&D labs in the U.S. manufacturing sector in 1994. It found that “among large firms, patents have the highest effectiveness scores in a number of industries, including drugs, toilet preparations, gum and wood chemicals, pipes/valves, oil field machinery, switchgear, and autoparts. In addition, (while not being the top mechanism) patents have average scores of at least 50% in organic chemicals, fibers, turbines/generators, motors/industrial controls, and medical equipment.”²¹

The data showed, however, that “most firms in complex product industries do not consider patents, but first mover advantages, secrecy and the exploitation of complementary capabilities as the key means of protecting their inventions.”²² The authors stressed however

¹⁹ Walter G. Park & Juan Carlos Ginarte, *Intellectual Property Rights and Economic Growth*, XV CONTEMPORARY ECON. POL’Y 51 (1997).

²⁰ Bronwyn H. Hall & Rosemarie Ham Ziedonis, *The Patent Paradox Revisited: An Empirical Study of Patenting in the US Semiconductor Industry, 1979-1995*, 32 RAND J. ECON. 101, 104 (2001).

²¹ Wesley M. Cohen *et al.*, *Protecting their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)*, NBER Working Paper No. 7552, 12 (2000).

²² *Id.* at 28.

that, simply because respondents ranked one mechanism as being effective does not imply “that other mechanisms are unimportant.”²³

I only touch on the literature here in the most fleeting way. If you are interested in my views on the larger body of evidence, however, you can read my article when it publishes this coming fall.

E. *Statistical Issues Limit our Knowledge, but Warrant a Cautious Approach*

In light of that evidence, I am puzzled how commentators can proclaim that the pro-IP crowd lacks “any evidence” to support its position. As best I can tell, their critique faults us for not disproving the *possibility* that patents impose greater costs than they confer benefits.

Consider this core observation: studies keep finding a positive correlation between patent strength, private R&D expenditures, and economic growth.²⁴ That finding matters to me, as it should to everyone who cares about getting innovation policy right. But it is also true that we must be cautious in extrapolating firm principles.

The first rule of statistics is that correlation does not imply causation. An increase in patent protection may stimulate firms to spend more on R&D, thus producing more innovation and in turn greater economic growth. But perhaps a strong economy itself spurs more R&D investment by firms, which in turn obtain patents to bolster their market positions and earn higher economic rents. The economic relationship may also be multi-directional. Patents could both spur and result from innovation, which makes identifying precise causal inferences from the data extremely difficult.

Patent skeptics fault us for not disproving that patenting may result from—rather than cause—economic growth. What to make of that critique?

²³ *Id.* at 9.

²⁴ *Supra* notes 17, 18, 19.

First, it flips the appropriate burden. Patents underlie successful innovation policies and correlate with R&D and economic growth. That fact warrants extreme caution before discarding or weakening IP protection. Indeed, eliminating patents would have immediate, negative effects on the U.S. economy. Patent-specific investments would become stranded costs. Business models that rely on patents either for licensing revenue or to protect their inventions would cease to exist. Given the potential for economic disaster, what makes patent skeptics sure that the patent-R&D-economic growth correlation is not causal? Why would they jettison a system that, for better or worse, coincides with America's immense rate of technological advance? What if they are wrong?

And, even if they are right as to segments of the economy, what of the sectors like biopharmaceuticals that rely on patents to justify billions of dollars of R&D expenditures? I have seen no satisfactory answer to those questions.

There is a second problem. Statistical challenges make it hard to disprove a causal relationship from innovation to patenting. First, there are measurement problems. It is not easy, for example, to quantify innovation or to measure patent strength. Furthermore, international agreements—like the Treaty on Trade-Related Aspects of Intellectual Property Rights (TRIPS)—mean that similarly situated economies have adopted comparable patent systems. No major economy has jettisoned, or severely diluted, its patent system. Natural experiments are thus rare.

When a developed country alters the strength of its patent protection, the change tends to be marginal. For instance, Japan in 1988 strengthened its patent law by allowing inventors to obtain a patent containing multiple claims. It did so in response to U.S. pressure. Researchers

found no statistically significant increase in innovation tied to the amendment.²⁵ But that may simply mean that, as an economy introduces ownership rights in technology, it may spur R&D, but eventually further expanses in patent scope will have less benefits and may become negative. It may mean that the patent-innovation relationship follows an inverse-U shape.

Even if that is true, however, it does not undermine the core proposition that patent rights boost incentives to invent and commercialize technologies.

III. Conclusion

I conclude with two points.

First, the patent system is undergoing a period of significant reform. Even if there are faults within the IP system, recent changes in the law may have largely solved the problem. The AIA introduced post-grant and *inter partes* review by the PTAB, which has invalidated patents at a high rate. The Supreme Court's *Alice* decision has led courts to invalidate many patents claiming computer-implemented methods.²⁶ The Court has also tweaked the law governing cost-shifting and made several other changes, too.²⁷

Second, recent work by the FTC illuminates certain patent uses that unequivocally benefit society. In its 2011 report, for example, the agency praised *ex ante* technology transfer in which owners of novel solutions sell their rights to downstream users, which then use those technologies to build new products.²⁸ Such technology transfer efficiently and procompetitively

²⁵ Mariko Sakakibara & Lee Branstetter, *Do Stronger Patents Induce More Innovation? Evidence from the 1988 Japanese Patent Law Reforms*, 32 RAND J. ECON. 77, 95 (2001).

²⁶ *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014).

²⁷ *See* *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749 (2014) (making it easier for prevailing accused infringers to recoup their attorneys' fees and costs); *Nautilus Inc. v. Biosig Instruments Inc.*, 134 S. Ct. 2120 (2014) (bolstering the definitiveness requirement of patentability); *Limelight Networks, Inc. v. Akamai Techs. Inc.*, 134 S. Ct. 2111 (2014) (making it harder for patentees to establish induced infringement).

²⁸ FED. TRADE COMM'N, *THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION* 8-9, 50-71 (2011).

links inventors and consumers of technology. Hence, there are identifiable, recurring, and prominent examples of how patent licensing enhances economic welfare.

I look forward to the FTC's forthcoming PAE study, which will shed light on an issue that is crying out for empirical data in lieu of rhetoric.²⁹

In sum, I see compelling reasons to favor our patent system. Although we should continuously scrutinize the *status quo* and adjust our policies and laws when necessary, we should do so in an evidence-based manner. And, above all, we should respect the impressive body of evidence that supports strong IP rights.

Thank you for your time this afternoon, and I look forward to addressing your questions.

²⁹ Press Release, Fed. Trade Comm'n, FTC Seeks to Examine Patent Assertion Entities and Their Impact on Innovation, Competition (Sept. 27, 2013), <https://www.ftc.gov/news-events/press-releases/2013/09/ftc-seeks-examine-patent-assertion-entities-their-impact>.