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# Balancing the Competing Functions of Patent Post-Grant Proceedings

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## ARTICLE

**BALANCING THE COMPETING FUNCTIONS OF  
PATENT POST-GRANT PROCEEDINGS**

*Michael Xun Liu\**

*Since the 1980s, the United States Patent and Trademark Office has amended or revoked patents through post-grant proceedings. These are quasi-judicial proceedings that are often used to resolve patent disputes. But aside from adjudicating private disputes, post-grant proceedings also aim to protect the public against invalid patents, create more certainty in patent rights, and bolster confidence in the patent system. These functions are often described as “examinational” because they rely on the PTO’s ability to reexamine the validity of issued patents.*

*This Article explores the extent to which post-grant proceedings under the America Invents Act (AIA) perform examinational functions. Although post-grant proceedings have proven effective at adjudicating patent validity during litigation, they have been less effective at fulfilling their examinational functions. In particular, several provisions of the AIA undermine the patent office’s ability to protect the public from invalid patents, while others discourage early resolution of patent validity and scope. To assess the potential benefits and drawbacks of reform, this Article also looks at the European Patent Office’s experience with post-grant proceedings. Despite their problems, European proceedings have been fairly successful at screening patents and improving patent quality. As such, they may offer useful insights for the U.S. patent system.*

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\*J.D. 2014, University of Michigan Law School. The views expressed in this Article are the author’s alone, and do not represent the views of any private or government institutions.

158

*J. INTELL. PROP. L.*

[Vol. 25:2

I. INTRODUCTION.....	159
II. COMPETING FUNCTIONS OF POST-GRANT PROCEEDINGS.....	163
A. THE EXAMINATIONAL FUNCTION .....	165
B. THE ADJUDICATIVE FUNCTION.....	169
C. THE “HYBRID” APPROACH UNDER THE AMERICA INVENTS ACT .....	172
III. LIMITS OF THE EXAMINATIONAL FUNCTION UNDER THE AIA.....	176
A. LACK OF INDEPENDENT EXAMINATION .....	179
B. ESTOPPEL EFFECTS OF AIA REVIEWS.....	185
IV. COMPARISON WITH THE EUROPEAN MODEL.....	190
A. POST-GRANT PROCEEDINGS IN EUROPE.....	192
B. LESSONS FROM OPPOSITION PROCEEDINGS.....	195
V. CONCLUSION.....	200

## I. INTRODUCTION

During Supreme Court arguments in *Oil States Energy Services v. Green's Energy Group*, Chief Justice Roberts asked whether counsel believed that “[i]f you want the sweet of having a patent, you’ve got to take the bitter that the government might reevaluate it at some subsequent point.”<sup>1</sup> Setting aside any constitutional problems with this logic, it seems reasonable to assume that if the Patent and Trademark Office (“PTO”) decides whether to grant patents, then the agency should also correct its own mistakes by amending or revoking improperly issued patents. Nevertheless, the task of reviewing issued patents has been traditionally left to district courts, and the PTO has only been able to revoke improperly granted patents through post-grant proceedings in the past few decades.<sup>2</sup> How the PTO conducts post-grant proceedings, and whether its procedures are consistent with underlying policy goals, remains a contentious topic.

Since the America Invents Act (AIA) became law, the PTO’s Patent Trial and Appeal Board (Board) has started playing a much larger role in reevaluating patents.<sup>3</sup> Through AIA Reviews, the Board now decides validity in a significant number of patent disputes, thus taking on a task that was previously reserved almost exclusively for district courts.<sup>4</sup> Viewing post-grant proceedings as only a substitute for litigation, however, overlooks important policy goals. Unlike district court litigation, post-grant proceedings should do more than adjudicate private disputes—they are also intended to protect the public from overbroad patents and promote certainty in patent rights.<sup>5</sup> These functions have been described as “examinational” because they rely on the PTO’s ability to reexamine the validity of issued patents.<sup>6</sup> Substantively and procedurally, there are differences between an adjudicative proceeding and one that is more examinational. For example, a proceeding that protects the public from overbroad patents should give the PTO wide discretion to revoke patents that

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<sup>1</sup> Transcript of Oral Argument at 31–32, *Oil States Energy Serv., LLC v. Green’s Energy Grp., LLC*, No. 16-712 (U.S. Nov. 27, 2017), [https://www.supremecourt.gov/oral\\_arguments/argument\\_transcripts/2017/16-712\\_879d.pdf](https://www.supremecourt.gov/oral_arguments/argument_transcripts/2017/16-712_879d.pdf).

<sup>2</sup> Kenneth R. Adamo, *Patent Reexamination*, 58 CHI. KENT L. REV. 59, 59 (1981).

<sup>3</sup> The AIA created three types of post-grant proceedings: post-grant review, *inter partes* review, and covered business method review. Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011). This Article refers to them collectively as AIA Reviews.

<sup>4</sup> By the end of 2017, the PTO received over 7,900 petitions for AIA reviews, 1912 of which have reached a decision on the merits. PATENT TRIAL AND APPEAL BOARD, TRIAL STATISTICS 11 (Dec. 2017), [https://www.uspto.gov/sites/default/files/documents/Trial\\_Statistics\\_2017-12-31.pdf](https://www.uspto.gov/sites/default/files/documents/Trial_Statistics_2017-12-31.pdf) (last visited Jan. 17, 2018) [hereinafter 2017 TRIAL STATISTICS].

<sup>5</sup> *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2143–44 (2016).

<sup>6</sup> *Id.*

were improperly granted.<sup>7</sup> By contrast, a proceeding that is solely adjudicative is more likely to limit PTO's role to assessing the parties' arguments, much like a district court judge or jury.<sup>8</sup>

Compared to pre-AIA proceedings like *ex parte* reexaminations, AIA Reviews are meant to be more adjudicative than examinational.<sup>9</sup> Arguments are made to a panel of administrative patent judges instead of patent examiners, and the proceedings allow for limited discovery and an oral hearing.<sup>10</sup> In other respects, however, AIA Reviews remain somewhat examinational. For example, the PTO does not give a presumption of validity for challenged claims.<sup>11</sup> And “[p]arties that initiate the proceeding need not have a concrete stake in the outcome; indeed, they may lack constitutional standing.”<sup>12</sup> Because of these mixed characteristics, AIA Reviews are typically described as “hybrid” proceedings with both adjudicative and examinational elements.<sup>13</sup>

Whether AIA Reviews actually achieve the policy goals of a “hybrid” proceeding, however, remains debatable. In theory, AIA Reviews advance policy goals consistent with patent examination, such as protecting the public from overbroad claims and promoting certainty in patent rights.<sup>14</sup> But in practice, the Board's role in AIA Reviews tends to be more limited.<sup>15</sup> The Board does not independently evaluate validity, and relies almost exclusively on the parties' arguments.<sup>16</sup> Although patent owners have the right to amend their claims, few succeeded in doing so within the first few years of the AIA.<sup>17</sup> So instead of narrowing claims to keep “patent monopolies . . . within their legitimate scope,”<sup>18</sup> the Board's decision is usually limited to affirming or invalidating challenged patents, just like district court decisions. Moreover, the majority of AIA Reviews are conducted alongside litigation involving the same patents, and the district court proceedings are often stayed pending the Board's decision.<sup>19</sup>

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<sup>7</sup> Mark D. Janis, *Rethinking Reexamination: Toward A Viable Administrative Revocation System for U.S. Patent Law*, 11 HARV. J.L. & TECH. 1, 13–14 (1997).

<sup>8</sup> *Id.* at 36.

<sup>9</sup> *Cuozzo*, 136 S. Ct. at 2144.

<sup>10</sup> 35 U.S.C. §§ 6, 316.

<sup>11</sup> 35 U.S.C. § 316 (establishing preponderance of the evidence standard for invalidity).

<sup>12</sup> *Cuozzo*, 136 S. Ct. at 2144.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> See *infra* Part III.A.

<sup>16</sup> *Id.*

<sup>17</sup> UNITED STATES PATENT AND TRADEMARK OFFICE, PATENT TRIAL AND APPEAL BOARD MOTION TO AMEND STUDY 4 (Apr. 30, 2016), <https://www.uspto.gov/sites/default/files/documents/2016-04-30%20P.T.A.B.%20MTA%20study.pdf>.

<sup>18</sup> *Cuozzo*, 136 S. Ct. at 2134–2144.

<sup>19</sup> Saurabh Vishnubhakat et al., *Strategic Decision Making in Dual PTAB and District Court Proceedings*, 31 BERKELEY TECH. L.J. 45, 69 (2016) (“[A]bout 86.8 % of IPR or CBM challenged

Therefore, one commonly held view is that AIA Reviews essentially supplant district court validity litigation with an administrative proceeding that is more favorable to challengers.<sup>20</sup>

Accordingly, the reality of AIA Reviews can seem inconsistent with its policy goals. This Article examines the source of this disconnect, and identifies two issues that undermine the examinational function of AIA Reviews. First, the Board's ability to independently evaluate patentability is limited, so it relies almost exclusively on the petitioners' arguments to revoke claims.<sup>21</sup> From the standpoint of protecting the public against invalid patents, this becomes problematic if the patentee settles with the petitioner or amends the claims in a way that eliminates the risk of infringement for the petitioner. In these circumstances, the petitioner may not have any reason to argue for invalidity. This issue was partly why the PTO initially decided to require patent owners to prove the patentability of proposed amended claims in AIA Reviews.<sup>22</sup> By doing so, the Board tried to protect the public from invalid patents by forcing patent owners to show that its new claims are patentable, since the Board cannot examine the claims itself.<sup>23</sup>

Second, the AIA's estoppel rules discourage early resolution of patent validity. Post-grant proceedings were created in part because improperly granted patents have negative social and economic consequences even if they are not litigated.<sup>24</sup> Thus, it was important to provide a means of challenging invalid patents before they are asserted in court.<sup>25</sup> Likewise, early resolution of validity is also beneficial because that is "when patent holders have invested the least resources and the opportunity for third parties to change course in the market is

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patents are also being litigated in the federal courts."); Andrew J. Gray & Ehsun Forghany, *Avoiding a Patent War on Two Fronts*, in 2017 PTAB DIGEST: THE LATEST TRENDS AND DEVELOPMENTS IN POST-GRANT PROCEEDINGS 26 (2017), [https://www.morganlewis.com/-/media/files/publication/report/ptab-post-grant-proceedings\\_fin\\_screen.ashx](https://www.morganlewis.com/-/media/files/publication/report/ptab-post-grant-proceedings_fin_screen.ashx).

<sup>20</sup> Peter J. Pitts, *'Patent Death Squads' vs. Innovation*, WALL STR. J. (June 10, 2015), <https://www.wsj.com/articles/patent-death-squads-vs-innovation-1433978591?mg=prod/accounts-wsj>; Stacy Lewis & Tom Irving, *Very Few Appreciated Just How Bad AIA Inter Partes Reviews (IPRs) Would Be for Patent Owners, Although IPR Denials Have Been, for Patent Owners, A Glimmer of Hope*, 11 BUFF. INTELL. PROP. L.J. 28, 36 (2015).

<sup>21</sup> Amendments to the Rules of Practice for Trials Before the Patent Trial and Appeal Board, 81 Fed. Reg. 18750, 18754 (Apr. 1, 2016) (Final Rule) [hereinafter 2016 Rule Amendments].

<sup>22</sup> *Id.* (explaining how "the Office has set forth rules for motions to amend that account for the absence of an independent examination by the Office").

<sup>23</sup> *Id.*

<sup>24</sup> Christopher R. Leslie, *The Anticompetitive Effects of Unenforced Invalid Patents*, 91 MINN. L. REV. 101, 104 (2006); Michael D. Frakes & Melissa F. Wasserman, *Does the U.S. Patent and Trademark Office Grant Too Many Bad Patents: Evidence from a Quasi-Experiment*, 67 STAN. L. REV. 613, 620 (2015).

<sup>25</sup> Leslie, *supra* note 24; Frakes & Wasserman, *supra* note 24.

greatest.”<sup>26</sup> The AIA, however, does little to encourage early challenges to patent validity. Instead, the statute imposes broad estoppel for post-grant review (“PGR”) petitions, which pushes parties to wait and challenge validity through IPR, and often only after litigation becomes imminent.<sup>27</sup> So even though an important advantage of post-grant proceedings is the ability to resolve patent rights before litigation, the reality is that most AIA Reviews are directed to patents that are being adjudicated in district court anyways.<sup>28</sup>

The U.S. patent system is not alone in trying to balance competing policy visions of post-grant proceedings. Like the PTO, the European Patent Office (“EPO”) also provides a “first window” to challenge the validity of recently issued patents.<sup>29</sup> Since the 1980s, third-parties in Europe could file an opposition proceeding to challenge patent validity within nine-months of issuance.<sup>30</sup> These proceedings have their own problems, including their tendency to drag on for years.<sup>31</sup> Nevertheless, EPO opposition proceedings provide a useful contrast with AIA Reviews. Around five percent of all European Patents are opposed, and this procedure has become an important tool for challenging validity, particularly with respect to economically important patents.<sup>32</sup> Although it is neither feasible nor desirable to make AIA Reviews the same as EPO oppositions, the PTO could adopt certain features like narrowing estoppel for PGR to encourage earlier challenges to patent validity, and giving the PTO more authority to independently examine claims, at least in PGR. Doing so should allow the PTO to better carry out the examinational functions of AIA Reviews.

This Article proceeds in three parts. Section I reviews the adjudicative and examinational aspects of post-grant proceedings, and describes how such proceedings have evolved in the U.S. Section II looks at how certain features of the AIA undermines its examinational function. It explores why the PTO is constrained to the petitioner’s invalidity arguments and how, in some circumstances, this limitation can undermine the policy goals of AIA Reviews. This section also looks at how the AIA’s estoppel rules effectively discourage

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<sup>26</sup> Stephen G. Kunin & Anton W. Fetting, *The Metamorphosis of Inter Partes Reexamination*, 19 BERKELEY TECH. L.J. 971, 976 (2004).

<sup>27</sup> See *infra* Part III.B.

<sup>28</sup> Vishnubhakat et al., *supra* note 19, at 69.

<sup>29</sup> Filip De Corte et al., *ALA Post-Grant Review & European Oppositions: Will They Work in Tandem, or Rather Pass Like Ships in the Night?*, 14 N.C. J. L. & TECH. 93, 98–112 (2012).

<sup>30</sup> *Id.*

<sup>31</sup> Jonathan Radcliffe, *The European Patent Office Introduces a “Go-Faster” Opposition Process*, Reed Smith LLP (June 21, 2016), <https://www.reedsmith.com/en/perspectives/2016/06/the-european-patent-office-introduces-a-gofaster-o>.

<sup>32</sup> Bronwyn H. Hall & Dietmar Harhoff, *Post-Grant Reviews in the U.S. Patent System-Design Choices and Expected Impact*, 19 BERKELEY TECH. L.J. 989, 1006 (2004); Stuart Graham et al., *Post-Issue Patent Quality Control: A Comparative Study of US Patent Re-Examinations and European Patent Oppositions*, (Nat’l Bureau of Econ. Research, Working Paper No. 8807, 2002).

petitions within the nine-month “first window” period for PGR. Section III compares AIA Reviews to the EPO’s opposition proceedings. Although opposition proceedings may seem similar to PGR, the former is generally considered more effective at screening out dubious patents early.<sup>33</sup> Accordingly, this section examines whether the PTO should emulate certain features of opposition proceedings.

## II. COMPETING FUNCTIONS OF POST-GRANT PROCEEDINGS

Broadly speaking, allowing the PTO to revoke or amend issued patents serves two purposes.<sup>34</sup> The first is to fix defects in the PTO’s original examination, and is often described as “examination” or “curative.”<sup>35</sup> At its core, this aspect of post-grant proceedings aims to protect the public from overbroad or invalid patents, which can skew market competition and deter innovation.<sup>36</sup> In theory, giving the PTO a chance to correct its errors also bolsters certainty in patent rights and the presumption of validity generally.<sup>37</sup> The second function is to provide an alternative to district court validity litigation. Instead of trying to fix or improve patents for the public benefit, this aspect of administrative patent review tries to resolve disputes between private parties more efficiently and accurately.<sup>38</sup>

The legal literature has long recognized these two functions of post-grant proceedings. For instance, Professor Mark Janis describes how administrative review could be a curative mechanism “through which the public could compel the PTO to correct its own errors, even in the absence of any infringement proceedings.”<sup>39</sup> Not only would this eliminate bad patents, but “courts reviewing those same patents in the course of infringement litigation would have greater assurance that the PTO had conducted a proper prior art search and had applied the results of that search thoughtfully.”<sup>40</sup> Professor Janis distinguished this aspect of administrative review from “litigation avoidance,” which aimed to “provide a specialized tribunal to resolve disputes in lieu of traditional court adjudication.”<sup>41</sup>

The distinction between the examination and adjudicative aspects of post-grant proceedings also has practical consequences. For example, restricting

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<sup>33</sup> See *infra* Part IV.

<sup>34</sup> Janis, *supra* note 7, at 23.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> Mark D. Janis, *Inter Partes Patent Reexamination*, 10 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 481, 483–84 (2000).

<sup>39</sup> Janis, *supra* note 7, at 13–14.

<sup>40</sup> *Id.* at 15.

<sup>41</sup> *Id.* at 36.



invalidity arguments to those based on documentary prior art would “seem inconsistent with the goal of formulating an administrative alternative to validity litigation” but “fully consistent with the goal of providing a curative mechanism.”<sup>42</sup> Accused infringers in district court litigation can conduct wide-ranging discovery into prior commercial sales or public use of the patented invention to invalidate a patent.<sup>43</sup> By contrast, patent examiners cannot “thoroughly investigate sources of nondocumentary prior art, such as public uses and offers for sale. Thus, original examinations are often de facto limited to documentary sources of prior art.”<sup>44</sup> So to the extent that post-grant proceedings are a redo of the initial examination instead of an alternative to litigation, it seems reasonable to also limit post-grant proceedings to documentary prior art.

The Supreme Court and Federal Circuit have cited the examinational role of the PTO to justify broader standards for claim construction and lower standards for proving invalidity.<sup>45</sup> For instance, the Federal Circuit held that the PTO is not required to apply a presumption of validity for issued patents during reexaminations, which is one form of post-grant proceeding, because no such presumption is afforded to claims during patent prosecution.<sup>46</sup> In so concluding, the Court emphasized that the main purpose of reexaminations was to “increase the reliability of the PTO’s action in issuing a patent by reexamination of patents thought ‘doubtful.’”<sup>47</sup> Reexaminations might replace some aspects of litigation by “free[ing] the court from any need to consider prior art,” but this was merely an “auxiliary function” and not the main purpose of such proceedings.<sup>48</sup> More recently, in *Cuozzoco*, the Supreme Court upheld the PTO’s use of the broadest reasonable interpretation for construing claims in IPRs, which is a standard from patent examination.<sup>49</sup> Although the Court recognized that the AIA made post-grant proceedings more adjudicative, the Court ultimately found that “nothing convinces us that . . . Congress wanted to change its basic purposes, namely, to reexamine an earlier agency decision.”<sup>50</sup>

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<sup>42</sup> *Id.* at 56.

<sup>43</sup> See generally FED. R. CIV. P. 27–34 (providing various discovery tools for federal civil litigation).

<sup>44</sup> *Id.*

<sup>45</sup> *In re Yamamoto*, 740 F.2d 1569, 1572 (Fed. Cir. 1984) (affirming broadest reasonable construction for *ex parte* reexaminations); *In re Etter*, 756 F.2d 852, 857 (Fed. Cir. 1985) (holding that statutory presumption of validity for patent claims is inapplicable to reexaminations); *Cuozzoco*, 136 S. Ct. at 2144 (affirming PTO’s use of broadest reasonable construction in *inter partes* review).

<sup>46</sup> *In re Etter*, 756 F.2d at 857.

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> *Cuozzoco*, 136 S. Ct. at 2144.

<sup>50</sup> *Id.*

Thus, the balance between the examinational and adjudicative functions impacts how the Board conducts its review and the legal standards it can apply. The remainder of this Section takes a closer look at these respective functions. It also provides an overview of administrative patent review in the United States, and traces its evolution from a purely examinational proceeding to the current “hybrid” model under the AIA.

#### A. THE EXAMINATIONAL FUNCTION

The traditional justification for post-grant proceedings is that it allows the PTO to revisit its decision to grant a patent and correct any errors during examination.<sup>51</sup> The social and economic costs of improperly issued patents are well-documented. Invalid patents “can result in supracompetitive pricing and diminished quantity . . . without providing the commensurate benefits” of disclosing an invention.<sup>52</sup> They can be a tool for extracting nuisance settlements,<sup>53</sup> as well as to stifle innovation by monopolizing foundational technologies.<sup>54</sup> Even where invalid patents are never enforced, they can still have an anticompetitive effect.<sup>55</sup> Unenforced patents deter competitors from entering the market, drive investors and customers away from potentially infringing products, and force companies to expend resources on design-around solutions.<sup>56</sup> Thus, invalid patents lead to welfare loss and skew competitive markets even if no infringement suit is ever filed.<sup>57</sup> Given the negative consequences of the PTO’s errors, one goal of administrative patent review is to give the PTO a means to correct its mistakes and protect the public from overbroad or invalid patents. In doing so, the agency can revoke or narrow improperly granted claims to cut off their impact on markets.<sup>58</sup>

This justification for post-grant proceedings, however, assumes the patent system should protect against invalid patents by revisiting issued patents instead of reducing mistakes during the initial examination. Given the cost of error, one could argue that it would make sense to devote more resources to examining patent applications in the first instance, instead of revisiting patents that have already issued. Indeed, studies have shown that patent examiners often do not have enough time or resources to fully investigate whether a patent application

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<sup>51</sup> *Etter*, 756 F.2d at 857; *Cuozzo*, 136 S. Ct. at 2144.

<sup>52</sup> Frakes & Wasserman, *supra* note 24, at 620.

<sup>53</sup> *Id.*

<sup>54</sup> Leslie, *supra* note 24, at 104; *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72 (2012).

<sup>55</sup> Leslie, *supra* note 24, at 104.

<sup>56</sup> *Id.*

<sup>57</sup> *Id.*

<sup>58</sup> Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part II of II*, 21 FED. CIRCUIT B.J. 539, 601 (2012).

is truly inventive.<sup>59</sup> Likewise, some have observed that the PTO incentivizes patent examiners to grant more patents instead of vigorously opposing dubious applications.<sup>60</sup> These studies suggest that devoting more resources to the initial examination may lead to substantial improvements in overall patent quality. Moreover, there are clear benefits to avoiding errors during examination in the first place instead of going back to invalidate patents after they have already been granted. An issued patent creates reliance interests in the patentee, investors, and customers that are undermined if the patent is later revoked.<sup>61</sup>

And yet, although it may seem counterintuitive, spending more time and money examining patent applications may be a poor allocation of social resources. That is because most patents are not economically significant, and the increased cost of scrutinizing every patent application in greater detail likely outweighs the marginal benefit from such examination.<sup>62</sup> As Professor Mark Lemley points out,

[T]he overwhelming majority of patents are never litigated or even licensed. Because so few patents are ever asserted against a competitor, it is much cheaper for society to make detailed validity determinations in those few cases than to invest additional resources examining patents that will never be heard from again.<sup>63</sup>

The PTO, however, is not well positioned to identify which patents are important and which are worthless.<sup>64</sup> Indeed, “the prevailing view of patent examination is that it proceeds under a veil of rational ignorance, where patent examiners seek information about patentability using only finite resources that do not exceed the value of the information itself.”<sup>65</sup> By contrast, industry competitors in the same field of technology should—by hypothesis—have better knowledge about which patents are valuable. In this sense, post-grant

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<sup>59</sup> Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents?: Evidence from Micro-Level Application Data*, 99 REV. ECON. & STAT. no. 3, 4 (2014); Leslie, *supra* note 24, at 107; Susan W. Graf, Comment, *Improving Patent Quality Through Identification of Relevant Prior Art: Approaches to Increase Information Flow to the Patent Office*, 11 LEWIS & CLARK L. REV. 495, 502 (2007).

<sup>60</sup> *Id.*

<sup>61</sup> *Microsoft Corp. v. I4I Ltd. P’ship*, 564 U.S. 91, 108 (2011) (noting that heightened standard of proof on invalidity protects the patentee’s reliance interests).

<sup>62</sup> Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U.L. REV. 1495, 1497 (2001).

<sup>63</sup> *Id.*

<sup>64</sup> Saurabh Vishnubhakat, *The Youngest Patent Validity Proceeding: Evaluating Post-Grant Review*, 24 TEX. INTELL. PROP. L.J. 333, 337 (2016).

<sup>65</sup> *Id.*

proceedings are a means of outsourcing to private parties the task of identifying which patents should receive additional scrutiny.

Related to the goal of protecting the public from invalid patents, allowing the PTO to revisit its initial decisions should also create more certainty in patent validity and scope, as well as bolster confidence in issued patents.<sup>66</sup> Uncertainty about validity and scope may “cause the patent holder to under-invest in the technology, reduce investment by potential competitors in competing technical advances, and lead to costly litigation after both the patent holder and potential competitors have sunk sizable investments.”<sup>67</sup>

In principle, post-grant proceedings help resolve uncertainty in three ways. First, administrative review “fixes” patents that are overbroad or otherwise defective by amending the claims. This allows the patentee to correct errors in the patent before subjecting it to litigation, where such errors could invalidate the patent altogether.<sup>68</sup> To illustrate, suppose that a patent owner becomes aware of a potentially invalidating prior art reference after its patent has already issued. The patentee could ask the PTO to review the newly discovered prior art in a post-grant proceeding like *ex parte* reexamination.<sup>69</sup> If the PTO determines the patent is valid, this would presumably reduce the likelihood that a court will later invalidate the patent based on the same reference.<sup>70</sup> On the other hand, if the prior art reference indeed poses a validity problem, then the patentee can narrow the claims to an appropriate scope.<sup>71</sup> Either way, the patent emerges from administrative review stronger and more likely to survive a validity challenge in district court.<sup>72</sup>

The second way this process helps resolve uncertainty is that post-grant proceedings provide an “early window” to resolve validity questions before litigation. Courts cannot opine on patent validity unless there is an ongoing or imminent lawsuit, since the Constitution limits federal courts to resolving “[c]ases and [c]ontroversies.”<sup>73</sup> So even if a company believes its competitor’s patent is invalid, it must invest in a potentially infringing product and face the risk that a court might ultimately disagree with its invalidity position.<sup>74</sup> Coupled

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<sup>66</sup> Hall & Harhoff, *supra* note 32, at 991.

<sup>67</sup> *Id.*

<sup>68</sup> H.R. REP. NO. 96-1307 (1980).

<sup>69</sup> 35 U.S.C. §§ 302–305.

<sup>70</sup> H.R. REP. NO. 96-1307, pt. 1, at 4 (1980); Adamo, *supra* note 3, at 63 n.26.

<sup>71</sup> 35 U.S.C. § 305 (“In any reexamination proceeding under this chapter, the patent owner will be permitted to propose any amendment to his patent and a new claim or claims thereto, in order to distinguish the invention as claimed from the prior art cited.”)

<sup>72</sup> Adamo, *supra* note 2, at 78.

<sup>73</sup> *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 127 (2007).

<sup>74</sup> *See Sandoz Inc. v. Amgen Inc.*, 773 F.3d 1274, 1277 (Fed. Cir. 2014) (explaining that case or controversy requirement requires courts to assess whether the declaratory judgment plaintiff has “presented a case of sufficient ‘immediacy and reality’”); Matal, *supra* note 58, at

with the unpredictable nature of patent litigation, being unable to challenge a patent before litigation will undoubtedly deter some companies from investing in a new product or service altogether.<sup>75</sup>

Unlike district courts, administrative agencies are not constrained by the Constitution's case or controversy clause.<sup>76</sup> The PTO can resolve validity disputes even if the petitioner would not have standing in federal court.<sup>77</sup> This allows the PTO to resolve any questions about validity early in the life of a patent, before the patentee or its competitors have invested significant resources in developing or commercializing a patented product. This feature of administrative patent review also allows groups who would not have Article III standing to challenge dubious patents.<sup>78</sup> Public interest organizations like the Electronic Frontier Foundation can file petitions against issued patents at the PTO, whereas they would not have standing to do so in court.<sup>79</sup> Likewise, industry groups such as Unified Patents also frequently file IPR petitions on behalf of their members.<sup>80</sup> This allows the PTO to review patents that impact consumers or small businesses, even though such entities may not otherwise have the resources to individually challenge patents in court.<sup>81</sup>

Third, some argue the existence of administrative patent review can bolster the presumption of validity generally.<sup>82</sup> By allowing the PTO to revisit issued patents, the system should make it easier to challenge weaker patents and increase public confidence in patents that remain in effect.<sup>83</sup> This makes sense in theory,

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601 (2012) (“[A] competitor cannot challenge a patent in litigation before the competitor incurs the costs and risks of developing and marketing a product.”).

<sup>75</sup> Leslie, *supra* note 24, at 113.

<sup>76</sup> *Sierra Club v. E.P.A.*, 292 F.3d 895, 899 (D.C. Cir. 2002) (“An administrative agency . . . is not subject to Article III of the Constitution of the United States.” (quoting *Pfizer, Inc. v. Shalala*, 182 F.3d 975, 980 (D.C. Cir. 1999))).

<sup>77</sup> *Pers. Audio, LLC v. Elec. Frontier Found.*, 867 F.3d 1246, 1249 (Fed. Cir. 2017).

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*

<sup>80</sup> *IPR: Not Just for Litigants*, RPX, (Feb. 21, 2017), <https://www.rpxcorp.com/2017/02/21/ipr-not-just-for-litigants/> (describing how non-litigants are now some of the most frequent filers of IPR petitioners).

<sup>81</sup> Joe Mullin, *Unified Patents Files Legal Challenges Against Top Three Patent Trolls of 2016*, ARSTECHNICA (July 27, 2016, 2:39 PM), <https://arstechnica.com/tech-policy/2016/07/patent-defense-group-seeks-to-knock-out-top-three-trolls-of-2015/>; Annie Dike, “*Goliath*” Troll Under P.T.A.B. Review, NAT'L L. REV. (July 14, 2017), <https://www.natlawreview.com/article/goliath-troll-under-P.T.A.B.-review>.

<sup>82</sup> *Patlex Corp. v. Mossinghoff*, 758 F.2d 594, 601 (Fed. Cir. 1985) (describing how reexaminations would revive “United States industry’s competitive vitality by restoring confidence in the validity of patents issued by the PTO.”).

<sup>83</sup> *Id.*; James W. Beard, *A Better Carrot Incentivizing Patent Reexamination*, 1 HASTINGS SCI. & TECH. L.J. 169, 177–78 (2009) (“By increasing the ease with which weak patents could be

but the verdict is still out on whether administrative review realistically bolsters confidence in patent rights. Some have suggested that expanding administrative patent reviews through the AIA may have actually harmed public confidence in patents.<sup>84</sup> For instance, one industry representative testified to the Senate Judiciary Committee that AIA Reviews make revoking patent rights too easy and create the perception that the PTO is biased against patent owners.<sup>85</sup> It is also conceivable that, by invalidating many issued patents, the PTO is signaling that its initial examination is highly unreliable.

#### B. THE ADJUDICATIVE FUNCTION

The second function for post-grant proceedings is adjudicative. That is, post-grant proceedings allow the PTO to serve as an alternative forum for resolving private disputes about patents.<sup>86</sup> Compared to its examinational functions, this aspect of post-grant proceedings is less intuitive. At first glance, it seems redundant to provide a separate proceeding to litigate patent validity, given that district courts are entirely capable of performing this role. There are, however, important reasons why the patent system benefits from separate administrative patent reviews that operate in parallel with district courts. Having the PTO decide validity may be more accurate and efficient.<sup>87</sup> It is also cheaper.<sup>88</sup> The resources dedicated to litigation can have a detrimental effect on business operations, particularly for smaller companies.<sup>89</sup> Moreover, the high cost of litigation encourages nuisance settlements even where the patent is invalid or the infringement case is meritless.<sup>90</sup>

To start, an agency staffed by technical experts may be better qualified to adjudicate patent validity than judges or juries. Disputes about patent validity

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challenged and invalidated, those patents that remained in effect could be afforded a stronger presumption of validity . . . .”)

<sup>84</sup> S. 1137, the “Patent Act” – Finding Effective Solutions to Address Abusive Patent Practices to S. Comm. on Judiciary (May 7, 2015) (statement of Kevin H. Rhodes), <https://www.judiciary.senate.gov/imo/media/doc/05-07-15%20Rhodes%20Testimony.pdf> (contending that the “perception of imbalance is undermining public and investor confidence in patent rights and the patent system”).

<sup>85</sup> *Id.*

<sup>86</sup> Janis, *supra* note 7, at 36.

<sup>87</sup> *Cuozzo*, 136 S. Ct. at 2143–44 (describing how AIA Reviews were meant to be quick and inexpensive compared to district court litigation).

<sup>88</sup> *Id.*

<sup>89</sup> Michael Liu, *Joinder under the AIA: Shifting Non-Practicing Entity Patent Assertions away from Small Businesses*, 19 MICH. TELECOMM. & TECH. L. REV. 489, 495–96 (2013).

<sup>90</sup> Jesse Greenspan, *Counting the True Cost of a Nuisance Settlement*, LAW360 (Aug. 28, 2008, 12:00 AM), <https://www.law360.com/articles/67683/counting-the-true-cost-of-a-nuisance-settlement>.

often involve highly technical issues.<sup>91</sup> In the United States, a patent-eligible idea can be claimed if it is novel, non-obvious, and adequately disclosed in the patent specification, among other requirements.<sup>92</sup> Assessing these questions requires knowledge of the relevant field and at least some understanding of the technical issues involved in the patent.<sup>93</sup> Aside from the technical nature of patent validity itself, the objective standard for assessing questions like novelty or the adequacy of disclosure also varies based on the field of invention.<sup>94</sup> Questions like whether a patent is novel are not evaluated from the perspective of a reasonable person—the standard that district court judges typically apply.<sup>95</sup> Instead, they are assessed through the perspective of a person of ordinary skill in the relevant technical field, which varies based on the invention.<sup>96</sup>

Various studies have identified problems with submitting questions to juries and judges with no technical expertise.<sup>97</sup> One study found that juries are often unwilling to second-guess the PTO's decision to grant the patent.<sup>98</sup> Yet another concluded juries are more likely to decide patent cases on an all-or-nothing basis, and may even be biased by which party first brought the lawsuit.<sup>99</sup> Others have also noted deficiencies in district court decision-making in patent disputes.<sup>100</sup> For example, empirical studies suggest that district court claim constructions are frequently reversed, with one paper estimating that the Federal Circuit vacated one-third of the district court claim constructions that were appealed.<sup>101</sup> Another study found that half of district court claim constructions appealed to the Federal Circuit were at least partially vacated or reversed in some form.<sup>102</sup>

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<sup>91</sup> Arti K. Rai, Patent Institutions: Shifting Interactions Between Legal Actors, 1 RESEARCH HANDBOOK ON ECONOMICS OF INTELLECTUAL PROPERTY RIGHTS (forthcoming) (draft at 1).

<sup>92</sup> See 35 U.S.C. §§ 101–103, 112.

<sup>93</sup> See generally Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005).

<sup>94</sup> *Id.* at 1313.

<sup>95</sup> Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 6 (2001).

<sup>96</sup> *Id.*

<sup>97</sup> Jennifer F. Miller, *Should Juries Hear Complex Patent Cases?*, DUKE L. & TECH. REV., Apr. 2, 2004, ¶ 32; Mark A. Lemley, *Why Do Juries Decide if Patents are Valid?*, 99 VA. L. REV. 1673, 1674 (2013); Kimberly A. Moore, *Judges, Juries, and Patent Cases - An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 409 (2000); Moore, *District Court Judges*, *supra* note 95, at 30.

<sup>98</sup> Lemley, *supra* note 97, at 1674.

<sup>99</sup> Moore, *Judges, Juries, and Patent Cases*, *supra* note 97.

<sup>100</sup> See generally Moore, *District Court Judges*, *supra* note 95, at 30.

<sup>101</sup> *Id.* at 12.

<sup>102</sup> Jay P. Kesan & Gwendolyn G. Ball, *A Study of the Role and Impact of Special Masters in Patent Cases*, FEDERAL JUDICIAL CENTER, 12 (2009), <http://www.courtappointedmasters.org/sites/default/files/specmapa.pdf>. It is important to note that, even if the Federal Circuit finds error in nearly half of all district court claim constructions, that does not mean that district court judges are wrong half the time. Only a subset of district court decisions is appealed. And even among the appealed cases, the appellant chooses which arguments to present before

Because of the highly technical nature of the adjudicative facts involved with patent validity, there is a need to “deploy[] greater expertise and resources at the administrative and trial court levels.”<sup>103</sup> Providing post-grant proceedings at the PTO is one way to do so, as it allows parties to submit factual disputes to technically trained judges. At the PTO, the Board consists of administrative patent judges with “competent legal knowledge and scientific ability.”<sup>104</sup> These judges are divided into sections based on technical focus.<sup>105</sup> Although it is difficult to say for certain, there is reason to believe the Board’s specialized nature may be yielding more accurate results on technical questions. Qualitatively, the Board seems comfortable grappling with complex technical issues in its opinions.<sup>106</sup> Around 75% of Board opinions that are appealed to the Federal Circuit are ultimately affirmed.<sup>107</sup> The Board is also required to explain its opinions and provide cogent rationales for either affirming or revoking claims.<sup>108</sup> This makes the Board’s decision more transparent, and its errors easier to identify, than the metaphorical black box of a jury verdict.

Post-grant proceedings also provide a cheaper way to invalidate patents than district court litigation. Although costs for patent litigation have fallen in recent years, it still remains expensive to litigate in district court.<sup>109</sup> For patent infringement cases with \$1 million to \$10 million at stake, the median cost is \$1.7 million dollars.<sup>110</sup> Where the amount at risk exceeds \$25 million, the median cost of litigation is around \$ 3.3 million.<sup>111</sup> The cost of litigation creates problems beyond sky-high legal bills for companies. Because it can cost millions just to take a case through discovery, there is a strong incentive for defendants to settle

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the Federal Circuit. Therefore, appellants are more likely to appeal claim construction if the claim term is difficult to construe, or where the district court decision is poorly-reasoned.

<sup>103</sup> Rai, *supra* note 91, at 1.

<sup>104</sup> 35 U.S.C. § 6.

<sup>105</sup> ORGANIZATIONAL STRUCTURE AND ADMINISTRATION OF THE PATENT TRIAL AND APPEAL BOARD, USPTO (2015), <https://www.uspto.gov/sites/default/files/documents/Organizational%20Structure%20of%20the%20Board%20May%2012%202015.pdf>.

<sup>106</sup> Rochelle Cooper Dreyfuss, *Giving the Federal Circuit a Run for its Money: Challenging Patents in the PTAB*, 91 NOTRE DAME L. REV. 235, 261 (2015).

<sup>107</sup> Michael Joffre et al., *PTAB at 5: Part 3- Fed. Circ. Statistics*, Law360 (Sept. 13, 2017, 1:44 PM), <https://www.law360.com/articles/961586/ptab-at-5-part-3-fed-circ-statistics>.

<sup>108</sup> *Roalma, S.A. v. Bohler-Edelstahl GmbH & Co. KG*, 856 F.3d 1019, 1025 (Fed. Cir. 2017) (holding that the Board’s obviousness “analysis should be made explicit” and noting the court has “repeatedly insisted on such explanations in reviewing the adequacy of the Board’s analysis—both as a matter of obviousness law and as a matter of administrative law”).

<sup>109</sup> Malathi Nayak, *Cost of Patent Infringement Litigation Falling Sharply*, BLOOMBERG (Aug. 10, 2017), <https://www.bna.com/cost-patent-infringement-n73014463011/>.

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*



with a patentee for less than the cost of litigation.<sup>112</sup> This encourages meritless lawsuits to extract nuisance settlements.<sup>113</sup> High litigation costs also disproportionately affect small to medium sized businesses.<sup>114</sup> Relative to their overall budget, legal fees exact a higher toll from small companies than larger ones.<sup>115</sup> Likewise, devoting resources to patent litigation detracts more significantly from the routine business operations of smaller companies.<sup>116</sup>

Providing a cheaper alternative to district court litigation should make it harder to extract nuisance settlements. Instead of having to go through discovery and summary judgment to invalidate an overbroad patent, the accused infringer has the option of asking the PTO to cancel the patent administratively.<sup>117</sup> Litigation costs for post-grant proceedings have, in fact, been significantly lower than district court litigation.<sup>118</sup> The cost of a typical IPR ranges from \$ 300–400 thousand, which is a fraction of the cost of discovery in district court for many litigants.<sup>119</sup>

#### C. THE “HYBRID” APPROACH UNDER THE AMERICA INVENTS ACT

In the U.S., post-grant proceedings started as an examinational procedure, but steadily transitioned towards a more adjudicative model. In 1980, Congress passed the Patent and Trademark Laws Act, which created the first post-grant proceeding in the form of *ex parte* reexamination.<sup>120</sup> As its name would suggest, reexamination allows the PTO to re-examine issued claims and evaluate whether they are valid in view of new prior art or arguments.<sup>121</sup> Initially, Congress was more concerned about bolstering certainty in issued patent than problems associated with high litigation costs incurred by defendants or nuisance

<sup>112</sup> See Jesse Greenspan, *Counting the True Cost of a Nuisance Settlement*, LAW360 (Aug. 28, 2008, 12:00 AM), <https://www.law360.com/articles/67683/counting-the-true-cost-of-a-nuisance-settlement>.

<sup>113</sup> *Id.*

<sup>114</sup> Liu, *supra* note 89.

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> *Cuozzco*, 136 S. Ct. at 2143–44 (2016) (summarizing legislative history of how AIA Reviews were meant to be “a quick, inexpensive, and reliable alternative to district court litigation”).

<sup>118</sup> AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION, 2015 REPORT OF THE ECONOMIC SURVEY 43 (2015), <https://www.aipla.org/learningcenter/library/books/econsurvey/2015EconomicSurvey/Pages/default.aspx>.

<sup>119</sup> *Id.*

<sup>120</sup> Pub. L. No. 96-517, H.R. REP. NO. 96-1307(I), at 3 (1980).

<sup>121</sup> *Etter*, 756 F.2d at 857 (“In a very real sense, the intent underlying reexamination is to ‘start over’ in the PTO with respect to the limited examination areas involved . . . as they would have been considered if they had been originally examined . . .”).

settlements.<sup>122</sup> So rather than basing its procedure on litigation, reexaminations were designed to mimic the PTO's initial examination.<sup>123</sup> Accordingly, *ex parte* reexaminations were conducted between the patent examiner and the patentee, with no participation rights for the requestor.<sup>124</sup> *Inter partes* reexamination were later introduced to give limited participation rights to third-party requestors.<sup>125</sup> Nevertheless, these proceedings were still conducted before patent examiners, with no discovery or oral hearings.<sup>126</sup>

By the mid-2000s, policy concerns shifted away from bolstering patent validity and towards perceived abuses of the patent system.<sup>127</sup> A common perception was that the PTO granted too many questionable patents that disclosed nothing innovative, preempted basic concepts, and hampered innovation.<sup>128</sup> This was especially noticeable in the computer and software fields, which experienced a steep rise in patent activity in the 1990s, due in part to the "dot-com" boom.<sup>129</sup> Public attention also increasingly focused on businesses that did not sell products, but instead licensed and litigated patents to generate revenue.<sup>130</sup> These were called non-practicing entities or, more derisively, patent trolls.<sup>131</sup> When the dot-com bubble collapsed and many technology companies failed, their patent portfolios occasionally wound up at non-practicing entities

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<sup>122</sup> *Supra* note 120 (describing how a new patent reexamination procedure was necessary to "permit the owner of a patent to have the validity of his patent tested in the Patent Office" before litigation).

<sup>123</sup> Adamo, *supra* note 2, at 63–65.

<sup>124</sup> *Id.* at 65–67.

<sup>125</sup> American Inventor's Protection Act of 1999, Pub. L. No. 106-113 (1999); amended by the Intellectual Property and High Technical Amendments Act of 2002, Pub. L. No. 107-273 (2002).

<sup>126</sup> *Abbott Lab. v. Cordis Corp.*, 710 F.3d 1318, 1327 (Fed. Cir. 2013) ("The PTO's regulations for *inter partes* reexaminations make no provision for either party to take depositions.").

<sup>127</sup> Mark Lemley & Bhaven Sampat, *Is the Patent Office a Rubber Stamp?*, 58 EMORY L.J. 181, 182 (2008) ("A growing chorus of voices is sounding a common refrain: the U.S. Patent and Trademark Office (PTO) is issuing far too many bad patents. Look almost anywhere and you can find entertaining examples of silly patents that surely should not have issued."); Carl Shapiro, *Patent System Reform: Economic Analysis and Critique*, 19 BERKELEY TECH. L.J. 1017, 1018 (2004) ("The chorus of complaints about the U.S. patent system has grown louder in recent years . . . . Complaints regarding the patent system typically allege that the U.S. Patent and Trademark Office (USPTO) issues many questionable patents.").

<sup>128</sup> *Id.*

<sup>129</sup> Keith N. Hylton, *Patent Uncertainty: Toward a Framework with Applications*, 96 B.U. L. REV. 1117, 1125–27 (describing factors that led to the increase in software patents).

<sup>130</sup> John F. Luman & Christopher L. Dodson, *No Longer a Myth, the Emergence of the Patent Troll: Stifling Innovation, Increasing Litigation, and Extorting Billions*, 18 INTELL. PROP. & TECH. L.J., no. 5, 1 (2006).

<sup>131</sup> *Id.*

that aggressively monetized the patents through licensing and litigation.<sup>132</sup> As a result, there was a significant increase in patent litigation from the mid-1990s onwards, particularly in the computer and software industry.<sup>133</sup>

In 2011, Congress passed the America Invents Act (AIA) partly to clamp down on perceived abuses of the patent system.<sup>134</sup> Along with other significant changes to the patent laws, the AIA pushed post-grant proceedings decidedly towards an adjudicative model.<sup>135</sup> In place of *inter partes* reexamination, the AIA created IPR, PGR, and transitional covered business method review (CBMR).<sup>136</sup> PGR was designed to create a “first-window” to challenge patents shortly after they issue.<sup>137</sup> Petitioners can raise a broad array of invalidity arguments, but must file their challenge no later than “9 months after the date of the grant of the patent.”<sup>138</sup> By contrast, IPR is available for the entire life of the patent but is limited to invalidity arguments based on prior art publications or patents.<sup>139</sup> Finally, CBMR is only available for business method patents and will be phased out by 2020 unless Congress decides to extend the program.<sup>140</sup>

The overall procedure for IPR, PGR, and CBMR is similar. Each starts with a petition challenging an issued patent.<sup>141</sup> The Board then issues an institution decision, which is a preliminary determination as to whether the petition raises a reasonable likelihood of invalidity for one or more claims of the challenged patent.<sup>142</sup> If review is instituted, the parties make arguments to a panel of three administrative patent judges, and the proceedings allow for limited discovery and an oral hearing.<sup>143</sup> At this time, the patent owner can also file a motion to amend the claims.<sup>144</sup> Within one year of institution, the Board issues a final written

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<sup>132</sup> David G. Barker, *Troll Or No Troll? Policing Patent Usage with An Open Post-Grant Review*, 4 DUKE L. & TECH. REV., 1, 1–2 (2005) (describing the sale of Commerce One’s patent portfolio to a non-practicing entity during a bankruptcy auction).

<sup>133</sup> Hylton, *supra* note 129, at 1125–26; James Bessen, *The Patent Troll Crisis is Really a Software Patent Crisis*, WASH. POST (Sept. 3, 2013), [https://www.washingtonpost.com/news/the-switch/wp/2013/09/03/the-patent-troll-crisis-is-really-a-software-patent-crisis/?utm\\_term=.8909c5855d14](https://www.washingtonpost.com/news/the-switch/wp/2013/09/03/the-patent-troll-crisis-is-really-a-software-patent-crisis/?utm_term=.8909c5855d14).

<sup>134</sup> Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 329-331 (2011).

<sup>135</sup> H.R. REP. NO. 112-98, pt. 1, at 46–47 (2011); *Cuozz’o*, at 2143.

<sup>136</sup> *Supra* note 134, at §§ 6, 18.

<sup>137</sup> *Matal*, *supra* note 58, at 601, 609–10.

<sup>138</sup> 35 U.S.C. § 321(c).

<sup>139</sup> *Id.* § 311.

<sup>140</sup> *Supra* note 134, at § 18.

<sup>141</sup> *See* 35 U.S.C. §§ 312, 322.

<sup>142</sup> *See id.* §§ 314, 324.

<sup>143</sup> *Id.* § 6; 37 C.F.R. §§ 42.51–42.53, 42.70.

<sup>144</sup> 35 U.S.C. § 316(d).

decision on the patentability of the challenged claims and any newly proposed claims.<sup>145</sup>

Although the AIA made administrative patent reviews more adjudicative, the new proceedings also retained some examinational characteristics, most notably the ability to amend the patent to avoid cited prior art.<sup>146</sup> Petitioners do not need Article III standing, and they are only required to prove invalidity by a preponderance of the evidence.<sup>147</sup> By contrast, accused infringers in district court litigation must prove invalidity by clear and convincing evidence.<sup>148</sup> Through its regulatory authority, the PTO also imported key legal standards from reexaminations, including the broadest reasonable interpretation for claim construction.<sup>149</sup> This is different than the legal standard in district courts, which apply the ordinary meaning of the claim as it would be understood by someone skilled in the technical field of the invention.<sup>150</sup> In theory, the broadest reasonable construction covers more prior art and makes AIA reviews more favorable for petitioners.<sup>151</sup> By being over inclusive, this standard is intended to force applicants to draft more precise claims, which in turn protects the public from overbroad or vague patents.<sup>152</sup>

Various patent owners, however, argued that the PTO's decision to use examinational legal standards like the broadest reasonable interpretation is inconsistent with the adjudicative model for AIA Reviews.<sup>153</sup> They reasoned that, if AIA Reviews were meant to replace district court litigation, then the PTO should use the same standards as district courts to construe claims.<sup>154</sup> The Supreme Court rejected this argument in *Cuozzo*.<sup>155</sup> In doing so, the Court recognized the adjudicative aspect of AIA Reviews but ultimately characterized them as hybrid proceedings with both examination and litigation-like

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<sup>145</sup> 35 U.S.C. §§ 318, 328.

<sup>146</sup> *Id.* § 316(d).

<sup>147</sup> *Id.* §§ 311, 316(e).

<sup>148</sup> *Microsoft Corp. v. I4I Ltd. P'ship*, 564 U.S. 91, 95 (2011).

<sup>149</sup> 37 C.F.R. § 42.100(b) (establishing broadest reasonable construction standard for IPR); *Yamamoto*, 740 F.2d at 1572 (describing use of broadest reasonable interpretation for ex parte reexaminations).

<sup>150</sup> *Phillips*, 415 F.3d at 1313.

<sup>151</sup> *Lewis & Irving*, *supra* note 20, at 59.

<sup>152</sup> *Yamamoto*, 740 F.2d at 1571 (explaining that the broadest reasonable interpretation “serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified”); *In re Zletz*, 893 F.2d 319, 322 (Fed. Cir. 1989) (“An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.”).

<sup>153</sup> *Cuozzo*, 136 S. Ct. at 2143.

<sup>154</sup> *Id.*

<sup>155</sup> *Id.* at 2144.

characteristics.<sup>156</sup> The Court explained that “nothing convinces us that . . . Congress wanted to change its basic purposes, namely, to reexamine an earlier agency decision.”<sup>157</sup> And the Court also observed that “in addition to helping resolve concrete patent-related disputes among parties, IPRs protect the public’s ‘paramount interest in seeing that patent monopolies . . . are kept within their legitimate scope.’”<sup>158</sup> Because of their hybrid nature, the PTO is entitled to apply examinational standards like the broadest reasonable construction.<sup>159</sup>

Recently, the PTO has revisited its position regarding the broadest reasonable interpretation.<sup>160</sup> Under Director Andrei Iancu, the PTO has announced proposed rulemaking that would “replace the broadest reasonable interpretation (“BRI”) standard for construing unexpired patent claims and proposed claims in these trial proceedings with a standard that is the same as the standard applied in federal district courts.”<sup>161</sup> The PTO’s notice of proposed rulemaking relied heavily on the adjudicative function of post-grant proceedings.<sup>162</sup> For instance, the PTO stressed the need to “[m]inimize differences between claim construction standards used in the various fora could lead to greater uniformity and predictability of the patent grant.”<sup>163</sup> And, the PTO cited Congress’s intent “to provide ‘quick and cost-effective alternatives’ to litigation in the courts.”<sup>164</sup> In doing so, the PTO’s proposed rule likely signals a wider shift towards an adjudicative model for post-grant proceedings under Director Iancu.

### III. LIMITS OF THE EXAMINATIONAL FUNCTION UNDER THE AIA

There is no doubt that Congress intended to make post-grant proceedings under the AIA more adjudicative than previous proceedings like *ex parte* reexaminations.<sup>165</sup> The House Judiciary Committee Report states that the AIA “converts inter partes reexamination from an examinational to an adjudicative proceeding.”<sup>166</sup> And during debates in the Senate, Senator Kyl described how

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<sup>156</sup> *Id.*

<sup>157</sup> *Id.*

<sup>158</sup> *Id.* (quoting *Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806, 816 (1945)).

<sup>159</sup> *Id.*

<sup>160</sup> Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 21221 (proposed May 9, 2018) (to be codified at 37 C.F.R. pt. 42).

<sup>161</sup> *Id.* at 21221.

<sup>162</sup> *Id.* at 21225.

<sup>163</sup> *Id.*

<sup>164</sup> *Id.* at 21223.

<sup>165</sup> *Id.*

<sup>166</sup> H.R. REP. NO. 112-98, at 46–8 (2011); *see also Matal*, *supra* note 58, at 620.

converting reexaminations to an adjudicative proceeding represents an “important structural change... in which the petitioner, rather than the [PTO] bears the burden of showing unpatentability.”<sup>167</sup> But as the Supreme Court also correctly observed in *Cuozzolo*, the structure of AIA Reviews continue to reflect examinational policy goals in other respects.<sup>168</sup> For instance, the burden of proof for invalidity is preponderance of the evidence, which is lower than the clear and convincing evidence standard that district courts apply.<sup>169</sup> The AIA also guarantees patent owners the opportunity to amend challenged claims instead of having their patents revoked altogether.<sup>170</sup>

These provisions have led courts to recognize that AIA Reviews are intended, at least in part, to correct mistakes from examination and strengthen existing patent rights.<sup>171</sup> But does the reality of AIA Reviews actually reflect these goals? In other words, do AIA Reviews narrow patents to “their legitimate scope” and protect the public from dubious patents<sup>172</sup>— or are these proceedings doing the same thing as district court validity litigation? If AIA Reviews only function as an alternative litigation forum for all practical purposes, then using legal standards from examination seems hard to justify.

Presently, AIA Reviews look more like litigation than anything that could be fairly described as examination. The majority of AIA Reviews are conducted alongside district court litigation involving the same patents, which are frequently stayed pending the PTO’s decision.<sup>173</sup> The Board does not examine patent claims, but instead relies on petitioners to raise invalidity arguments.<sup>174</sup> If the petitioner drops out, the Board usually does not continue reviewing the challenged patent even if it already found a reasonable likelihood that the claims

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<sup>167</sup> *Matal*, *supra* note 58, at 620–1 (quoting 157 CONG. REC. S1376 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl)).

<sup>168</sup> *Cuozzolo*, 136 S. Ct. at 2144.

<sup>169</sup> 35 U.S.C. § 316(e).

<sup>170</sup> *Cuozzolo*, 136 S. Ct. at 2144.

<sup>171</sup> *Id.*; *Aqua Prod., Inc. v. Matal*, 872 F.3d 1290, 1312 (Fed. Cir. 2017) (“The goal underlying the AIA is twofold: (1) eliminating patents that foster abusive litigation; and (2) affirming and strengthening viable patents.”).

<sup>172</sup> *Cuozzolo*, 136 S. Ct. at 2144 (quoting *Precision Instrument Mfg. Co. v. Auto. Maint. Mach. Co.*, 324 U.S. 806, 816 (1945)).

<sup>173</sup> Vishnubhakat et al., *supra* note 19, at 69; Jonathan Stroud, Linda Thayer & Jeffrey C. Totten, *Stay Ambile: The Evolving Law of District Court Stays in Light of Inter Partes Review, Post-Grant Review, and Covered Business Method Post-Grant Review*, 11 BUFF. INTELL. PROP. L.J. 226, 238 (2015) (“Current research shows that to date, approximately 58% of requests for stays across all district courts have been granted outright, 6% partially granted, 29% denied, and 7% pending.”).

<sup>174</sup> 2016 Rule Amendments, *supra* note 21, at 18754 (“The Board does not conduct a prior art search to evaluate the patentability of the proposed substitute claims, and any such requirement would be impractical given the statutory structure of AIA proceedings.”).

are invalid.<sup>175</sup> Moreover, because the PTO required patentees to prove the validity of proposed amended claims, very few patentees successfully amended their claims even though the AIA guarantees an opportunity to do so.<sup>176</sup> Although the Federal Circuit recently overturned the PTO's standard on motions to amend, the practical impact of the court's decision remains unclear.<sup>177</sup>

This section looks at why AIA Reviews are predominantly adjudicative in practice, and identifies two aspects of these proceedings that undermine their examinational function. First, the Board cannot independently examine the validity of challenged claims, and must rely almost exclusively on the petitioner's arguments.<sup>178</sup> Although Congress deliberately placed the onus of proving invalidity on petitioners, this feature of AIA Reviews can be problematic if the parties settle or the patent owner amends the claims.<sup>179</sup> In either case, the petitioner may not have reason to argue for invalidation, and the Board cannot properly guard against invalid patents without evaluating the claims independently.<sup>180</sup>

Second, the AIA fails to adequately incentivize early resolution of patent validity. The opportunity to resolve patent validity early is one of the key benefits of administrative patent review.<sup>181</sup> It allows the PTO to revoke invalid patents to cut off their competition distorting effects, or, if the claims are confirmed, give patent owners greater certainty to invest in patented products.<sup>182</sup> But instead of encouraging early validity challenges, the AIA estoppel provisions discourage parties from filing PGR petitions, which are available within nine months of patent issuance.<sup>183</sup> And by doing so, the statutory scheme pushes parties towards IPRs, which are available throughout the life of the patent, and often used only when litigation is imminent.<sup>184</sup>

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<sup>175</sup> See 35 U.S.C. § 317 (“An inter partes review instituted under this chapter shall be terminated with respect to any petitioner upon the joint request of the petitioner and the patent owner, unless the Office has decided the merits of the proceeding before the request for termination is filed.”).

<sup>176</sup> *Aqua Prod.*, 872 F.3d at 1300.

<sup>177</sup> *Id.* at 1296.

<sup>178</sup> See *infra* Part IV.A.

<sup>179</sup> See *infra* Part III.A.

<sup>180</sup> *Id.*

<sup>181</sup> *Id.*

<sup>182</sup> See *supra* Part II.A

<sup>183</sup> See *infra* Part III.B.

<sup>184</sup> Vishnubhakat et al., *supra* note 19, at 69 (“[A]bout 86.7 % of IP- or CBM-challenged patents are also being litigated in the federal courts”); Pedram Sameni, *Patexia Chart 44: Eighty Percent of IPR Filings are for Defensive Purposes*, PATEXIA (Nov. 8, 2017), <https://www.patexia.com/feed/patexia-chart-44-80-percent-of-ipr-filings-are-for-defensive-purposes-20171107>.

## A. LACK OF INDEPENDENT EXAMINATION

First, consider whether the Board should have an independent role in evaluating the validity of a challenged patent, or if it should be limited to assessing the relative strengths and weaknesses of the parties' arguments. If administrative patent review is primarily defined by its adjudicative function, then the Board has no need to conduct an independent examination of challenged claims. Instead, it should act as a neutral adjudicator like a judge or jury.<sup>185</sup> And in that role, the Board should not make independent fact-findings or raise new arguments based on the prior art. On the other hand, because revoking invalid patents serves the public interest, one could argue the PTO should have authority to supplement the petitioner's arguments based on the Board's own understanding of the prior art, or even invalidate claims on grounds that may not have been raised by the petitioner at all. For examinational proceeding like *ex parte* reexaminations, the PTO can review and cancel an issued patent *sua sponte* if the agency believes there was a substantial new question of patentability.<sup>186</sup>

Under the AIA, however, the Board can do little to cancel or narrow claims if the petitioner stops participating or drops out. If both parties ask to terminate the proceeding, the Board shall do so "unless the Office has decided the merits of the proceeding before the request for termination is filed."<sup>187</sup> Thus, the Board will stop an AIA Review upon the parties' request even after it has already determined there is a reasonable likelihood that the challenged patent is invalid.<sup>188</sup> By contrast, if the requestor in a reexamination asks for the proceeding to be terminated, the examiner is still supposed to "make a thorough study of the patent and a thorough investigation of the available prior art relating to the subject matter of the claimed invention."<sup>189</sup> The AIA also limits the PTO's ability to raise arguments that were not presented by the petitioner. For instance, the AIA states that petitioners have the burden of proving the unpatentability of each challenged claim and must explain each ground of invalidity with particularity.<sup>190</sup>

Moreover, as a practical matter, the Board's ability to raise new arguments or introduce evidence is limited by the structure of AIA Reviews and the Board's

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<sup>185</sup> See, e.g., Janis, *supra* note 7, at 13–14.

<sup>186</sup> 35 U.S.C. § 304.

<sup>187</sup> 35 U.S.C. § 317.

<sup>188</sup> The Board must determine whether there is a reasonable likelihood of unpatentability before it can institute review. Around 22% of instituted reviews are terminated by settlement in 2016–2017. In 2014, the percentage of cases settled post-institution was as high as 40%. 2017 TRIAL STATISTICS, *supra* note 4, at 10.

<sup>189</sup> *In re AT & T Intellectual Prop. II, L.P.*, 856 F.3d 991, 994 (Fed. Cir. 2017) (affirming Board's decision to initiate reexamination over the original requestor's objections).

<sup>190</sup> 35 U.S.C. § 312(a)(3).



institutional capacity.<sup>191</sup> Timing-wise, the statutory deadline to issue a final written decision limits the Board's ability to conduct an independent prior art review.<sup>192</sup> While patent reexaminations can last for several years, AIA reviews must be completed within one year of institution.<sup>193</sup> And unlike in reexamination, where the PTO and the patent owner can engage in back-and-forth arguments, the Board generally takes a back-seat during AIA reviews. Instead of issuing "office actions" that set forth grounds for invalidity, the Board only issues two substantive decisions on patentability: an institution decision and a final written decision.<sup>194</sup> The institution decision is based on an incomplete record.<sup>195</sup> On the other hand, because the final written decision occurs at the end of the proceedings, new rationales for invalidity can deprive the patent owner of adequate notice and opportunity to respond.<sup>196</sup> So while the Board has some leeway to base its final decision on its own analysis, more substantial departures from the petitioner's invalidity positions pose a due process problem.<sup>197</sup>

From an institutional standpoint, AIA Reviews are also conducted by an adjudicative body rather than one that is examinational. AIA Reviews start and end before a panel of administrative patent judges.<sup>198</sup> Unlike patent examiners, administrative patent judges do not search for prior art or examine claims.<sup>199</sup> By contrast, reexaminations are conducted by patent examiners, who can independently evaluate the patent and prior art even if the requestor is no longer participating.<sup>200</sup> Reexaminations only proceed to the Board *after* the examiner has already reached a decision to uphold or invalidate the patent.<sup>201</sup> In short,

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<sup>191</sup> 2016 Rule Amendments, *supra* note 21, at 18754.

<sup>192</sup> 35 U.S.C. § 316(a)(11).

<sup>193</sup> Vishnubhakat et al., *supra* note 19, at 58 ("The reexaminations themselves took an average of 39.5 months, and then had to be appealed to the Board of Patent Appeals and Interferences.").

<sup>194</sup> 37 C.F.R. §§ 42.108, 42.108.

<sup>195</sup> *See id.* § 42.108(c) (describing how Board must base its institution decision on the petition and patent owner preliminary response).

<sup>196</sup> SAS Inst., Inc. v. ComplementSoft, LLC., 825 F.3d 1341, 1351 (Fed. Cir. 2016) (vacating Board decision because it adopted a new claim construction in the final written decision without providing adequate notice to the patent owner).

<sup>197</sup> *Compare* Belden Inc. v. Berk-Tek LLC, 805 F.3d 1064, 1074 (Fed. Cir. 2015) (holding that "the Board was entitled to rely on its own reading" of the prior art to find the claim obvious), *with* SAS, 825 F.3d at 1351.

<sup>198</sup> 35 U.S.C. § 6.

<sup>199</sup> 2016 Rule Amendments, *supra* note 21, at 18754.

<sup>200</sup> *AT&T*, 856 F.3d at 994 (affirming Board's decision to initiate reexamination over the original requestor's objections).

<sup>201</sup> 35 U.S.C.A. § 315 (2002) (superseded by Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011)).

because of its procedural and institutional constraints, the Board performs few tasks that could be considered “examinational.”

Nevertheless, given that Congress made a deliberate policy choice to move from an examinational to an adjudicative model for post-grant proceedings, it makes sense for the Board to serve as a neutral adjudicator instead of revoking patents based on its own view of the prior art. And in many cases, the Board’s inability to rely on its own examination of the prior art likely has no practical significance. As discussed in Part III, one reason for having post-grant proceedings is to outsource the prior art search and analysis to interested private parties.<sup>202</sup> Most petitioners have strong incentives to find the most relevant prior art and present vigorous arguments to invalidate challenged patents. Therefore, the PTO can usually protect the public from dubious patents by acting as a neutral adjudicator and assessing the petitioner’s arguments. Things only start to break down, however, where the petitioner identifies a potentially invalid patent but is no longer incentivized to continue arguing for invalidity. This can occur after settlement or when the patentee tries to amend the claims.

Settlement is the first situation where limits on the Board’s ability to rely on its own view of the prior art becomes problematic. The AIA allows petitioners to settle with the patent owner and voluntarily move to terminate the AIA Review.<sup>203</sup> Over the past two years, approximately 14% of AIA Reviews are settled before the Board institutes review, and 22% of instituted reviews also ended in settlement.<sup>204</sup> There are strong policy reasons for promoting settlement, which conserves private and agency resources.<sup>205</sup> And it would surely undermine any motivation to settle if the parties believe the PTO will cancel the patent regardless.

There are, however, social costs to settlement as well, particularly with respect to patent validity disputes. Allowing parties to terminate an AIA review deprives the public of the Board’s opinion on validity. This allows some improperly granted patents to survive review even if they would otherwise have been invalidated absent settlement.<sup>206</sup> Further, settlement also allows the patentee to preserve a potentially invalid patent by granting a license to one company, but leveraging the same patent against subsequent competitors. Indeed, the Second Circuit has lamented the “troubling dynamic” in which “[t]he less sound the patent . . . , the more a rule permitting settlement is likely to benefit the patent holder by allowing it to retain the patent.”<sup>207</sup> The court noted that “[s]o long as the law encourages settlement, weak patent cases will likely be settled even

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<sup>202</sup> See *supra* Part III.A.

<sup>203</sup> 35 U.S.C. § 317.

<sup>204</sup> 2017 TRIAL STATISTICS, *supra* note 4, at 10.

<sup>205</sup> *Foster v. Hallco Mfg. Co.*, 947 F.2d 469, 477 (Fed. Cir. 1991).

<sup>206</sup> *In re Tamoxifen Citrate Antitrust Litig.*, 466 F.3d 187, 211 (2d Cir. 2006).

<sup>207</sup> *Id.*

though such settlements will inevitably protect patent monopolies that are, perhaps, undeserved.”<sup>208</sup> Likewise, Professor Joseph Miller explains how patent invalidity judgments can be viewed as a public good because it clears the way for competitors to enter the market, even if those other competitors were not involved in the litigation.<sup>209</sup> However, this creates a free-rider problem for patent challengers because their competitors do not have to expend resources to invalidate the patent, but still receive the same benefits from invalidation.<sup>210</sup> This dynamic encourages challengers to settle instead of invalidating the patent, which in turn allows patent owners to continue asserting patents that may have been improperly granted.<sup>211</sup>

The problems associated with patent settlements occur in both district court litigation and post-grant proceedings. Unlike district courts, however, the Board is expressly charged with protecting the public against dubious patents and promoting certainty in patent rights—at least to the extent AIA Reviews function as “hybrid proceedings.”<sup>212</sup> But unless the Board has the capacity to independently evaluate challenged claims, it cannot realistically carry out this public protection function once the petitioner drops out. This allows the patent owner to preserve invalid patents through settlement, even at the PTO. And as the Second Circuit observed, patent owners are more motivated to settle invalidity challenges against patents that are “less sound.”<sup>213</sup>

Nor do settlements in AIA Reviews further the goal of creating more certainty in patent rights, which depends on information about patent validity and scope. Settlements prevent such information from being produced and disseminated.<sup>214</sup> In some cases, settlement can even be a deliberate “technique for preserving uncertainty regarding the patent rights at issue. That uncertainty is of value both to the patentee and to the alleged infringer if the patent is in fact invalid, because the settlement allows them both privileged access to the market.”<sup>215</sup>

The lack of independent examination can also be a problem when the patentee tries to amend the claims. Although the interests of the petitioner and

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<sup>208</sup> *Id.*

<sup>209</sup> Joseph Scott Miller, *Building a Better Bounty: Litigation-Stage Rewards for Defeating Patents*, 19 BERKELEY TECH. L.J. 667, 687–88 (2004); see also Joseph Farrell & Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won't Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help*, 19 BERKELEY TECH. L.J. 943, 968 (2004).

<sup>210</sup> Miller, *supra* note 9, at 687–88.

<sup>211</sup> *Id.*

<sup>212</sup> See, e.g., *Cuozzco*, 136 S. Ct. at 2144.

<sup>213</sup> *In re Tamoxifen*, 466 F.3d at 211.

<sup>214</sup> Mark R. Patterson, *Leveraging Information About Patents: Settlements, Portfolios, and Holdups*, 50 HOUS. L. REV. 483, 497–98 (2012).

<sup>215</sup> *Id.*

the public are usually aligned when it comes to invalidating the issued claims, they may not be similarly aligned with respect to opposing proposed amended claims.<sup>216</sup> For instance, patent owners may narrow their claims such that petitioners are no longer at risk of infringement.<sup>217</sup> Even if the amended claims do not impact the petitioners, however, they can still be asserted against subsequent infringers.

The PTO recognized the challenge of protecting the public against potentially invalid claims without the ability to independently evaluate validity. As the PTO explained:

The Board does not conduct a prior art search to evaluate the patentability of the proposed substitute claims, and any such requirement would be impractical given the statutory structure of AIA proceedings. If a motion to amend is granted, the substitute claims become part of an issued patent, without any further examination by the Office.<sup>218</sup>

To resolve this conundrum, the PTO tried to shoehorn claim amendments into the adjudicative structure of AIA reviews by requiring patent owners to prove patentability.<sup>219</sup> Under the PTO's initial approach, patentees seeking to amend their claims in an AIA Review must explain why their claims are patentable over the prior art of record.<sup>220</sup> This rule "account[s] for the absence of an independent examination by the Office where a prior art search is performed as would be done during prosecution of a patent application, reexamination, or reissue."<sup>221</sup> In other words, the PTO tried to make up for the examiner's absence by forcing patent owners to show why their proposed claims are valid.

Despite the PTO's rationale for placing the burden of proof on patent owners, the Federal Circuit ultimately held that it was improper to do so in *Aqua Products v. Matal*.<sup>222</sup> This decision largely turned on whether the PTO's rule

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<sup>216</sup> See *International Flavors & Fragrances Inc. v. United States*, IPR2013-00124, 2014 WL 2120542 (PTAB May 20, 2014) (granting unopposed motion to amend claims).

<sup>217</sup> *Aqua Prod.*, 872 F.3d at 1349 ("[I]f no petitioner opposes a motion to amend, or the opposition is inadequate in the Board's view, the record may not contain readily available prior art or arguments that were immaterial to the issued claims but that would render the substitute claims unpatentable.").

<sup>218</sup> 2016 Rule Amendments, *supra* note 21, at 18754.

<sup>219</sup> See *Idle Free Sys., Inc. v. Bergstrom, Inc.*, No. IPR2012-00027, 2013 WL 5947697, at \*4 (P.T.A.B. June 11, 2013); *MasterImage 3D, Inc. v. Reald Inc.*, No. IPR2015-00040, 2015 WL 4383224, at \*2-4 (P.T.A.B. July 15, 2015).

<sup>220</sup> *Id.*

<sup>221</sup> 2016 Rule Amendments, *supra* note 21, at 18754.

<sup>222</sup> *Aqua Prods.*, 872 F.3d at 1296.

should receive *Chevron* deference.<sup>223</sup> However, the Federal Circuit also expressed concerns about the difficulty of amending claims under the PTO's approach, and how it seems inconsistent with the Board's looser standard on claim construction.<sup>224</sup> The court's lead opinion, for example, noted that "the PTO has more than once acknowledged that use of the broadest reasonable interpretation standard is only appropriate when patent owners have the opportunity to amend," and yet "[t]he PTO's statistics confirm that patent owners have consistently failed to obtain their requested relief on motions to amend."<sup>225</sup> With respect to the prospect of unexamined claims, the lead opinion observed that

[T]he 'worst' possible outcome is that a patent issues in which the previously-examined claims have been narrowed and clarified in such a way that the petitioner does not fear its ability to continue to make, use, or sell its own product, and the public is put on notice of exactly how to innovate around those claims in the future.<sup>226</sup>

The court also noted that amended claims will only issue where "the PTO will have been unable to conclude that any issued amended claims are unpatentable under very relaxed standards—preponderance of the evidence and broadest reasonable interpretation."<sup>227</sup>

*Aqua Products* made AIA Reviews more in line with adjudications, but the decision did little to address issues associated with the Board's inability to examine claims. The lead opinion noted that unexamined claims should not create significant problems because claims can only be narrowed during AIA Reviews.<sup>228</sup> But just because a claim is *narrowed*, does not mean it becomes *valid*. Unless the proposed claims are scrutinized for validity, the patentee could narrow the claim enough to avoid the challenger's product or prior art reference, but still keep the claim broad enough to cover other competitor's products. In a sense, those other competitors are silent participants to the PTO's proceedings because their right to make or use their products will likely be affected by the outcome.<sup>229</sup> To the extent AIA Reviews serve a public protection function, the PTO should consider their interests as well. Moreover, although the PTO applies a lower "preponderance of the evidence" standard on invalidity, this still assumes there

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<sup>223</sup> *Id.* at 1327–28.

<sup>224</sup> *Id.* at 1300.

<sup>225</sup> *Id.* at 1299–1300.

<sup>226</sup> *Id.* at 1315.

<sup>227</sup> *Id.*

<sup>228</sup> *Id.* at 1314.

<sup>229</sup> Hall & Harhoff, *supra* note 32, at 1009 (describing the public as a silent participant in post-grant proceedings).

is another party opposing the amended claims. If the petitioner stops participating, who is left to introduce *any* evidence of invalidity, much less meet the preponderance of the evidence standard? In this scenario, the Board must independently examine the proposed claims, thus taking on a role that it is poorly suited to perform.

In the PTO's guidance on motions to amend after *Aqua Products*, the Chief Administrative Patent Judge instructed the Board that, so long as a motion to amend is technically compliant, then "the Board will proceed to determine whether the substitute claims are unpatentable by a preponderance of the evidence based on the entirety of the record, including any opposition made by the petitioner."<sup>230</sup> However, it is unclear if the Board would supplement the record or introduce new arguments if there is no opposition by the petitioner. Judge Taranto's opinion in *Aqua* suggest the Board might have broad authority to "sua sponte introduce evidence or arguments into the record—and rely on them after giving notice and opportunity to be heard."<sup>231</sup> But as discussed above, the problem goes beyond the Board's statutory authority to introduce evidence or arguments. Rather, the Board's ability to examine claims is also limited by the procedural and institutional structure of AIA Reviews.

#### B. ESTOPPEL EFFECTS OF AIA REVIEWS

The AIA's estoppel provisions also undermine the examinational function of AIA Reviews by creating disincentives for filing early validity challenges, which is a key feature of post-grant proceedings that distinguishes them from district court litigation.<sup>232</sup> Under 35 U.S.C. § 315(e), petitioners are estopped from raising invalidity defenses in litigation that it "raised or reasonably could have raised" in a previous AIA Review that reached a final written decision.<sup>233</sup> And they are precluded from petitioning for AIA Review altogether if they have previously filed a declaratory judgment of invalidity in district court.<sup>234</sup> These estoppel provisions prevent parties from re-litigating the same issues through multiple AIA reviews or across different forums.<sup>235</sup>

If AIA reviews are viewed as a replacement for litigation, then it makes sense to broadly prohibit parties from challenging the same patent multiple times. The finality of judgments "encourages reliance on judicial decisions, bars vexatious

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<sup>230</sup> David P. Ruschke, *Guidance on Motions to Amend in view of Aqua Products*, USPTO (Nov. 21, 2017), [https://www.uspto.gov/sites/default/files/documents/guidance\\_on\\_motions\\_to\\_amend\\_11\\_2017.pdf](https://www.uspto.gov/sites/default/files/documents/guidance_on_motions_to_amend_11_2017.pdf)

<sup>231</sup> 872 F.3d at 1322 n.7 (2018).

<sup>232</sup> *See supra* Part III.A.

<sup>233</sup> 35 U.S.C. § 315(c).

<sup>234</sup> *Id.* § 315(a).

<sup>235</sup> *Synopsys, Inc. v. Mentor Graphics Corp.*, 814 F.3d 1309, 1332 (Fed. Cir. 2016) (Newman, J., dissenting) (citing 154 CONG. REC. S9989 (daily ed. Sept. 25, 2008) (statement by Sen. Kyl)).

litigation, and frees the courts to resolve other disputes.”<sup>236</sup> Moreover, the legislative history of the AIA suggests the law was intended to “[f]orce a party to bring all of [its] claims in one forum . . . and therefore to eliminate the need to press any claims in other fora.”<sup>237</sup> Without estoppel, parties could mount separate validity challenges and wipe out any efficiencies or cost savings of administrative patent review.

By contrast, broad estoppel for post-grant proceedings will inevitably deter some parties from challenging dubious patents.<sup>238</sup> This means patents that might otherwise be cancelled will instead remain uncontested. Another downside is that estoppel provisions discourage parties from challenging patents through PGR, since it may be difficult to “discover a potentially invalid patent and to file a review on all possible grounds within nine months.”<sup>239</sup> The risk of estoppel, coupled with the limited time period for filing PGRs, pushes parties to rely on IPRs because they are available throughout the life of the patent.<sup>240</sup> Most IPRs are initiated only when there is already imminent or pending litigation over the challenged patents.<sup>241</sup> This is noteworthy because post-grant proceedings are based on the understanding that improperly granted patents adversely affect competition even if they are never litigated.<sup>242</sup> It would defeat this feature of AIA Reviews if such proceedings are only used concurrently with litigation.

The PTO’s experience with *inter partes* reexamination provides a stark example of how broad estoppel can undermine the effectiveness of post-grant proceedings. Initially, *ex parte* reexaminations did not permit third party participation, but also did not preclude third-party requestors from asserting invalidity in subsequent litigation.<sup>243</sup> Later, Congress created *inter partes* reexaminations to allow the third-party requestor to participate in the proceedings.<sup>244</sup> But as a trade-off, *inter partes* reexaminations broadly prohibited third-party requestors from asserting in litigation the “invalidity of any claim

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<sup>236</sup> *Brown v. Felsen*, 442 U.S. 127, 131 (1979).

<sup>237</sup> *Synopsis*, 814 F.3d at 1332 (Newman, J., dissenting).

<sup>238</sup> *Matal*, *supra* note 58, at 617.

<sup>239</sup> Susan J. Marsnik, *Will the America Invents Act Post-Grant Review Improve the Quality of Patents? A Comparison with the European Patent Office Opposition*, in *THE CHANGING FACE OF U.S. PATENT LAW AND ITS IMPACT ON BUSINESS STRATEGY 201–02* (Daniel R. Choy & Lynda J. Oswald eds., 2013).

<sup>240</sup> Jeffrey A. Miller et al., *Post-Grant Review: A Promising New Tool for Invalidating Patents?*, *Arnold & Porter* (Jan. 18, 2017), <https://www.arnoldporter.com/en/perspectives/publications/2017/01/post-grant-review-a-promising>.

<sup>241</sup> Vishnubhakat et al., *supra* note 19, at 69.

<sup>242</sup> Leslie, *supra* note 24, at 104.

<sup>243</sup> *In re Etter*, 756 F.2d 852, 857 (Fed. Cir. 1985) (“[D]enial of a request for reexamination does not deprive the requestor (if not the patent owner) ‘of any legal right’ to contest validity in subsequent court proceedings.”).

<sup>244</sup> American Inventor’s Protection Act of 1999, Pub. L. No. 106-113 (1999).

finally determined to be valid and patentable on *any ground* which the third-party requester raised or could have raised during the *inter partes* reexamination proceedings.<sup>245</sup> The general consensus is this provision was too draconian and over-deterred parties from seeking *inter partes* reexamination.<sup>246</sup> For example, the PTO projected that it would receive 600 requests within the first five years of *inter partes* reexaminations.<sup>247</sup> Instead, it received only fifty-three requests.<sup>248</sup>

Because *inter partes* reexamination failed to weed out bad patents, Congress narrowed the scope of estoppel for AIA Reviews to promote wider use of these proceedings.<sup>249</sup> Rather than precluding all arguments the petitioner “could have raised,” the AIA added the term “reasonably.”<sup>250</sup> During Senate debates, Senator Kyl explained how this language “softens the could-have-raised estoppel that is applied by *inter partes* review against subsequent civil litigation.”<sup>251</sup> He noted that “[a]dding the modifier ‘reasonably’ ensures that could-have-raised estoppel extends only to that prior art which a skilled searcher conducting a diligent search reasonably could have been expected to discover.”<sup>252</sup> This language prevents courts from precluding litigants from raising any issue that was “physically possible to raise in the *inter partes* reexamination, even if only a scorched-earth search around the world would have uncovered the prior art in question.”<sup>253</sup> Accordingly, the AIA’s approach represented a middle ground between *inter partes* reexamination’s broad estoppel provisions and proposals to limit estoppel only to issues actually raised and decided by the Board.<sup>254</sup>

Despite this legislative compromise, the scope of estoppel still remains a contentious issue. For example, patent owners often point to “follow-on” IPR petitions as evidence that the AIA estoppel is inadequate.<sup>255</sup> Because § 315(e) only applies to IPRs that “result[ ] in a final written decision,” there is no estoppel if the challenger petitions for review, but is denied institution.<sup>256</sup> Accordingly, some petitioners file “follow-on petitions” if their earlier petition is denied or partially instituted. Around 21% of all petitions can be categorized as “follow-

<sup>245</sup> 35 U.S.C. § 315(c) (emphasis added).

<sup>246</sup> Vishnubhakat, *supra* note 64, at 346.

<sup>247</sup> See Report to Congress on Inter Partes Reexamination at 4, USPTO, <https://www.uspto.gov/web/offices/dcom/olia/reports/reexamreport.pdf> (last visited Aug. 1, 2017).

<sup>248</sup> *Id.*

<sup>249</sup> Matal, *supra* note 58, at 618.

<sup>250</sup> 35 U.S.C. § 315(e) (emphasis added).

<sup>251</sup> 157 CONG. REC. S1375 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl).

<sup>252</sup> *Id.*

<sup>253</sup> *Id.*

<sup>254</sup> Matal, *supra* note 58, at 616–17.

<sup>255</sup> Steve Brachmann, *Three rounds of IPR petitions invalidates VirnetX patent after Apple gets around statute of limitations*, IPWATCHDOG (Nov. 16, 2017), <http://www.ipwatchdog.com/2017/11/16/ipr-petitions-virnetx-patent-apple-statute-of-limitations/id=90233/>.

<sup>256</sup> 35 U.S.C. § 315(e).



on” because they are filed *after* the preliminary reply or the institution decision.<sup>257</sup> The PTO has recognized that, in some instances, such petitions are used to harass patent owners, and can “frustrate the purpose” of AIA Reviews as “quick and cost effective alternatives to litigation.”<sup>258</sup> To address this issue, the PTAB established a multi-factor test to determine whether the Board should exercise its discretion to deny institution without reaching the merits.<sup>259</sup> The Supreme Court’s recent decision in *SAS v. ComplementSoft* will also curtail the practice of follow-on petitions. In that case, the Court held that the Board must institute review on an all-or-nothing basis and eliminated partial institutions.<sup>260</sup> This forces the PTO to incorporate all challenged claims in the final written decision, and make all of them subject to estoppel.<sup>261</sup>

In other respects, however, the AIA’s estoppel provisions still over-deter parties from seeking review, particularly within the nine-month window for PGR. The statutory estoppel provisions for PGR and IPR are the same, and both prohibit the petitioner from making any arguments “that the petitioner raised or reasonably could have raised” before the Board.<sup>262</sup> But whereas IPR petitioners are limited to arguments based on prior art printed publications or patents, PGR petitioners can essentially raise any invalidity argument available in district court.<sup>263</sup> Therefore, there are more grounds that a petitioner “reasonably could have raised” in PGR than IPR, and the former likely has a broader estoppel effect even though the statutory language is the same.<sup>264</sup> Given its potential for broad estoppel, patent practitioners have urged caution before seeking PGRs.<sup>265</sup> The PTO’s statistics likewise indicate that parties rarely invoke PGR. By the end of 2017, there have only been eighty-six PGR petitions.<sup>266</sup> Because PGRs are only available for patents with an effective filing date after March 2013, the PTO

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<sup>257</sup> Chat with the Chief: An Analysis of Multiple Petitions in AIA Trials at 14, USPTO, [https://www.uspto.gov/sites/default/files/documents/Chat\\_with\\_the\\_Chief\\_Boardside\\_Chat\\_Multiple\\_Petition\\_Study\\_20171024.pdf](https://www.uspto.gov/sites/default/files/documents/Chat_with_the_Chief_Boardside_Chat_Multiple_Petition_Study_20171024.pdf). (last visited Jan. 28, 2018).

<sup>258</sup> *Hamilton Beach Brands, Inc. v. FReal Foods, LLC*, IPR2017-00765, 2017 WL 3268945, at \*3 (July 31, 2017) (quoting H.R. REP. NO. 112–98, pt.1, at 48 (2011)).

<sup>259</sup> *General Plastic Indus. Co. Ltd. v. Canon Kabushiki Kaisha*, Case No. IPR2016-01357, Paper 19 (Sep. 6, 2017) (listing seven-factor test).

<sup>260</sup> *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354 (2018)

<sup>261</sup> *Id.*

<sup>262</sup> 35 U.S.C. § 325(e)(1).

<sup>263</sup> 35 U.S.C. § 321(b)

<sup>264</sup> *Miller et al.*, *supra* note 240 (“Because PGRs have significantly more draconian estoppel possibilities, potential petitioners should consider whether they should wait out the nine month window for filing a PGR petition and instead file either an IPR petition or, if available, a CBM petition.”).

<sup>265</sup> *Id.*

<sup>266</sup> 2017 TRIAL STATISTICS, *supra* note 4, at 3.

has only recently started issuing patents that qualify for this proceeding.<sup>267</sup> But even accounting for this fact, less than 0.1% of eligible patents have been opposed through PGR.<sup>268</sup>

This result seems contrary to the policy behind PGRs. If anything, the estoppel provisions for PGR should be narrower than IPR. AIA reviews aim to protect the public from invalid patents and create certainty in patent rights.<sup>269</sup> Both objectives are better served if validity challenges are raised *early* in the life of the patent. As the former Deputy Commissioner for Patent Examination Policy explained, “[t]hird parties should be encouraged to test patent claims as early as possible after issuance, when patent holders have invested the least resources and the opportunity for third parties to change course in the market is greatest.”<sup>270</sup> He also noted how a “first window” of nine months to two years was important because “[s]ubsequent to this period, the likelihood that the patent owner would be practicing the invention more widely and that third parties might perform potentially infringing activities leads to a heightened need to protect patent owners against potentially harassing conduct.”<sup>271</sup> More recently, this issue was raised during the Supreme Court arguments in *Oil States*.<sup>272</sup> Justice Breyer, for example, was concerned about situations where a company has invested billions to develop a patented concept, only to have its patent invalidated at the PTO.<sup>273</sup> Such losses could be avoided if patent validity and scope were settled soon after issuance. Aside from providing certainty, early challenges to validity also benefit the public by cutting off the competition distorting effects of improperly granted patents. Indeed, it matters little to the public if an improperly granted patent is challenged shortly before it expires, since any associated economic and social costs will have already been incurred.

Given the benefits of early resolution, it would make sense to incentivize PGR over IPR. But contrary to this policy goal, imposing broader estoppel for PGR encourages petitioners to delay challenging issued patents.<sup>274</sup> Recent statistics suggest that AIA reviews are not particularly effective for resolving patent rights early, but are used primarily as an alternative forum for litigation.<sup>275</sup>

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<sup>267</sup> Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 6 (f)(2)(A).

<sup>268</sup> In 2016, the PTO granted approximately 300,000 utility patents, and roughly 40% of all issued patents qualified for PGR. Dennis Crouch, *ALA Patents: Now Most Issued Patents are ALA Patents*, PATENTLYO (July 18, 2017), <https://patentlyo.com/patent/2017/07/patents-most-issued.html>.

<sup>269</sup> See *supra* Part II.A.

<sup>270</sup> Stephen G. Kunin & Anton W. Fetting, *The Metamorphosis of Inter Partes Reexamination*, 19 BERKELEY TECH. L.J. 971, 976 (2004).

<sup>271</sup> *Id.*

<sup>272</sup> Transcript of Oral Argument at 29-32, *Oil States*, No. 16-712 (U.S. Nov. 27, 2017), [https://www.supremecourt.gov/oral\\_arguments/argument\\_transcripts/2017/16-712\\_7kh7.pdf](https://www.supremecourt.gov/oral_arguments/argument_transcripts/2017/16-712_7kh7.pdf).

<sup>273</sup> *Id.* at 29.

<sup>274</sup> Marsnik, *supra* note 239, at 201-02.

<sup>275</sup> Vishnubhakat et al., *supra* note 19, at 69.

One 2016 study found that around 86.8% of IPR and CBMR involved patents that were concurrently litigated in court.<sup>276</sup> In some cases, the petitioner may not have filed an early petition because they were not aware of the patent until they received a demand letter or complaint. Or there may be many patents and claims covering the same product, and the petitioner could not determine which claims the patentee intended to assert until litigation. But regardless, because post-grant proceedings are used predominately when there is concurrent litigation, the AIA has probably failed to promote early resolution of patent validity or claim scope.

Interestingly, Congress was aware of the downsides for imposing broad estoppel on PGRs and sought to avoid these results. Initially, the estoppel provisions for both IPR and PGR were limited to the grounds *actually* raised and decided.<sup>277</sup> To prevent repetitive challenges throughout the life of the patent, Congress broadened the estoppel provision for IPR to include the “reasonably could have raised” language. However, this amendment was never supposed to be added to the PGR estoppel provision.<sup>278</sup> Senator Kyl noted that “[c]hallengers who use [PGR] will be estopped in litigation from raising *only those issues that were raised and decided in the post-grant review*, rather than all issues that could have been raised, the standard employed in inter partes reexamination.”<sup>279</sup> And yet, the final version of the AIA included the “reasonably could have raised” language in the PGR estoppel provisions as well, which was likely the result of a scrivener’s error.<sup>280</sup>

#### IV. COMPARISON WITH THE EUROPEAN MODEL

Thus far, this Article has focused on post-grant proceedings in the U.S., and has identified two issues that undercut the PTO’s examinational function in AIA reviews. To understand how an alternative model for post-grant proceedings might impact the balance between the examinational and adjudicative functions, this Section looks to oppositions at the European Patent Office (EPO). Like the PTO, the EPO also provides a “first window” to challenge the validity of recently

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<sup>276</sup> *Id.*

<sup>277</sup> Matal, *supra* note 58, at 617–18.

<sup>278</sup> Brent Kendall, *Scrivener’s Error Undercuts Patent-Law Overhaul*, WALL ST. J. (Oct. 27, 2013), <https://www.wsj.com/articles/scrivener8217s-error-undercuts-patentlaw-overhaul-1382917120> (“The bill’s supporters said they didn’t immediately notice the change, which was later attributed to a scrivener’s error. The final wording ‘is widely recognized’ as a mistake, Teresa Stanek Rea, deputy director of the Patent Office, said in a speech last week.”).

<sup>279</sup> Senate Debate 157 CONG. REC. S1360–S1394 (emphasis added).

<sup>280</sup> Kendall, *supra* note 280.

issued patents.<sup>281</sup> Since the 1980s, third-parties could challenge a European patent within nine months of issuance through an opposition proceeding.<sup>282</sup> With around 5% of all European patents challenged, opposition proceedings have long been an important part of the patent system in Europe.<sup>283</sup> And in drafting the AIA, Congress emulated certain aspects of European oppositions, including the nine-month “first window” to challenge patents.<sup>284</sup>

At first glance, PGRs appear very similar to EPO opposition proceedings. Both are only available nine months after issuance, allow for written and oral arguments, and provide an opportunity to amend the claims.<sup>285</sup> A closer look, however, reveals key differences between the U.S. and European approaches to post-grant proceedings. For one, parties in Europe have stronger incentives to file an opposition shortly after issuance.<sup>286</sup> If a party forgoes opposition, the only other avenue to challenge validity is through the national courts, which is a process that is comparably more expensive and unpredictable.<sup>287</sup> By contrast, U.S. litigants can challenge issued patents more than nine months after issuance through IPRs, and do not have to choose between centralized administrative revocation and a patchwork of national court proceedings.<sup>288</sup> Moreover, EPO oppositions have no estoppel effect, and petitioners can still present the full range of invalidity arguments in subsequent litigation.<sup>289</sup> The result is that “first window” validity challenges like oppositions proceedings are widely-used in Europe, but rarely invoked in the U.S.<sup>290</sup>

This section looks at administrative patent reviews in Europe, and compares the role of the EPO to that of the PTO. It starts by providing a brief overview of European opposition proceedings. This section then examines the possible benefits of making some aspects of AIA Reviews more like European oppositions. In particular, the PTO could conduct PGRs in a more examinational manner, while focusing on the litigation replacement function of IPR. For PGRs, this would mean narrowing the estoppel provisions and

<sup>281</sup> David Lewin, *EPO Oppositions Are Affordable, Powerful and Increasingly Important*, 253 *MANAGING INTELL. PROP.* 44, 49 (2015); Hall & Harhoff, *supra* note 32, at 1006.

<sup>282</sup> Convention on the Grant of European Patents, Oct. 5, 1973, art. 99 [hereinafter *European Patent Convention*].

<sup>283</sup> Lewin, *supra* note 281, at 45; Hall & Harhoff, *supra* note 32, at 1006.

<sup>284</sup> H.R. REP. NO. 112-98, at 47–48 (2011).

<sup>285</sup> Marsnik, *supra* note 239, at 189.

<sup>286</sup> Leythem Wall & Hazel Ford, *7 Reasons Revocation in EU Could be As Popular as IPR in U.S.*, LAW360 (Apr. 25, 2016, 12:00 PM), <https://www.law360.com/articles/775865/7-reasons-revocation-in-eu-could-be-as-popular-as-ipr-in-us>.

<sup>287</sup> *Id.*

<sup>288</sup> 35 U.S.C. § 282 (establishing invalidity as defense in district court infringement proceedings); *id.* at 311 (allowing parties other than the patent owner to challenge validity through IPR).

<sup>289</sup> Lewin, *supra* note 281, at 47.

<sup>290</sup> *Id.*; Hall & Harhoff, *supra* note 32, at 1003; *see supra* Part III.B.

bolstering the Board's ability to examine claims. IPR would retain broad estoppel provisions, but otherwise mimic district court litigation more closely by giving patents a presumption of validity and applying a narrower claim construction standard. In principle, this should encourage petitioners to request PGR more often, and allow PTO to take on a more examinational role for these "first window" validity reviews.

#### A. POST-GRANT PROCEEDINGS IN EUROPE

European opposition proceedings are administered by the EPO, an agency created in part to harmonize patent law in Europe.<sup>291</sup> Despite the existence of a common market for goods and services, patent rights in Europe are still enforced through national courts.<sup>292</sup> This fragmented approach creates various problems. Procuring patents in each state is cumbersome and adds significant costs to obtaining patent rights across Europe.<sup>293</sup> The lack of a single patent regime makes patent enforcement and revocation more challenging because national courts often have inconsistent standards and procedures.<sup>294</sup> To address this problem, various states adopted the European Patent Convention (EPC) to provide for centralized examination and processing of European Patents through the EPO.<sup>295</sup> A European Patent, however, still needs to be validated in each state's national patent office before it will have legal effect in that state.<sup>296</sup> This process remains expensive, with one estimate placing the cost for obtaining enforceable patent rights in all countries subject to the European Patent Convention at fifteen times the cost of obtaining a U.S. patent.<sup>297</sup>

The EPC also allows parties to request cancellation of a European Patent through an centralized opposition proceeding at the EPO.<sup>298</sup> Procedurally, any person except the patentee may file a notice of opposition within nine months of the notice of issuance.<sup>299</sup> After the initial notice of opposition, the opposing party remains part of the opposition proceedings and may be invited to file

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<sup>291</sup> Kevin P. Mahne, *A Unitary Patent and Unified Patent Court for the European Union: An Analysis of Europe's Long Standing Attempt to Create a Supranational Patent System*, 94 J. PAT. & TRADEMARK OFF. SOC'Y 162, 173–74 (2012).

<sup>292</sup> *Id.* at 167.

<sup>293</sup> Gaurav Jit Singh, *Unified European Front: The Road Towards a European Unitary Patent 5* (E.U. Centre in Singapore, Working Paper No. 21, 2014), <http://aci.pitt.edu/63494/1/WP21-European-Unitary-Patent.pdf>.

<sup>294</sup> Mahne, *supra* note 291, at 168–69.

<sup>295</sup> European Patent Convention, *supra* note 282, art. 99.

<sup>296</sup> Mahne, *supra* note 291 at 167.

<sup>297</sup> *Id.* at 168.

<sup>298</sup> European Patent Convention, *supra* note 282, at art. 99.

<sup>299</sup> *Id.*

written responses to support invalidity.<sup>300</sup> The opposing party can also argue at an oral hearing.<sup>301</sup> Once the EPO renders a decision, it becomes legally effective in every country designated on the European patent.<sup>302</sup>

Compared with AIA Reviews, oppositions are far more examinational. As the EPO has explained, oppositions are “not essentially contentious” and the deciding body does not have to be neutral.<sup>303</sup> For instance, the EPO “shall not be restricted . . . to the facts, evidence and arguments provided by the parties,” and “shall examine the facts of its own motion.”<sup>304</sup> Thus, rather than acting as an unbiased adjudicator, the EPO procedures seem more focused on ensuring that issued patents are not overly broad or otherwise invalid.<sup>305</sup> And consistent with this role, the EPO generally does not allow parties to jointly terminate an opposition proceeding through settlement.<sup>306</sup> Once the EPO becomes aware of potentially invalidating prior art, the agency can proceed independently to invalidate the patent, even if the opposing party requests termination.<sup>307</sup> Moreover, opposition proceedings do not have any estoppel effect.<sup>308</sup> Thus, the opposing party remains free to raise invalidity defenses in subsequent litigation. An unsuccessful opponent can “use the same facts, the same evidence, and the same arguments that he used during the European opposition procedure in the national procedure.”<sup>309</sup>

Consistent with its examinational policy goals, the EPO also applies fairly liberal standards for claim amendments in opposition proceedings. Patentees can simultaneously submit multiple sets of proposed amended claims.<sup>310</sup> The patentee typically files a main request, along with multiple auxiliary requests that include narrower sets of proposed claims.<sup>311</sup> Some patent owners will file more than ten auxiliary requests to help ensure their patent survives review in some amended form.<sup>312</sup> The EPO considers each request individually, and will allow

<sup>300</sup> *Id.* at art. 101.

<sup>301</sup> *Id.* at art. 116.

<sup>302</sup> Lewin, *supra* note 281, at 44–45.

<sup>303</sup> Heli Pihlajamaa, *Opposition and Appeal Proceedings at the European Patent Office*, European Patent Office, AIPLA at 3 (Oct. 22, 2015), [http://www.aipla.org/committees/committee\\_pages/IP-Practice-in-Europe/Committee%20Documents/AIPLAOppositionAppeal2210.pdf](http://www.aipla.org/committees/committee_pages/IP-Practice-in-Europe/Committee%20Documents/AIPLAOppositionAppeal2210.pdf).

<sup>304</sup> European Patent Convention, *supra* note 282, art. 114.

<sup>305</sup> *Id.* art. 114(1); Pihlajamaa, *supra* note 303, at 3.

<sup>306</sup> Marsnik, *supra* note 239, at 189–90.

<sup>307</sup> *Id.*

<sup>308</sup> De Corte et al., *supra* note 29, at 113.

<sup>309</sup> *Id.*

<sup>310</sup> Jennifer Turchyn, *Improving Patent Quality Through Post-Grant Claim Amendments: A Comparison of European Opposition Proceedings and U.S. Post-Grant Proceedings*, 114 MICH. L. REV. 1497, 1512 (2016).

<sup>311</sup> *Id.* at 1511–12.

<sup>312</sup> *Id.* at 1512.

the broadest claims requested in view of the cited prior art.<sup>313</sup> The statistics for European opposition confirm that the EPO tends to allow more claim amendments. Overall, about one third of all opposed patents are allowed in some amended form.<sup>314</sup>

Once the nine-month period for opposition expires, however, a party seeking to challenge a European Patent can only do so through the national courts.<sup>315</sup> Not only is mounting separate challenges through the national courts expensive, but it can also result in inconsistent decisions between various courts regarding the same invention.<sup>316</sup> As such, there have been various attempts to create a supranational patent court to handle both enforcement and revocation.<sup>317</sup> Indeed, the EPC itself was meant to be one of several steps towards creating a full European Community Patent enforceable across member states.<sup>318</sup> After years of extensive negotiations, however, national government opposition ultimately scuttled plans for the European Community Patent.<sup>319</sup>

Despite these setbacks, the European Commission has renewed its effort to create a supranational patent regime. In February 2013, twenty-five member states signed an agreement to create a Unified Patent Court (UPC).<sup>320</sup> When and if the UPC goes into effect, it will serve as a single forum for patent enforcement and revocation for the newly created Unitary Patent, which will have legal effect across member states.<sup>321</sup> In some respects, the UPC seems akin to U.S. district courts because it decides both infringement and validity.<sup>322</sup> But unlike district courts, the UPC will be staffed in part by technically trained patent judges.<sup>323</sup> The UPC will also allow independent revocation actions, and permit the patentee to amend its claims during such proceedings.<sup>324</sup>

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<sup>313</sup> *Id.*

<sup>314</sup> Wall & Ford, *supra* note 286; Turchyn, *supra* note 310, at 1501.

<sup>315</sup> Wall & Ford, *supra* note 286.

<sup>316</sup> *Id.*

<sup>317</sup> Mahne, *supra* note 291, at 169–80 (describing various attempts to create a supranational patent court in Europe).

<sup>318</sup> Singh, *supra* note 293, at 6–7; Mahne, *supra* note 291, at 175–76.

<sup>319</sup> Paul Meller, *Fresh Opposition to Europe Patent Plan*, N.Y. TIMES (June 24, 2006), <http://www.nytimes.com/2006/06/24/business/worldbusiness/24patent.html>.

<sup>320</sup> Agreement on a Unified Patent Court, 2013 O.J. (C 175) 1 [hereinafter UPC Agreement]; *About the Unified Patent Court*, UNIFIED PATENT COURT, <https://www.unified-patent-court.org/about/> (last visited Aug. 23, 2018).

<sup>321</sup> Mahne, *supra* note 291, at 183–88.

<sup>322</sup> Unified Patent Court, EUROPEAN PATENT OFFICE, <https://www.epo.org/law-practice/unitary/upc.html#tab1> (last visited Aug. 23, 2018).

<sup>323</sup> UPC Agreement, *supra* note 323, arts. 8, 15.

<sup>324</sup> PRELIMINARY SET OF PROVISIONS FOR THE RULES OF PROCEDURE (“RULES”) OF THE UNIFIED PATENT COURT R. 30, 42 (18th draft, October 19, 2015), <https://www.unified->

With the framework for the UPC in place, some contend that “Europe is the closest it has been since the mid-1970’s to establishing an EU-wide supranational patent system.”<sup>325</sup> Nevertheless, several hurdles still remain to making the UPC a reality. The UPC agreement requires ratification by thirteen member states, which must include the three countries with “the highest number of European patents” in 2012.<sup>326</sup> These are the U.K., Germany, and France.<sup>327</sup> Despite its decision to leave the European Union, the U.K. ultimately ratified the UPC Agreement in April 2018.<sup>328</sup> German ratification, however, has been put on hold pending a constitutional challenge against UPC ratification in the German Constitutional Court.<sup>329</sup>

#### B. LESSONS FROM OPPOSITION PROCEEDINGS

As a preliminary matter, it is important to acknowledge that EPO oppositions are far from perfect. Oppositions are much slower than PGRs and IPRs. If the appeal period is included, oppositions can take four to eight years to reach a final determination.<sup>330</sup> So even after a European Patent issues, patentees and competitors can go for years without certainty as to whether the claims will ultimately be upheld. This can be especially problematic for innovative products with short life cycles, such as mobile devices or software.<sup>331</sup> As one law firm noted, “[d]elays of four to six years while the EPO decides whether a patent is valid are not commercially viable” for some industries.<sup>332</sup> Likewise, others observe that competitors often use opposition proceedings to harass patent

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patent-court.org/file/134/download?token=kBosxprv (hereinafter “Preliminary UPC Procedural Rules”)

<sup>325</sup> Mahne, *supra* note 291, at 183.

<sup>326</sup> UPC Agreement, *supra* note 323, art. 89.

<sup>327</sup> Benjamin Beck & Ulrich Worm, *German Parliament Approves Ratification of the UPC Agreement*, LEXOLOGY (Mar. 22, 2017), <https://www.lexology.com/library/detail.aspx?g=c2ba2b7c-d552-4f69-b694-11a15cd65246>.

<sup>328</sup> Olga Bezzubova et al., *Two Down, One to Go: The UK Ratifies Unified Patent Court Agreement*, LEXOLOGY (May 1, 2018), <https://www.lexology.com/library/detail.aspx?g=bc7c7618-ee64-47cf-b458-5ce9bf01659a>; Peter Hale, *Does the UK Government’s Brexit plans bode well for the UPC?*, LEXOLOGY (Oct. 11, 2017), <https://www.lexology.com/library/detail.aspx?g=811b3073-1ec2-467b-85bc-ac684dbb9402>.

<sup>329</sup> Joachim Fledges & Michael Krenz, *UPC ratification process in Germany put on hold Following Constitutional Complaint*, LEXOLOGY (Sept. 11, 2017), <https://www.lexology.com/library/detail.aspx?g=ff06e540-b288-4660-b809-07aa6521f899>.

<sup>330</sup> Radcliffe, *supra* note 31; *Early Certainty at the EPO- Our Perspective*, Kilburn & Strode LLP, <http://www.kilburnstrode.com/assets/articles%20&%20briefing%20notes/Early%20certainty%20-%20our%20perspective.pdf> (last visited August, 29, 2018).

<sup>331</sup> *Early Certainty at the EPO*, *supra* note 330.

<sup>332</sup> Radcliffe, *supra* note 31.



owners by filing a notice of opposition at the very end of the nine-month period, which creates a longer period of uncertainty for patentees.<sup>333</sup>

Despite these drawbacks, opposition proceedings have been successful in at least one respect, which is promoting a high number of challenges to patent validity within nine months of issuance. Studies show that oppositions have a “screening” effect that weeds out bad patents early and improves the overall quality of European Patents.<sup>334</sup> Within the past five years, around five percent of all European Patents have been opposed.<sup>335</sup> At first glance, reviewing five percent of issued patents may not seem like it would have a meaningful impact on overall patent quality. However, studies show that oppositions are more likely to be directed against patents that are economically valuable and likely to be litigated.<sup>336</sup> Those patents also present the greatest risk of improperly tying up important technologies and causing welfare loss if their scope is too broad.<sup>337</sup> Thus, opposition proceedings identify patents that are most likely to impact the economy and subject those to additional scrutiny.<sup>338</sup> So although only five percent of issued patents are challenged, scholars have found that oppositions have a comparably greater impact on overall patent quality in Europe.<sup>339</sup>

Compared with EPO oppositions, none of the various forms of administrative patent review in the U.S. have been nearly as successful.<sup>340</sup> In the thirty-year period from 1981 to 2011, the PTO granted an average of around 120,000 patents annually.<sup>341</sup> Yet the PTO received, on average, only around 380 requests for ex parte reexamination per year.<sup>342</sup> Likewise, very few parties

<sup>333</sup> Pernille W. Gojkovic & Claus Elmeros, *Oppositions at the European Patent Office- A Cruel Tool...*, HØIBERG (June 2015), <https://hoiberg.com/om-hoeiberg/artikler/oppositions-at-the-european-patent-office-a-cruel-tool/>.

<sup>334</sup> Robert P. Merges, *As Many as Six Impossible Patent before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 611–15 (1999); Hall & Harhoff, *supra* note 32, at 1002–07; Marsnik, *supra* note 239, at 187 (“Oppositions serve a positive screening function of weeding out a substantial number of bad patents and narrowing a substantial number that are too broad.”).

<sup>335</sup> Lewin, *supra* note 281, at 45; Hall & Harhoff, *supra* note 32, at 1006.

<sup>336</sup> Hall & Harhoff, *supra* note 32, at 1006; Marsnik, *supra* note 241, at 186–87.

<sup>337</sup> Vishnubhakat, *supra* note 64, at 337; Lemley, *supra* note 62, at 6–8.

<sup>338</sup> Michael A. Carrier, *Post-Grant Opposition: A Proposal and a Comparison to the America Invents Act*, 45 U.C. DAVIS L. REV. 103, 117 (2011).

<sup>339</sup> Merges, *supra* note 334, at 611–15; Hall & Harhoff, *supra* note 32, at 1002–07; Marsnik, *supra* note 241, at 187.

<sup>340</sup> Carrier, *supra* note 338, at 112–15.

<sup>341</sup> U.S. PATENT STATISTICS CHART, USPTO, [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) (last updated June 16, 2016).

<sup>342</sup> Carrier, *supra* note 338, at 113; Farrell & Merges, *supra* note 209, at 966 (“The original reexamination system has been at best a modest success. Although it is an imperfect measure, it is striking that less than 1% of issued U.S. patents are ever challenged by a reexamination request.”).

requested *inter partes* reexamination, which was widely considered a failure.<sup>343</sup> Nor are there any indications that PGRs will be used more frequently. By the end of 2017, there have only been 86 petitions for PGRs.<sup>344</sup> Although IPRs are used more frequently, they are primarily used concurrently with litigation, which does little to advance the policy goal of reducing the competition skewing effect of invalid patents *before* they are litigated.<sup>345</sup>

Congress and the PTO could take several steps to create stronger incentives for parties to file PGR petitions. As discussed above, EPO oppositions do not have any estoppel effects on subsequent litigation.<sup>346</sup> In theory, Congress could follow suit and eliminate the estoppel provision for PGRs. Considering the patent owner industry groups' concerns about the use of post-grant proceedings to harass patent owners, eliminating estoppel altogether for PGR may not be politically feasible.<sup>347</sup> A more realistic fix would be to narrow the estoppel provision for PGRs to only the grounds actually raised in the petition. Indeed, the legislative history of the AIA indicates that Congress never intended PGRs to broadly preclude subsequent validity challenges.<sup>348</sup> Rather, the PGR estoppel provision seems to have been an unintentional import from the IPR statute.<sup>349</sup> By removing the phrase "reasonably could have raised" for PGR, Congress would make clear that petitioners are only estopped from re-litigating the specific grounds for invalidity raised in their petition. Thus, if an unsuccessful PGR petitioner later discovers a written description problem or a new anticipatory reference that it missed during the initial nine-month window, the petitioner would not be foreclosed from mounting those invalidity defenses in litigation.

Although narrowing estoppel will inevitably raise fears of harassment, the limited time window for filing PGR petitions should mitigate such concerns. Even in its current form, the PGR estoppel provision does not prevent multiple PGR petitions. PGRs take eighteen months to complete after the petition is filed, so the nine-month window for PGR would close before the Board can reach a final written decision.<sup>350</sup> Instead, PGR estoppel only applies to

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<sup>343</sup> Report to Congress on Inter Partes Reexamination, USPTO, [https://www.immagic.com/eLibrary/Archives/General/US\\_PTO/Po41217R.pdf](https://www.immagic.com/eLibrary/Archives/General/US_PTO/Po41217R.pdf) (last visited August, 29, 2018); Vishnubhakat, *supra* note 64, at 346.

<sup>344</sup> 2017 TRIAL STATISTICS, *supra* note 4, at 3.

<sup>345</sup> Vishnubhakat et al., *Strategic Decision Making*, *supra* note 19, at 70 ("[V]alidity challenges in the USPTO are, indeed, connected with the threat or fact of infringement litigation, for a large majority of challenged patents are also asserted in court... Our data indicate that patents challenged in the PTAB are, on average, also asserted at least three times in court.").

<sup>346</sup> De Corte et al., *supra* note 29, at 113.

<sup>347</sup> Matal, *supra* note 58, at 616 ("In the case of inter partes review, many patent owners objected to repealing could-have-raised estoppel, arguing that such a change would result in 'duplicative administrative and judicial challenges.'").

<sup>348</sup> *Id.* at 617–18.

<sup>349</sup> *Id.*; Kendall, *supra* note 278.

<sup>350</sup> 35 U.S.C. §§ 324, 326.

subsequent IPRs, CBMs, or litigation. Each of those proceedings has their own means of preventing repeat validity challenges by the same party.<sup>351</sup> In other words, even if PGRs had no estoppel effect at all, the petitioner would still have only one subsequent bite at the apple before triggering some form of estoppel. In fact, the PTO could even eliminate the possibility of “follow-on” petitions for PGRs if it waits until the nine-month period expires before requesting a patent owner preliminary response or issuing an institution decision. That way, by the time the PTO issues an institution decision, the window for filing a PGR would have already closed. Although this practice will delay the final written decision, it would also prevent petitioners from filing “follow-on” petitions within the PGR period.

Narrowing PGR estoppel is a necessary, but likely insufficient, step towards shifting validity disputes earlier in the life of a patent. The more difficult question is how to encourage parties to challenge patents soon after issuance, not just how to remove disincentives. Opposition proceedings are popular in Europe in large part because parties must resort to expensive and unpredictable national court proceedings after the nine-month window closes.<sup>352</sup> Of course, it is neither feasible nor desirable to emulate this aspect of the European system. Nevertheless, parties are more likely to challenge patents early if there are disadvantages to delay. In fact, during the drafting of the AIA, one of the arguments against a “life-of-the-patent” proceeding, like IPR, was that “if review could be sought later when a defendant is sued, big businesses would lose the incentive to challenge bad patents early in their life, and, as a result, ‘the public will face the consequences of living with an invalid patent for years and years.’”<sup>353</sup>

One solution might be to model PGRs after European opposition proceedings, but make IPRs more similar to the proposed UPC revocation procedures. In theory, the UPC should create a centralized enforcement and revocation system in Europe, which means that parties will no longer have to choose between opposition or separate challenges in national courts. Nevertheless, there are still compelling reasons for parties to use oppositions

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<sup>351</sup> See 35 U.S.C. §§ 315, 325. Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 315. Unlike IPRs and PGRs, CBMR estoppel only reaches the grounds that were actually raised, and does not include grounds that “reasonably could have been raised.” *Id.*

<sup>352</sup> Wall & Ford, *supra* note 287.

<sup>353</sup> Matal, *supra* note 58, at 603 (quoting Patent Reform Act of 2007: Hearing on H.R. 1908 Before the Subcomm. on Courts, the Internet, and Intellectual Prop., 110th Cong. 56 (2007) (statement of Gary Griswold, President and Chief IP Counsel, 3M Innovative Properties Co., on behalf of the Coalition for 21st Century Patent Reform)).

instead of relying on UPC revocations.<sup>354</sup> The UPC draft rules suggest that revocation proceedings will be costlier and more adjudicative in nature.<sup>355</sup> The standard for amending claims at the UPC is likely to be far more stringent than in EPO opposition proceedings. The draft rules only allow the patentee to submit one application to amend the patent, and any subsequent requests to amend can only be entered with leave of court.<sup>356</sup> Further, the application to amend must also explain “why the proposed amended claims are valid,”<sup>357</sup> which seems similar to the PTO’s pre-*Aqua* standard for claim amendment in AIA Reviews.

The PTO could take a similar approach by applying adjudicative standards for IPRs, including a presumption of validity and the district court claim construction standard, while retaining the broader examinational standards for PGRs. In principle, this would make patents harder to invalidate in IPR and would push more parties to request PGR. Logically, it seems reasonable for the Board and district courts to apply consistent standards for invalidity. Given that over eighty percent of IPR and CBMR involved patents that are concurrently litigated in court,<sup>358</sup> IPRs might be better characterized as part of litigation than a redo of patent examination. Raising the invalidity standards for IPRs also gives patent owners greater certainty in their patent rights. As Justice Breyer noted in *Oil States*, there is a concern that the current AIA regime allows challenges to issued patents after patent owners have made significant investments in their inventions.<sup>359</sup> Although this also happens when district courts invalidate patents, IPRs can be more problematic because of the lower burden of proof and broader claim construction. Under Director Iancu, the PTO has already taken steps to make IPRs more adjudicative by proposing to use the district court standard for claim construction instead of the broadest reasonable interpretation.

If the PTO adopts district court standards for IPRs, this would provide a stronger justification for a strict approach to motions to amend. As discussed in Section III, the Board’s ability to independently examine claims is limited, so the PTO initially placed the burden of proof for validity on patent owners to prevent unexamined claims from issuing.<sup>360</sup> However, recent experience shows how this

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<sup>354</sup> See, e.g., Thorstein Bausch, EPO Opposition vs. UPC Revocation at 47–48, EPLIT Annual Meeting (Apr. 15, 2016), <http://www.eplit.eu/files/downloads/AGM%202016/Bausch%20-%20EPO%20Opposition%20vs.%20UPC%20Nullity%20Action.pdf>.

<sup>355</sup> Unified Patent Court: Counterclaims for Revocation, Crowell & Moring LLP (Dec. 1, 2015), <https://www.crowell.com/NewsEvents/AlertsNewsletters/all/Unified-Patent-Court-Counterclaims-for-Revocation>.

<sup>356</sup> Preliminary UPC Procedural Rules, *supra* note 324, at R. 30.

<sup>357</sup> *Id.*

<sup>358</sup> Vishnubhakat et al., *supra* note 19, at 69; Sameni, *supra* note 184.

<sup>359</sup> Transcript of Oral Argument at 29–32, *Oil States*, No. 16–712 (U.S. argued Nov. 27, 2017), [https://www.supremecourt.gov/oral\\_arguments/argument\\_transcripts/2017/16-712\\_879d.pdf](https://www.supremecourt.gov/oral_arguments/argument_transcripts/2017/16-712_879d.pdf).

<sup>360</sup> See *supra* Part III.A.2.

practice can result in denial for the vast majority of motions to amend.<sup>361</sup> This is problematic because, as one critic of IPRs noted, “[t]he reality for Patent Owners is that their opponents get the benefit of significantly lower standards than in district court litigation, but Patent Owners do not get the corresponding benefit of an ability to amend their claims in response to the unpatentability assertions.”<sup>362</sup> By making the standards for IPR more adjudicative and consistent with district court litigation, opponents would no longer benefit from broader claim construction or lower validity standards. Accordingly, the PTO could maintain a strict standard for motions to amend without skewing IPR proceedings in favor of petitioners.

## V. CONCLUSION

The first five years of the America Invents Act (AIA) has revealed basic disagreements about the function of post-grant proceedings, particularly with respect to the institutional role of the PTO. Many contend that such proceedings have essentially become an alternative for district court litigation with lower standards for validity. This Article identified two aspects of AIA Reviews that undercut their examinational function: the failure to incentivize early resolution of patent validity and the PTO’s limited capacity to independently examine claims in AIA Reviews.

EPO oppositions, however, demonstrate that post-grant proceedings can have adjudicative procedures but still screen out dubious patents early. This is partially attributable to the unique position of opposition proceedings in the European patent system, since there are currently no alternatives for resolving validity through a centralized proceeding. With the coming of the UPC, one topic for future inquiry is whether parties continue to file oppositions at the same rate even after UPC revocation proceedings become available. Indeed, some have already suggested that parties may take a “watch and wait” approach to challenging validity after the UPC.<sup>363</sup> Regardless, EPO oppositions provide a useful contrast to AIA Reviews, and offer guidance on how the PTO can use administrative patent reviews to better protect the public from overbroad patents and promote certainty in patent rights.

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<sup>361</sup> See *supra* Part III.A.2.

<sup>362</sup> Lewis & Irving, *supra* note 20, at 65.

<sup>363</sup> Stephanie Pilkington & Ling Zhuang, *EPO opposition reforms: the changing face of central patent revocation*, LIFE SCI. INTELL. PROP. REV. (July 28, 2016), <https://www.lifesciencesipreview.com/contributed-article/epo-opposition-reforms-the-changing-face-of-central-patent-revocation>.