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## The Past, Present, and Future of the U.S. Patent System

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## INTRODUCTION: THE PAST, PRESENT, AND FUTURE OF THE U.S. PATENT SYSTEM

Megan M. La Belle<sup>+</sup>

For more than a decade now, the topics of innovation policy and patent reform have been priorities among U.S. lawmakers. In the early 2000s, the conversation focused on concerns about our patent system impeding innovation because it was “too strong.”<sup>1</sup> Innovators, particularly in the high-tech industry, claimed that non-practicing entities or “trolls” were using junk patents to force operating companies into nuisance settlements by threatening infringement suits and permanent injunctions.<sup>2</sup> These threats distracted companies like Google and Facebook from what they should be focused on—namely, the creation and development of beneficial consumer products and services—or so the story went. Consequently, in September 2011, Congress passed the America Invents Act (AIA), a comprehensive law that overhauled the U.S. patent system.<sup>3</sup>

Since the AIA became effective in 2012, it has been easier to invalidate patents.<sup>4</sup> This is due, in large part, to the creation of new administrative proceedings at the U.S. Patent and Trademark Office (PTO), particularly *inter partes* review. These post-grant proceedings allow patents to be invalidated in a quicker and cheaper manner than pre-AIA, when patents were primarily challenged in federal court.<sup>5</sup> In addition to the changes wrought by the AIA, the U.S. Supreme Court has issued key decisions regarding patentable subject matter under 35 U.S.C. § 101 that arguably have undermined the strength of the U.S. patent system.<sup>6</sup>

Earlier this year, the International IP Commercialization Council (IIPCC) hosted a conference titled *Meeting the Challenges to America's Economic Future: Charting the Course in U.S. Intellectual Property and Innovation Policy* that explored these topics. As the conference transcripts published herein reflect, many stakeholders are worried that our innovation ecosystem is at risk

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1. See, e.g., Mark Lemley, Doug Lichtman & Bhaven Sampat, *What to Do About Bad Patents?*, REGULATION, Winter 2005, at 10, 12.

2. *Id.*

3. Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284-341 (2011) (codified as amended in scattered parts of 35 U.S.C.).

4. See, e.g., Brian J. Love & Shawn Amwani, *Inter Partes Review: An Early Look at the Numbers*, 81 U. CHI. L. REV. DIALOGUE 93, 100–01 (2014) (discussing how many patent claims have been successfully challenged through post-grant review proceedings at PTO).

5. See Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part II of II*, 21 FED. CIR. B.J. 539, 653 (2012) (explaining that Congress created post-grant review proceedings to provide a cheaper and more efficient alternative to litigation).

6. See *Alice Corp. v. CLS Bank Int'l*, 537 U.S. 208, 221 (2014).

because the pendulum has swung too far against the protection of patent rights.<sup>7</sup> Yet, others believe that the AIA is operating exactly how Congress intended and is creating a more balanced patent system that facilitates and encourages innovation.<sup>8</sup> With various legislative proposals introduced over the past few years—including the Support Technology & Research for Our Nation’s Growth and Economic Resilience (STRONGER) Patents Act<sup>9</sup> and the Targeting Rogue and Opaque Letters (TROL) Act<sup>10</sup>—Congress will have to decide what reforms to our patent system, if any, are necessary to “promote the Progress of Science and useful Arts.”<sup>11</sup>

### I. THE U.S. PATENT SYSTEM OF THE PAST

The patent system in the U.S. is as old as the nation itself.<sup>12</sup> Over the past two centuries, the country has experienced periods of stronger and weaker patent protection. The 1970s, for example, was a “low water mark” for patent rights thus prompting Congress to create the U.S. Court of Appeals for the Federal Circuit in 1982.<sup>13</sup> The Federal Circuit, which has exclusive jurisdiction over patent cases, heralded a new era of protectionism for patent rights that persisted until the AIA was passed in 2011.

For the first two decades after its creation, the Federal Circuit consistently issued decisions favoring patent owners thereby establishing the U.S. as a stronghold of patent protection. Without cataloguing each of these decisions, a few key ones are worth mentioning. Early on, in *Smith International, Inc. v. Hughes Tool Co.*,<sup>14</sup> the Federal Circuit announced a rule for near automatic injunctions upon a finding of patent infringement.<sup>15</sup> As a result, patent owners were armed with a powerful bargaining tool (*i.e.*, the threat of a permanent injunction) that could be used to secure license fees and settlements.<sup>16</sup> What is more, just two years after its creation, the Federal Circuit made it much more difficult to invalidate patents on obviousness grounds by adopting the “teaching-

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7. *See infra*.

8. *Id.* (discussing arguments of AIA supporters).

9. Support Technology and Research for Our Nation’s Growth and Economic Resilience (STRONGER) Patents Act of 2018, H.R. 5340, 115th Cong. (2018); S. 1390, 115th Cong. (2018).

10. Targeting Rogue and Opaque Letters (TROL) Act, H.R. 6370, 115th Cong. (2018); H.R. 2045, 114th Cong. (2016).

11. U.S. CONST. art I, § 8, cl. 8.

12. *Id.*; Patent Act of 1790, Ch. 7, 1 Stat. 109–112 (1790).

13. Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (codified in scattered sections of 28 U.S.C.).

14. 718 F.2d 1573 (Fed. Cir. 1983).

15. *Id.* at 1581 (“A court should not be reluctant to use its equity powers once a party has so clearly established his patent rights. We hold that where validity and continuing infringement have been clearly established . . . immediate irreparable harm is presumed.”).

16. *See eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring) (stating that patentees can employ injunctions “as a bargaining tool to charge exorbitant [licensing] fees”).

suggestion-motivation” test.<sup>17</sup> The court also expanded the scope of § 101, most notably in *State Street Bank & Trust Co. v. Signature Financial Group*<sup>18</sup> where it decided that business methods were patentable subject matter. This led to a significant increase in the number—and many believe a decrease in the quality—of patents granted by the PTO each year.<sup>19</sup> Finally, but perhaps most importantly, the Federal Circuit ensured its position as the primary policymaker in the patent arena when it held that the PTO lacked substantive rulemaking authority and refused to afford deference to the agency’s legal determinations.<sup>20</sup>

These and other Federal Circuit decisions created an environment ripe for abuse. With the more relaxed standards for obviousness and subject matter eligibility, the number of patent applications filed, as well as patents ultimately granted by the PTO, rapidly increased.<sup>21</sup> During this time, the PTO was severely under-resourced and patents were mistakenly granted.<sup>22</sup> Rather than commercializing those inventions, however, “bad” patents were often sold to entities that enforce patents through licensing and litigation, but don’t practice them.<sup>23</sup> These entities—alternatively referred to as patent enforcement entities (PAEs), non-practicing entities, and trolls—posed serious “holdup” problems for operating companies, particularly in the high tech sector.<sup>24</sup> The PAE business model, in essence, was to acquire low-value patents, and then demand that accused infringers take a license or face an infringement suit and a permanent injunction.<sup>25</sup> Because injunctions were virtually guaranteed under Federal Circuit law and patent suits were time-consuming, unpredictable, and expensive to defend, accused infringers often capitulated to PAEs and took licenses or settled.<sup>26</sup>

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17. *ACS Hosp. Sys., Inc. v. Montefiore Hosp.* 732 F.2d 1572, 1577 (Fed. Cir. 1984) (“Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination.”).

18. 149 F.3d 1368 (Fed. Cir. 1998).

19. See, e.g., Megan M. La Belle & Heidi Mandanis Schooner, *Big Banks and Business Method Patents*, 16 U. PENN. J. BUS. LAW 431, 448–50 (2014).

20. See, e.g., *Merck & Co. v. Kessler*, 80 F.3d 1543, 1549–50 (Fed. Cir. 1996).

21. U.S. Patent & Trademark Office, *U.S. Patent Statistics Chart Calendar Years 1963–2015* (last modified Dec. 14, 2018), available at [https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us\\_stat.htm](https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm) (reflecting a significant jump in the number of patents issued in the late 1990s after *State Street* was decided).

22. See, e.g., Mark A. Lemley & Bhaven Sampat, *Is the Patent Office a Rubber Stamp?*, 58 EMORY L.J. 181, 181–82 (2008).

23. Michael Risch, *Patent Troll Myths*, 42 SETON HALL L. REV. 457, 459 (2012).

24. Brian J. Love, *The Misuse of Reasonable Royalty Damages as a Patent Infringement Deterrent*, 74 MO. L. REV. 909, 931 (2009) (defining patent holdup as “the opportunistic use of patent rights to extract above-benchmark compensation”).

25. Megan M. La Belle, *Against Settlement of (Some) Patent Cases*, 67 VAND. L. REV. 375, 401 (2014).

26. *Id.*

This patent holdup problem spurred a call for reform.<sup>27</sup> Beginning in 2005, various bills were introduced in Congress to overhaul the patent system, but they died in committee.<sup>28</sup> Legislative reform efforts intensified the following year, and ultimately culminated in Congress enacting the AIA on September 16, 2011.<sup>29</sup> To be sure, the impact of the AIA has been significant, as discussed below. Yet, even before the landmark legislation passed, the courts were effecting major change in patent doctrine. Specifically, the Supreme Court made it harder for patent owners to defend against declaratory judgment actions<sup>30</sup> and get permanent injunctions,<sup>31</sup> and made it easier for accused infringers to prove that patented inventions were obvious under 35 U.S.C. § 103<sup>32</sup> or lacked proper subject matter under 35 U.S.C. § 101.<sup>33</sup> Thus, by the time the AIA went into effect in 2012, the U.S. patent system already looked markedly different than it had just a decade before.

## II. THE PRESENT STATE OF THE U.S. PATENT SYSTEM

The AIA, the most comprehensive patent reform legislation since 1952, fundamentally altered the way patents are issued and litigated in this country. For starters, it switched our priority system from “first-to-invent” to “first-to-file,” bringing the U.S. more in harmony with the rest of the world.<sup>34</sup> The new law also expanded the definition of prior art to include public disclosures outside the U.S.,<sup>35</sup> created a new defense to patent infringement of prior commercial use,<sup>36</sup> and gave the United States Patent & Trademark Office (PTO) greater control over its fees.<sup>37</sup> Arguably more significant than any of these changes, however, was the AIA’s creation of the Patent Trial and Appeal Board (PTAB) and various administrative proceedings for challenging patent validity *ex post*,

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27. See, e.g., Colleen V. Chien, *Holding Up and Holding Out*, 21 MICH. TELECOMM. & TECH. L. REV. 1, 1 (2014).

28. Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part I of II*, 21 FED. CIR. B.J. 435, 439 (2012).

29. *Id.*

30. *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 132 n.11 (2007) (rejecting “the Federal Circuit’s ‘reasonable apprehension of suit’ test,” and thus making it easier for alleged infringers to challenge patents via declaratory relief).

31. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391–92 (2006) (rejecting the Federal Circuit’s “general rule that courts will issue permanent injunctions against patent infringement”).

32. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–19 (2007) (holding that the Federal Circuit’s “teaching, suggestion, or motivation” test for obviousness should be flexibly applied, not as “rigid and mandatory formulas”).

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

34. Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 3(a), 125 Stat. 284–341 (2011) (codified as amended in scattered parts of 35 U.S.C.).

35. *Id.* § 3(b).

36. *Id.* § 5(a), § 273(a).

37. See, e.g., *id.* § 10(a) (allowing PTO to “set or adjust by rule any fee” for patent-related services or materials provided that any such change is used “to recover the aggregate estimated costs to the Office for processing, activities, services, and materials relating to patents”).

meaning after patents had already been granted.<sup>38</sup> These new proceedings, which include inter partes review (IPR), post-grant review (PGR), and covered business method review (CBM), were supposed to simplify patent litigation by providing a quicker and less expensive means for invalidating bad patents.<sup>39</sup> As one Federal Circuit judge explained it, “[t]he premise [was] that an adversarial evidentiary proceeding in the PTO [would] reliably resolve most issues of patent validity, without the expense and delay of district court litigation, and sometimes even before infringement has occurred.”<sup>40</sup>

The PTAB opened its doors in September 2012, immediately went to work, and has kept busy ever since. As of July 2018, a total of 8,874 post-grant petitions had been filed (8,190 IPRs, 557 CBMs, and 127 PGRs), far exceeding expectations about how attractive these proceedings would be to patent challengers.<sup>41</sup> One reason these proceedings have been so popular is because of the early success that challengers enjoyed. By way of example, a 2014 study showed that petitioners in IPRs were winning complete victories almost two-thirds of the time when they pursued petitions to a final decision.<sup>42</sup> These early statistics caused some, including the former Chief Judge of the Federal Circuit Randall Rader—one of the speakers at the IIPCC conference<sup>43</sup>—to view the PTAB as a “death squad”<sup>44</sup> and a “killing field”<sup>45</sup> whose inclination to invalidate patents undermines our economy by discouraging investment in innovation and technology.<sup>46</sup> What is more, critics have denounced the PTAB for complicating patent litigation rather than streamlining it, as Congress intended.<sup>47</sup> Rader and

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38. *Id.* §§ 6, 7, 18 at 299–316, 329–31.

39. *See* Matal, *supra* note 5, at 653.

40. *In re* Cuozzo Speed Techs., LLC, 793 F.3d 1268 (Fed. Cir. 2015) (Newman, J., dissenting), *aff'd sub nom.* Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131 (2016).

41. *See, e.g.*, Rochelle Cooper Dreyfuss, *Giving the Federal Circuit a Run for Its Money: Challenging Patents in the PTAB*, 91 NOTRE DAME L. REV. 235, 251 (2015) (“[T]hese statistics speak loudly about the public’s eagerness and ability to use these procedures to ‘weed out’ bad patents.”).

42. *See* Brian J. Love & Shawn Ambwani, *Inter Partes Review: An Early Look at the Numbers*, 81 U. CHI L. REV. DIALOGUE 93, 101 (2014).

43. *See infra* at 627.

44. Rob Sterne & Gene Quinn, *PTAB Death Squads: Are all Commercially Viable Patents Invalid?*, IP WATCHDOG (Mar. 24, 2014), <http://www.ipwatchdog.com/2014/03/24/ptab-death-squads-are-all-commercially-viable-patents-invalid/id=48642/> (quoting the comments of former Federal Circuit Chief Judge Randall Rader made at the 2013 AIPLA annual meeting in Washington, D.C.).

45. Erich Spangenberg, *Patent Predictions for 2015*, IPNAV BLOG (Jan. 2015), <http://www.ipnav.com/blog/erich-spangenbergs-patent-predictions-for-2015/>.

46. *See, e.g.*, A. Abbott, et al., *Crippling the Innovation Economy: Regulatory Overreach at the Patent Office*, REGULATORY TRANSPARENCY PROJECT OF THE FEDERALIST SOCIETY (Aug. 14, 2017), <https://regproject.org/wp-content/uploads/RTP-Intellectual-Property-Working-Group-Paper.pdf>.

47. *See, e.g.*, Gregory Dolin, M.D., *Dubious Patent Reform*, 56 B.C.L. REV. 881, 883 (2015) (“[M]ore opportunities to challenge issued patents also means more opportunities to engage in abusive practices to undermine legitimate patent rights.”)

Paul Michel, also a former Chief Judge of the Federal Circuit, both addressed that point at the conference, claiming that PTAB proceedings complicate patent litigation—for example, by using different standards than courts for claim construction and burden of proof—thus driving up costs by a significant margin.<sup>48</sup> Finally, detractors argue that the PTAB has failed to solve the patent troll problem, and instead has besieged operating companies, undermined the federal courts' role in patent law, and hampered innovation in the U.S.<sup>49</sup>

These critiques of the PTAB were explored in depth at the IIPCC conference. Speakers talked about how the increased risk of patent invalidation is discouraging research, development, and investment in innovation. Representatives from a cross-section of patent owners—the Cleveland Clinic, University of Michigan, IBM, Qualcomm, and Personalized Media Communications (PMC)—shared stories about how recent changes to the patent system are negatively impacting innovators “on the ground.”<sup>50</sup> Aaric Eisenstein, Vice President of Licensing Strategy for PMC, explained how repeated PTAB challenges cause significant strain on innovators, especially the individual inventors his company serves. More fundamentally, Eisenstein and others complain, the PTAB undermines the PTO's primary mission: issuing patents.<sup>51</sup>

Yet the stories shared at the IIPCC conference did not focus exclusively, or even primarily, on the PTAB. Instead, much of the discussion was devoted to two other issues wholly unrelated to the AIA: patentable subject matter under 35 U.S.C. § 101 and permanent injunctions in patent cases. As noted above, before Congress enacted the AIA, the Supreme Court undertook patent reform on its own by issuing a number of landmark decisions.<sup>52</sup> In a similar vein, the Supreme Court continued to tweak the patent system after the AIA, particularly with respect to § 101 in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*,<sup>53</sup> *Association for Molecular Pathology v. Myriad Genetics*,

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48. See *infra* at 627 (“The PTAB, quite aside from invalidations, adds per challenge something in the order of \$300 to \$600 thousand dollars per challenge and there are often multiple challenges.”) (Michel, P.); *id.* (“In many instances, [PTAB review] has added to the expense and the time of the proceeding without any real concomitant benefit.”) (Rader, R.).

49. *Id.* (“[The PTAB] hasn't even hit the main target it was supposed to hit, which is the patent troll case.”); *id.* at 628 (“[I]t seems to me the measure of accuracy and fairness—due process, if you will—in a PTAB should be by comparing it to what happens in a court of law.”) (Michel, P.); see also Abbott, *supra* note 46, at 4 (“The PTAB administrative tribunal is creating unnecessary costs for inventors and companies, and thus it is harming the innovation economy far beyond the harm of the bad patents it was created to remedy.”).

50. See *infra* at 634–645.

51. *Id.* at 639 (stating that the PTO “is directed to issuing valid patents. That's what it's for.”); see also Ryan Davis, *PTAB's "Death Squad" Label Not Totally Off-Base, Chief Says*, LAW360 (Aug. 14, 2014, 5:47 PM), <http://www.law360.com/articles/567550/ptab-s-death-squad-label-not-totally-off-base-chief-says> (quoting Randall Rader as saying that the PTO “was in tension with itself, with thousand[s] of examiners ‘giving birth’ to patents and hundreds of judges on the PTAB ‘acting as death squads, kind of killing property rights’”).

52. See *supra* notes 30–33.

53. 566 U.S. 66 (2012).

*Inc.*,<sup>54</sup> and *Alice Corp. v. CLS Bank International*.<sup>55</sup> This trilogy of cases reinvigorated the judicially-created exceptions to § 101—*i.e.*, that laws of nature, natural phenomena, and abstract ideas are excluded from patent protection—and attempted to set out a framework for determining when the exceptions apply.<sup>56</sup> Specifically, the *Alice* test requires courts to ask, first, whether the claims at issue are directed to a “patent-ineligible concept,” meaning one of the judicially-created exceptions.<sup>57</sup> If so, then is there an element or combination of elements in the claim that amounts to “significantly more than a patent upon the [ineligible concept] itself.”<sup>58</sup> With respect to this second prong, courts consider, *inter alia*, whether the invention’s functions are “well-understood, routine, conventional activit[ies]’ previously known to the industry.”<sup>59</sup>

As a result of this trilogy of cases, it became easier than ever to invalidate patents under § 101, often at much earlier stages of litigation.<sup>60</sup> Jeff Cicarella, for instance, explained how patents owned by the Cleveland Clinic on an important diagnostic tool were invalidated at the pleading stage under *Mayo* without claim construction or consideration of expert testimony.<sup>61</sup> Manny Schecter opined that recent § 101 jurisprudence has created major obstacles for companies like IBM working in Artificial Intelligence (AI) because AI “intersects with the judicial exception on abstractness but the Supreme Court has never ever told us what abstractness means.”<sup>62</sup> While the speakers recognize that the Federal Circuit and PTO are doing their best to bring some clarity to § 101, they seem to agree that legislation is necessary at this point.<sup>63</sup> Indeed, some believe that the best legislative fix would be for Congress to eliminate the judicially-created exceptions to § 101.<sup>64</sup>

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54. 569 U.S. 576 (2013).

55. 537 U.S. 208 (2014)

56. See, e.g., Amy Landers, *The Interconnections Between Entrepreneurship, Science, and the Patent System*, 2016 UTAH L. REV. 631, 634 (2016); Andres Sawicki, *The Central Claiming Renaissance*, 103 CORNELL L. REV. 645, 647 (2018).

57. *Alice*, 537 U.S. at 217.

58. *Id.*

59. *Id.* at 225 (citing *Mayo*, 566 U.S. at 73).

60. Paul R. Gugliuzza, *Quick Decisions in Patent Cases*, 106 GEO. L.J. 619, 651 (2018) (“[T]he invigorated patent eligibility requirement is, like Congress’s expansion of post-issuance proceedings at the PTO, another route to quick decisions on patent validity.”).

61. See *infra* at 642–43.

62. *Id.* at 635.

63. See, e.g., *id.* at 625 (acknowledging that there have been some “good panel decisions[s] of . . . the Federal Circuit” on § 101 issues, but “despite [the Federal Circuit’s] best efforts to cope,” there’s “chaos up and down the Courts”) (Kappos, D.); *id.* at 629 (“The [Patent] Office is doing everything it can to fix what it can fix, but legislation is needed to help fix other aspects of the system that were wired in by the AIA and we now know need to be adjusted. . . .”) (Kappos, D.).

64. *Id.* at 644 (“I like the idea I heard in the first panel about the legislative revision to 101 to do away with the exceptions to create clarity.”) (Pilz, B.).



Aside from patentable subject matter, the other topic that received a good deal of attention at the IIPCC conference was injunctive relief—again, something unrelated to the AIA. During the push for patent reform, one of the primary complaints from accused infringers was that patent trolls were using the threat of permanent injunctions to extort settlements.<sup>65</sup> Such threats were effective because, under Federal Circuit law at the time, injunctive relief was almost automatic once infringement had been established.<sup>66</sup> Thus, the earliest patent reform bill proposed to limit injunctive relief by requiring the court to “consider the fairness of the remedy in light of all the facts and the relevant interests of the parties associated with the invention.”<sup>67</sup> Congress never had the opportunity to act on this proposal, however, because the Supreme Court decided *eBay v. MercExchange*<sup>68</sup> in 2006, less than a year after the first reform bill was introduced. The *eBay* Court rejected the Federal Circuit’s automatic injunction rule and held that courts must consider the traditional four-factor standard for permanent injunctions in all types of cases.<sup>69</sup> As a consequence of *eBay*, it has become much more difficult for patent owners to obtain permanent injunctions.<sup>70</sup> In Paul Michel’s words, it is “almost impossible” to get a permanent injunction in the U.S. today, whereas injunctive relief is routine in other parts of the world.<sup>71</sup> Laurie Self, Vice President and Counsel for Government Affairs at Qualcomm, likewise claims that “we are now in a strange dynamic where it’s easier to get an injunction in China than it is in the United States.”<sup>72</sup> In fact, Self believes the inability to obtain injunctive relief is the biggest problem facing patent owners today.<sup>73</sup>

As you read the transcripts from the IIPCC conference and hear more about the problems with the current patent system in the U.S., keep in mind that—as is usually the case—there are two sides to the story. The changes that have come about in recent years were motivated, in large part, by evidence that the former patent system was inefficient, subject to abuse by trolls, and often unfair to

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65. See, e.g., Jason Rantanen, *Slaying the Troll: Litigation As an Effective Strategy Against Patent Threats*, 23 SANTA CLARA COMPUTER & HIGH TECH. L.J. 159, 166 (2006) (“[A] patent troll makes heavy use of the threat of litigation—and the threat of an injunction—to force a license of its patent.”).

66. See *Richardson v. Suzuki Motor Co. Ltd.*, 868 F.2d 1266, 1246–47 (Fed. Cir. 1989).

67. Patent Reform Act of 2005, H.R. 2795, 109th Cong. § 7.

68. 547 U.S. 388 (2006).

69. *Id.* at 391–92. The four factors include: (1) patent owner has suffered an irreparable injury; (2) remedies available at law are inadequate to compensate for that injury; (3) considering the balance of hardships between plaintiff and defendant, injunctive relief is warranted; and (4) public interest would not be disserved by an injunction. *Id.* at 391.

70. See, e.g., Jonathan M. Barnett, *Has the Academy Led Patent Law Astray?*, 32 BERKELEY TECH. L.J. 1313, 1317 (2017) (discussing the difficulty of obtaining injunctions post-*eBay*).

71. See *infra* at 626.

72. *Id.* at 644.

73. *Id.*

accused infringers.<sup>74</sup> If the current climate is less favorable to patent owners, supporters argue, that simply means the legislative and judicial reforms are working as intended. With respect to the PTAB, for example, its purpose was to provide an expert tribunal that “facilitate[s] both the validation of properly issued patents and the elimination of invalid patents.”<sup>75</sup> As the former Chief Judge of the PTAB said in response to criticism from Radar and others that the tribunal was invalidating too many patents, if the PTAB was not “doing some ‘death squadding,’ [it] would not be doing what the [AIA] calls on [the PTAB] to do.”<sup>76</sup> Moreover, while the PTAB initially invalidated patent claims at a seemingly high rate, the pace has slowed, suggesting that the worst of the bad patents were quickly and easily invalidated in the early years of the PTAB—exactly the result Congress hoped to achieve.<sup>77</sup> Perhaps more importantly, data indicate that the PTAB’s invalidation rate is actually quite similar to that of its European counterpart and U.S. district courts, thus undermining the claim that the PTAB is a “death squad.”<sup>78</sup>

Turning to the issues of § 101 and permanent injunctions, there are also arguments on both sides about the impact of the recent changes. For a long time, courts broadly interpreted the judicially-created exceptions to § 101 (*i.e.*, laws of nature, natural phenomena, and abstract ideas) to preclude the patenting of business methods,<sup>79</sup> computer software,<sup>80</sup> and certain types of innovations in

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74. See, e.g., Robert P. Merges, *Software and Patent Scope: A Report from the Middle Innings*, 85 TEX. L. REV. 1627, 1676 (2007) (discussing how the threat of injunctions gives patentees “highly disproportionate leverage over . . . accused infringer[s]” and how “[c]urrent institutional arrangements do not make it easy for companies to challenge the validity of ‘mistake’ patents”).

75. SAS Inst., Inc. v. ComplementSoft, LLC, 825 F.3d 1341, 1353 (Fed. Cir. 2016), *rev’d*, SAS Inst., Inc. v. Iancu, 138 S. Ct. 1348 (2018); see also Rochelle Cooper Dreyfuss, *Giving the Federal Circuit a Run for Its Money: Challenging Patents in the PTAB*, 91 NOTRE DAME L. REV. 235, 236 (2015) (explaining that Congress created post-grant review proceedings to “improve the likelihood that invalid patents would be quickly weeded out of the system” to reduce the burden on innovation caused by patent thickets”).

76. Ryan Davis, *PTAB’s “Death Squad” Label Not Totally Off-Base, Chief Says*, LAW 360, Aug. 14, 2014.

77. See, e.g., Brian Berliner, Sina Aria & Alex Boyadjian, *Busting 3 Myths About the Patent Trial and Appeal Board*, LAW 360, Aug. 9, 2018 (arguing that PTAB data shows that “AIA proceedings have been sufficiently fair to patent owners”).

78. See John R. Allison, Mark A. Lemley, & David L. Schwartz, *Our Divided Patent System*, 87 U. CHI. L. REV. 1073 (2015); Josh Landau, *A Little More than Forty Percent: Outcomes at the PTAB, District Court, and the EPO*, PATENT PROGRESS (May 1, 2018), <https://www.patentprogress.org/2018/05/01/a-little-more-than-forty-percent/>.

79. *Bilski v. Kappos*, 561 U.S. 593, 613 (2010) (“For centuries, it was considered well established that a series of steps for conducting business was not, in itself, patentable.”) (Stevens, J., concurring).

80. See, e.g., *Parker v. Flook*, 437 U.S. 584, 594 (1978) (holding that method for updating alarm limits during catalytic conversion was not subject to patent protection).

biotechnology.<sup>81</sup> That began to change in the 1980s and continued for the next decade or so as the Supreme Court and the Federal Circuit broadened the scope of what's patentable under § 101,<sup>82</sup> thus leading to a proliferation of new patents granted by the PTO.<sup>83</sup> When the Internet bubble burst in the 2000s, many of these software and business method patents were acquired by PAEs and enforced in unscrupulous ways, as discussed earlier.<sup>84</sup> During that same time frame, concerns were mounting that some biotechnology patents were harming patients and impeding innovation.<sup>85</sup> It was these circumstances that led to the Supreme Court's decisions in *Mayo*, *Myriad*, and *Alice* in an attempt to bring some balance back to our patent system.

Like the broad scope of § 101, the ease with which patent owners could get permanent injunctions was another primary impetus for patent reform.<sup>86</sup> The PAEs who acquired software and business method patents in the early 2000s used those patents, together with the threat of an injunction, to force accused infringers to pay nuisance settlements.<sup>87</sup> The Supreme Court addressed the injunctive relief problem in *eBay*, as discussed above. And while critics contend that *eBay* has made it difficult for patent owners across-the-board to get permanent injunctions, a study by Professor Christopher Seaman reaches a different conclusion.<sup>88</sup> Specifically, Seaman studied post-*eBay* patent decisions and concluded that district courts are systematically denying injunctive relief only for patent owners that do not compete directly with the accused infringer.<sup>89</sup> Direct competitors, by contrast, continue to seek and secure permanent injunctions when they have established infringement.<sup>90</sup>

The bottom line is that our current patent system looks the way it does for a reason. There was a strong consensus before the AIA that the patent system was out of whack and unfairly favored patent owners. Thus, a slew of changes was

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81. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 131 (1948) (holding that a composition of two naturally occurring bacteria was not patentable).

82. *See, e.g., Diamond v. Chakrabarty*, 447 U.S. 303, 310 (1980) (holding that a genetically-modified bacterium could be patented); *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998) (rejecting business methods exception to patentability as "ill-conceived").

83. Paul R. Gugliuzza & Mark A. Lemley, *Can a Court Change the Law by Saying Nothing?*, 71 *VAND. L. REV.* 765, 771 (2018); La Belle & Schooner, *supra* note 19, at 449.

84. Gugliuzza & Lemley, *supra* note 83, at 771.

85. *Id.*

86. *See, e.g., Merges, supra* note 74, at 1676.

87. Gugliuzza & Lemley, *supra* note 83, at 771.

88. Christopher B. Seaman, *Permanent Injunctions in Patent Litigation After eBay: An Empirical Study*, 101 *IOWA L. REV.* 1949 (2016).

89. *Id.* at 1953. Seaman points out that this *de facto* rule itself contradicts the *eBay* decision, which rejected a categorical approach to injunctive relief. *Id.*

90. *Id.* *See also* Jonathan M. Barnett, *Property As Process: How Innovation Markets Select Innovation Regimes*, 119 *YALE L.J.* 384, 441 n.140 (2009) (stating that post-*eBay* "direct competitors are almost always entitled to an injunction following a finding of validity and infringement whereas indirect competitors are almost always not so entitled").

implemented by Congress, the courts, and the PTO in an attempt to restore balance to the patent system. It is possible, of course, that the pendulum has swung too far in the other direction and patent owners are now at a distinct disadvantage for the reasons discussed at the IIPCC conference. Yet, bombarding the system with a whole host of new changes is not the solution to this problem. Instead, a piecemeal approach—which is already underway—is more likely to achieve the balance necessary for a well-functioning patent system.<sup>91</sup>

### III. THE FUTURE OF THE U.S. PATENT SYSTEM

When Donald Trump became President, it was predicted that the tenor of discussions on innovation policy would shift in a pro-patent owner direction.<sup>92</sup> In the two years since the election, those predictions have proven accurate. Evidence of this shift includes recent statements by the Head of DOJ's Antitrust Division that “patent holders rarely create antitrust concerns,”<sup>93</sup> and Trump's ceremonial signing of the ten millionth patent issued by the PTO.<sup>94</sup> Still, the clearest indicator of the Trump administration's patent policy priorities has appropriately come from the PTO Director, Andrei Iancu, himself.<sup>95</sup>

Shortly after he assumed office in early 2018, Iancu declared that the patent system is at a crossroads, and that “we cannot continue down the same path if we want to maintain our economic leadership.”<sup>96</sup> Iancu then set out two principal policy objectives: first, increasing the reliability of the patent grant, and second, creating a dialogue that is pro-innovation and pro-patents.<sup>97</sup> At the IIPCC conference, the Director re-emphasized this latter point about the narrative surrounding the patent system,<sup>98</sup> while simultaneously stressing the

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91. David J. Kappos & Christopher P. Davis, *Functional Claiming and the Patent Balance*, 18 STAN. TECH. L. REV. 365 (2015) (“The central premise of the patent system, and the key to its operability as an innovation engine, is balance.”).

92. Jeff John Roberts, *What Trump Means for the U.S. Patent System*, FORTUNE, Jan. 24, 2017, <http://fortune.com/2017/01/24/trump-patents/>.

93. Dennis Crouch, *Patents and Antitrust: Trump DOJ Sees Little Connection*, PATENTLY-O (Feb. 18, 2018), <https://patentlyo.com/patent/2018/02/patents-antitrust-connection.html>.

94. *U.S. Patent 10 Million*, USPTO, <https://10millionpatents.uspto.gov/patent-10-million.html> (last visited Dec. 15, 2018).

95. See, e.g., Gene Quinn, *PTO Proposes Rulemaking to Implement Phillips Claim Construction at PTAB*, IP WATCHDOG (May 8, 2018), <http://www.ipwatchdog.com/2018/05/08/pto-proposed-rulemaking-phillips-claim-construction-ptab/id=96995/> (explaining that Iancu “has been giving speeches raising the hopes of patent owners”).

96. *Remarks by Director Andrei Iancu at U.S. Chamber of Commerce Patent Policy Conference*, USPTO (Apr. 11, 2018), <https://www.uspto.gov/about-us/news-updates/remarks-director-andrei-iancu-us-chamber-commerce-patent-policy-conference>.

97. *Id.*

98. See *infra* at 648 (“[T]he community needs to have confidence in the [patent] system and relentless criticism of the system from any side reduces the industry's confidence in the system”).

need for balance.<sup>99</sup> More recently, however, Iancu's remarks have taken a decidedly pro-patent owner turn. In a talk to the Eastern District of Texas Bar Association, Iancu called patent troll concerns "Orwellian 'doublespeak'"<sup>100</sup> and issued a warning:

In our zeal to eliminate "trolls" and "the bad patents" they allegedly use to terrorize society, we have overcorrected and risk throwing out the baby with the bathwater. This must now end, and we must restore balance to our system.... [S]caring our inventors and our entrepreneurs is harmful. And scaring our government officials drives towards over-broad policies that, on balance, inhibit innovation.<sup>101</sup>

Iancu criticized those who complain about trolls as anti-innovation, and proclaimed that the PTO is now focused on inventors and the benefits they bestow on the public.<sup>102</sup>

More important than these platitudes, however, are the key policy initiatives that Iancu has implemented at the PTO. For one, shortly after Iancu took the helm, the PTO issued guidance to its examining corps on § 101 based on a recent Federal Circuit decision in *Berkheimer v. HP Inc.*,<sup>103</sup> which provided some clarity on how to apply the second prong of the *Alice* test.<sup>104</sup> While it's too soon to understand the full impact of the *Berkheimer* memo, it is expected to counteract the *Myriad/Mayo/Alice* trilogy of cases and allow more patent applications to pass muster under § 101.<sup>105</sup> Indeed, early data indicate that is precisely what's happening, as the PTAB is overturning significantly more § 101 rejections than before *Berkheimer*.<sup>106</sup>

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99. *Id.* ("I caution balance and an even-keeled approach . . . . From the get-go, the founders believed that there needs to be a balance in the system inherently for the system to work it needs to be balanced.").

100. *Remarks by Director Iancu at the Eastern District of Texas Bar Association Inaugural Texas Dinner*, USPTO (Oct. 18, 2018), <https://www.uspto.gov/about-us/news-updates/remarks-director-iancu-eastern-district-texas-bar-association-inaugural-texas>.

101. *Id.*

102. *Id.*

103. 881 F.3d 1360 (Fed. Cir. 2018).

104. USPTO, MEMORANDUM RE CHANGES IN EXAMINATION PROCEDURE PERTAINING TO SUBJECT MATTER ELIGIBILITY (Apr. 19, 2018), <https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF>; see also John M. Rogitz, *USPTO Memo Explains Changed Alice Step 2B to Examiners*, IP WATCHDOG (Apr. 20, 2018), <http://www.ipwatchdog.com/2018/04/20/uspto-memo-changed-alice-step-2b-examiners/id=96153/>.

105. See, e.g., Julian Asquith & Tobias Eriksson, *Worldwide: The Berkheimer Memorandum—Good News For Software Patents In The U.S.*, MONDAQ (July 16, 2018), <http://www.mondaq.com/uk/x/719506/Patent/The+Berkheimer+Memorandum> ("[W]e are cautiously optimistic that the Berkheimer memorandum heralds a significant change to the interpretation of subject-matter eligibility in the US.").

106. Karam Saab, *Overcoming Subject Matter Rejections: The Berkheimer Shift*, LAW 360 Aug. 6, 2018, <https://www.law360.com/articles/1070216/overcoming-subject-matter-rejections-the-berkheimer-shift> (noting a 23% increase in reversal rates).

In addition to addressing § 101, the PTO has also effected important changes with respect to PTAB. By way of example, the PTO has amended the PTAB Trial Practice Guide to allow patentees to file sur-replies as a matter of right, effectively granting them the “last word” in PTAB proceedings before the oral hearing.<sup>107</sup> Even more significant, the day before the IIPCC conference, the PTO proposed new rules regarding the claim construction standard that PTAB should use.<sup>108</sup> Having received and considered hundreds of comments, the agency subsequently promulgated the claim construction rules, which became effective on November 13, 2018.<sup>109</sup> In short, the new rules mandate that PTAB interpret disputed patent claim terms in accordance with *Phillips v. AWH Corp.*<sup>110</sup>—the same standard that district courts use—rather than the “broadest reasonable interpretation” standard that PTAB had been using before.<sup>111</sup> As with the changes to § 101, only time will tell the extent to which this new standard has affected PTAB proceedings. But the expectation is that the *Phillips* standard will make it somewhat more difficult to challenge patents in IPR, and thus patent owners should gain from this switch.<sup>112</sup>

Along with the PTO, the courts have taken steps that may very well shift the tide in favor of patent owners. Specifically, the Federal Circuit and Supreme Court have issued opinions in crucial cases that inure to the benefit of patent owners. As mentioned above, *Berkheimer* has made it more difficult to invalidate patents under § 101, particularly at an early stage of the proceeding, because the Federal Circuit held that the second prong of the *Alice* test— “[w]hether something is well-understood, routine, and conventional to a skilled artisan at the time of the patent”—is a question of fact that must be proven by clear and convincing evidence.<sup>113</sup> The court went on to explain that “[t]he mere fact that something is disclosed in a piece of prior art . . . does not mean it was well-understood, routine, and conventional.”<sup>114</sup> In other words, the court clarified, proving the second prong of the *Alice* test takes more than showing

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107. See Ryan Davis, *PTAB Practice Guide Changes Will Aid Patent Owners*, LAW 360, Aug. 14, 2018, <https://www.law360.com/articles/1072738/ptab-practice-guide-changes-will-aid-patent-owners>.

108. See *infra* at 649–50 (Iancu, A.) (discussing the changes to PTAB the PTO has the power to make).

109. Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51340 (Nov. 13, 2018).

110. 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

111. See Dennis Crouch, *Final Rule Package: Phillips Standard to be Used by PTAB in IPR Claim Construction*, PATENTLY-O (Oct. 10, 2018), <https://patentlyo.com/patent/2018/10/phillips-standard-construction.html>.

112. *Id.*; see also Justin L. Krieger & Christopher Thomas, *Final Rules: PTAB Adopts Phillips Standard for AIA Trials*, KILPATRICK TOWNSEND (Oct. 11, 2018), <https://www.kilpatricktownsend.com/Insights/Alert/2018/10/Final-Rules-PTAB-Adopts-Phillips-Standard-for-AIA-Trials> (“[T]he shift to the *Phillips* standard will be seen as a victory for patent owners since claims may be construed more narrowly and less likely to read on the prior art.”).

113. 881 F.3d at 1368.

114. *Id.* at 1369.

that the technology was publicly available.<sup>115</sup> Thus, although the ultimate § 101 question is a legal one, there are factual determinations underpinning that decision that frequently cannot be made at the pleadings or summary judgment stage of a lawsuit.<sup>116</sup> Assuming it remains good law,<sup>117</sup> *Berkheimer* will push § 101 decisions later in the litigation—a welcome change for patent owners.<sup>118</sup>

Moreover, the Supreme Court's decision in *SAS Institute, Inc. v. Iancu*<sup>119</sup> is also likely to move patent policy in a pro-patent owner direction.<sup>120</sup> *SAS* held that when the PTAB institutes an inter partes review, it must issue a final written decision addressing the patentability of all of the claims the petitioner has challenged.<sup>121</sup> This means that partial institutions are no longer permitted, which may well cause PTAB to institute fewer IPRs in the first place as a way of managing its workload.<sup>122</sup> And even when the PTAB does institute IPR, patent owners should still benefit because the final decision will likely uphold the patentability of some of the challenged claims. Due to the AIA's estoppel provisions, those patent claims upheld by the PTAB should then be immune

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115. Michael Borella, *Berkheimer v. HP Inc.*, PATENT DOCS (Feb. 8, 2018), <https://www.patentdocs.org/2018/02/berkheimer-v-hp-inc-fed-cir-2018.html> (“[T]he Court is distinguishing between whether a technology is ‘known’ in the sense of § 102 . . . and whether one of ordinary skill would find this technology to be well-understood, routine, and conventional.”).

116. *Berkheimer*, 881 F.3d at 1368.

117. Although the Federal Circuit denied the petition for rehearing *en banc*, see 890 F.3d 1369 (May 31, 2018), HP has filed a petition for certiorari with the Supreme Court, to which the Court requested a response. See *HP Inc. v. Berkheimer*, SCOTUSBLOG, <http://www.scotusblog.com/case-files/cases/hp-inc-v-berkheimer/> (last visited Dec. 15). Several amicus briefs have already been filed in the case. *Id.*

118. See Scott Graham, *Federal Circuit Won't Budge From Decision Reining in 'Alice'*, NAT'L L.J. (May 31, 2018) (stating that *Berkheimer* “would shift leverage back to the patent owner side”); Gugliuzza, *supra* note 60, at 677 (explaining that recent changes to patent doctrine, including the § 101 trilogy of cases, have facilitated quick decisions in patent disputes that “allow defendants to avoid liability for infringement . . . [but] offer little help to patentees seeking quick adjudication of meritorious claims”).

119. 138 S. Ct. 1348 (2018).

120. See, e.g., Dennis Crouch, *SAS Institute v. Iancu: Shifting IPR and Litigation Strategies*, PATENTLY-O (Apr. 24, 2018), <https://patentlyo.com/patent/2018/04/institute-litigation-strategies.html>.

121. 138 S. Ct. at 1359–60.

122. See *SAS*, 138 S. Ct. at 1360 (Ginsburg, J., dissenting) (“[T]he Patent Trial and Appeal Board could simply deny a petition containing challenges having no ‘reasonable likelihood’ of success.”); see also Gene Quinn & Renee C. Quinn, *SAS: When the Patent Office Institutes IPR It Must Decide Patentability of All Challenged Claims*, IP WATCHDOG (Apr. 25, 2018) (Comments of Terry Clark), <http://www.ipwatchdog.com/2018/04/25/sas-patent-office-institutes-ipr/id=96297/> (“[T]he Board may exercise its discretion more often in declining to institute IPRs”); *id.* (Comments of Terry Clark) (“[T]his decision may have the unexpected result of reducing the percentage of petitions actually granted.”); Saurabh Vishnubhakat, *First Steps After SAS Institute*, PATENTLY-O (Apr. 27, 2018), <https://patentlyo.com/patent/2018/04/first-steps-institute.html> (“The incentive of the Patent Office, meanwhile, is likely to deny institution relatively more often in the wake of *SAS Institute*, at least initially.”).

from further challenge.<sup>123</sup> Simply put, *SAS* has put “greater teeth” into the PTAB estoppel provisions in a way that will favor patent owners.<sup>124</sup>

It is possible, of course, that these changes—the new claim construction standard, *Berkheimer*, and *SAS*—will not have the positive effect for patent owners that many have predicted.<sup>125</sup> But they could, and it’s simply too early to know for sure. What we do know, however, is that making a bunch of changes to the patent system at once—which is arguably what happened leading up to the AIA—can swing the pendulum too far in the other direction. While legislation like the STRONGER Patents Act may be attractive in theory, there is little chance that such a major overhaul would achieve the delicate balance that our patent system requires.<sup>126</sup> The better approach, which is well underway since Director Iancu took office, is incremental reform led by the PTO—the entity that should serve as the nation’s primary policymaker on innovation.<sup>127</sup> Admittedly, this takes more time and patience than comprehensive reform like the STRONGER Patents Act, and thus is less responsive to the short-term interests of certain stakeholders.<sup>128</sup> Yet for the public—the primary beneficiary of our patent system<sup>129</sup>—history makes clear that it’s the right path to take.<sup>130</sup>

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123. Berliner et al., *supra* note 77 (arguing that *SAS* “may limit the petitioner’s ability to assert secondary challenges in the district court”).

124. Quinn & Quinn, *supra* note 122 (Comments of Sharon Israel & Van Lindberg); Saurabh Vishnubhakat, *Renewed Efficiency in Administrative Patent Revocation*, 1, 14 (2018), available at <https://ssrn.com/abstract=3237841> (explaining that, after *SAS*, “the only way to entertain any arguments is to adjudicate all arguments,” which comes with “the full scope of estoppel”).

125. To be sure, some predict that the net effect of *SAS* will be to help petitioners, not patent owners, because it will: (1) complicate PTAB proceedings and make them even more expensive than they already are, (2) make district courts more likely to grant stays pending the outcome of PTAB proceedings, and (3) put more of the patent owner’s claims at risk of invalidation. *See, e.g., id.* (Comments of Stephen Kunin, Rubén Muñoz, & S. Benjamin Pleune).

126. *See, e.g.,* Claude Barfield & John E. Calfee, *Congress’s Patent Mistakes*, WALL ST. J., Oct. 29, 2007, at A18 (arguing that Congress should not pass comprehensive legislation that culminated in AIA because “[i]ncremental reform is a better idea than radical change”); Colleen V. Chien, *Reforming Software Patents*, 50 HOUS. L. REV. 325, 326 (2012) (“[H]istory teaches away from broad based legislative reform and towards narrowly tailored incremental reform with lessons for today.”).

127. *See* Megan M. La Belle, *Public Enforcement of Patent Law*, 96 B.U. L. REV. 1865, 1920–21 (2016) (discussing the PTO’s policymaking role); Jonathan S. Masur, *Regulating Patents*, 2010 SUP. CT. REV. 275, 306 (2010) (same).

128. *See, e.g.,* Daniel Nazer, *How the Stronger Patents Act Would Send Innovation Overseas*, EFF (June 23, 2017), <https://www.eff.org/deeplinks/2017/06/how-the-stronger-patents-act-would-send-innovation-overseas> (“The STRONGER Patents Act shows how far certain patent owners are willing to go to serve their narrow interests at the expense of everyone else.”).

129. *See* U.S. CONST. art 1, § 8, cl. 8 (noting that patents are to “promote the Progress of Science and useful Arts”).

130. Arti K. Rai, *Growing Pains in the Administrative State: The Patent Office’s Troubled Quest for Managerial Control*, 157 U. PA. L. REV. 2051, 2081 (2009) (discussing the benefit for our patent system of incremental reform by the PTO).