

March 30, 2015

To: Information Correction Request,  
Director of the Office of Science and Technology Policy  
Executive Office of the President  
725 17th St. NW, Washington, DC 20502.  
By email: [ostpinfo@ostp.gov](mailto:ostpinfo@ostp.gov)

Re: **Petition for Correction under the Information Quality Act.**

Under the Information Quality Act<sup>1</sup> (“IQA”), I hereby submit this request for correction of information disseminated by the Executive Office of the President (“EOP”) in two publications:

- (1) The June 4, 2013 report entitled “*Patent Assertion and U.S. Innovation*”<sup>2</sup> prepared by the Office of Science & Technology Policy (“OSTP”), hereinafter referred to as the “PAE Report” and attached hereto as Exhibit A.
- (2) The June 4, 2013 White House online article by Gene Sperling entitled “*Taking on Patent Trolls to Protect American Innovation*,”<sup>3</sup> hereinafter referred to as the “Sperling Article” and attached hereto as Exhibit B.

The information in the PAE Report and in the Sperling Article (collectively the “Reports”) is disseminated by the government. As such, this information is subject to the IQA and its implementing regulations promulgated by the Office of Management and Budget (“OMB”) in Guidelines for government agencies<sup>4</sup> (“OMB Guidelines”), OMB’s Final Information Quality Bulletin for Peer Review<sup>5</sup> (“Peer Review Bulletin”), OMB’s Standards and Guidelines for Statistical Surveys,<sup>6</sup> and in OSTP’s own IQA Guidelines<sup>7</sup> (“OSTP Guidelines”).

As further detailed in Section 3 below, the information in the Reports is influential and is further subject to heightened requirements of the IQA. The Reports should be withdrawn and removed from all government websites, and corrected prior to any further dissemination or other related agency actions for the following reasons:

---

<sup>1</sup> Pub. L. No. 106-554, § 515, 114 Stat. 2763, 2763A–153–154 (2000). Codified in 44 U.S.C. § 3516 note.

<sup>2</sup> [www.whitehouse.gov/sites/default/files/docs/patent\\_report.pdf](http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf)

<sup>3</sup> [www.whitehouse.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation](http://www.whitehouse.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation).

<sup>4</sup> Office of Management and Budget, “Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies; Notice; Republication,” *67 Fed. Reg.* 8452-8460, (Feb. 22, 2002).

<sup>5</sup> Office of Management and Budget, “*Final Information Quality Bulletin for Peer Review*,” *70 Fed. Reg.* 2664 (Jan. 14, 2005).

<sup>6</sup> Office of Management and Budget, “*Standards and Guidelines for Statistical Surveys*,” *71 Fed. Reg.* 55522 (September 22, 2006). The full Standards and Guidelines document is available at [www.whitehouse.gov/omb/inforeg/statpolicy/standards\\_stat\\_surveys.pdf](http://www.whitehouse.gov/omb/inforeg/statpolicy/standards_stat_surveys.pdf), hereinafter referred to as the “Survey Standards.”

<sup>7</sup> Office of Science and Technology Policy, “*Final Guidelines for Ensuring the Quality of Disseminated Information*,” (Oct. 1, 2002), at [www.whitehouse.gov/sites/default/files/microsites/ostp/ostp-iqq.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp-iqq.pdf).

- (a) The Reports were published without subjecting their content to peer review and without otherwise conducting the IQA pre-dissemination review required by law, by OMB's implementing regulations, and by the OSTP Guidelines.
- (b) The Reports contain substantial errors and biased assessments of patent litigation effects; they lack the quality, objectivity, and utility required under the IQA.
- (c) The Reports fail to comply with the process and transparency requirements of the IQA for developing and disseminating *influential* information.
- (d) The Reports are entirely the product of a compilation of third-party studies that have not been subject to peer review; that have relied on opaque or erroneous methods and surveys; that lack objectivity; and that were generated through the support of entities known to have an interest in the direction of the results. The Reports' reliance on such authorities constitutes an impermissible agency use or endorsement of third-party information that does not comply with the requirements of the IQA.

Given the significant errors and noncompliance with the IQA described herein, pursuant to OSTP Guidelines § III(A), I hereby submit this Petition for Correction to require OSTP to correct the Reports through a transparent, public peer-reviewed process. While not exhaustive, specific items for correction are identified and explained in Section 5 by designators RFC1 through RFC21. Under OMB Guidelines § III(3)(i) and OSTP Guidelines § III(A)(5), I expect a response to this Petition within 60 days, informing me "of the corrections made."

## SUMMARY

Because the public disproportionately relies on information disseminated by the government, the government holds itself to substantially higher information quality standards than those used by private parties or non-government entities' in disseminating information on the internet or in academic journals, with its high variability in accuracy and reliability. Congress enacted the Information Quality Act ("IQA") in order to ensure that information disseminated by government agencies meet the standards of "quality, objectivity, utility, and integrity."<sup>8</sup> Information disseminated by the government for reliance by government and the public must be "presented in an accurate, clear, complete, and unbiased manner." The IQA forbids agencies from endorsing or approvingly disseminating information of substandard quality from third-parties.

The Office of Management and Budget ("OMB") promulgated and published in the Federal Register guidelines for agencies to comply with the IQA, including the Peer Review Bulletin and the Survey Standards. These quality standards are quite specific. For example, they set criteria for presentation and substantive balance and objectivity, transparency of data and methods, conditions under which peer-review is required, design of survey frames and sample coverage, minimum survey response rates below which specific bias analyses are required, etc. Virtually all government agencies, including the Executive Office of the President, are subject to these guidelines and

---

<sup>8</sup> IQA, § 515 (b)(2)(A).

standards. Under the IQA, agencies are required to establish administrative procedures enabling “affected persons” to seek *and obtain* correction of information maintained and disseminated by the agency that does not comply with the OMB IQA guidelines; the requester is allocated with the burden of showing that correction is required and agencies have established typically a 60-day period for their review and corrective action in response to such requests.

The White House disseminated the Reports that make factual assertions and draw inferences to influence public policy; these are scientific assessment documents with information disseminated by a government agency that is subject to the IQA’s statutory requirements. However, the Reports follow only the standards for non-peer reviewed publications, certainly not the IQA’s requirements. An OSTP response to Petitioner’s FOIA request reveals that contrary to a requirement of the IQA, the Reports had undergone no IQA pre-dissemination review

The Reports fail to comply with the IQA because they endorse and rely on third-party information that does not meet the requirements of the IQA. The third-party information invoked by the Reports include studies that have not been subject to peer review; that have relied on opaque or erroneous methods and surveys; that lack objectivity; and lack practical utility. These sources relied upon by the Reports purport to document patent litigation rates, quantify the private and social costs of patent litigation, survey of “victims” of PAE litigation, and show the purported adverse effects of PAE activities. The Reports generally fail the objectivity requirement of the IQA, both on presentation and substance, because they focus only on the purported negative aspects of NPEs or PAEs. The IQA “objectivity” standard requires analysis of the salutary economic benefits of patent enforcement or the role of NPE’s as intermediaries—analysis that is entirely omitted.

Petitioner demonstrates (including based on FOIA data) that the PAE Report is dominated by the works of its secret author, Professor Colleen Chien, substantially reflecting her views; all the figures in the PAE Report are taken from her works. The PAE Report omits in-text citations to her works from the bibliographic reference list and falsely attributes her survey results to another author. Together, these errors had the effect of concealing the dominance of her works in the PAE Report.

This Petition opens with a brief description of the context and emergence of the Reports in June 2013, followed by a section on the interest and standing of Petitioner under the IQA for agency consideration and corrective action. The legal standards for the types of agency information are reviewed, showing that the Reports disseminate information subject to the IQA, including a showing that third-party information used in the Reports is similarly subject to the IQA. The OMB’s directive for subjecting influential scientific assessments to peer review prior to dissemination is reviewed and it is shown that the dissemination in the Reports of such assessments requires peer review under the IQA. Next, OMB’s criteria promulgated in its Survey Standards for collection and dissemination of statistical information is presented, showing that statistical survey information disseminated in the Reports is subject to the Survey Standards under the IQA.

Petitioner shows that the Reports systemically fail the most important IQA requirements. To achieve agency compliance with identifiable IQA standards, the Petition concludes with 21 specific requests for correction supported by evidence and arguments. The Petition provides detailed analyses of fundamental flaws in data and methods used in eight commonly cited studies purported to document PAE harms, upon which the PAE Report relies. The Petition also identifies five in-text citations to papers that either, (i) do not exist, or (ii) are missing from the PAE Report's bibliographic reference list. The correction requests as a whole establishes the need to remove the Reports from all government websites until the corrections are made.

## TABLE OF CONTENTS

1	The emergence of the PAE Report .....	6
2	Interest and standing of Petitioner .....	8
3	The Reports are subject to the IQA and contain “Influential Information” .....	9
3.1	The Reports are subject to OMB’s Peer Review Bulletin .....	11
3.2	The Reports disseminate “highly influential scientific assessments” .....	12
3.3	The Reports disseminate and rely on third-party information that is subject to the IQA standards .....	13
3.4	The PAE Report disseminates information that is subject to the OMB Standards for Statistical Surveys.....	14
4	The Reports are subject to the President’s Open Government and Scientific Integrity orders .....	16
5	Specific Requests for Correction.....	17
5.1	The Reports should be withdrawn and submitted to peer-review prior to dissemination .....	17
5.2	The Reports disseminate erroneous and biased information regarding the economic costs of PAE activity.....	18
5.2.1	Failure to define the frequently-used terms “PAE” and “Patent Troll” .....	18
5.2.2	The alleged litigation cost asymmetry.....	20
5.2.3	“Private costs of lost opportunities to commercialize technology” .....	21
5.2.4	“Social costs of reduced innovation” .....	25
5.2.5	“Direct costs to firms that practice patents.” .....	26
5.3	The PAE Report disseminates erroneous and biased information regarding patent litigation activity .....	30
5.3.1	Historical trends in patent litigation.....	30
5.3.2	NPE’s relative role in patent litigation.....	32
5.4	The PAE Report disseminates biased information on PAE “victims” by relying on fundamentally flawed surveys and selective data .....	35
5.4.1	“Impact on smaller startups is particularly acute” .....	35
5.4.2	The “negative impact” on companies with over \$100 million in annual revenue.....	38
5.4.3	Flawed estimates of the number of PAE demand letters .....	40
5.4.4	Flawed inferences of defendants’ suppressed innovation .....	42
5.5	The Reports lack presentation and substance objectivity as a whole.....	45
5.5.1	Biased presentation of sources.....	45
5.5.2	Biased presentation of case studies .....	46
5.5.3	Concealing from the bibliography the dominance of a single author .....	47
6	Conclusion .....	48
7	Exhibits .....	49

## 1 The emergence of the PAE Report

Over recent years, legal commentators, information technology companies, some Members of Congress, and others have raised concerns about the adverse economic impact of patent infringement lawsuits by entities that own patents but do not make products—so-called Non-Practicing Entities (“NPEs”), often pejoratively called “patent trolls.” Such entities may include individual inventors and companies focused on licensing patents they developed themselves, or universities generating licensing income from asserting patents protecting inventions developed by university research, in addition to companies that buy patents from others for the purposes of generating income by asserting the patents.

The Reports claim to address only a subset of NPEs, those called Patent Assertion Entities (“PAEs”). Thus, PAEs are defined as NPEs that “acquire patents solely for the purpose of extracting payments from alleged infringers;” use “strategies for litigation tak[ing] advantage of their non-practicing status ... by masking their identity, and acquiring and asserting broad patents, some of questionable validity, in order to extract settlement fees;”<sup>9</sup> and “often abuse the U.S. intellectual property system’s strong protections by using tactics that create outside costs to defendants and innovators at little risk to themselves.”<sup>10</sup> As Section 5.2.1 explains, however, this distinction of PAEs from NPEs appears merely rhetoric, ill-defined, irreproducible, and incapable of application. On closer examination, most of the data that the PAE Report cites and disseminates is based on vague definitions of PAEs or NPEs and mostly pertain to the broadest NPE categories.<sup>11</sup> For this reason, the terms NPE and PAE are used herein interchangeably even though they are quite obviously not the same.

Policy decisions must be based on sound scientific and economic analyses of evidence rather than anecdotes, pseudo-science and leaps of faith. In Section 34 of the America Invents Act (“AIA”),<sup>12</sup> Congress directed the U.S. Government Accountability Office (“GAO”) to study the consequences of patent litigation by NPEs. The President, however, did not wait for the GAO findings or for any agency study. One month *before* the AIA’s major provisions would go into effect, the President proclaimed that the law was inadequate and that “smarter patent laws” were needed to solve a PAE litigation problem.<sup>13</sup> The President alleged that PAEs are “just trying to essentially leverage and hijack somebody else’s idea and see if they can extort some money out of them.”<sup>14</sup>

---

<sup>9</sup> PAE Report, at 4. The PAE Report does not explain the legal definition of the term “broad patents of questionable validity” and how it arrives at this determination for selecting.

<sup>10</sup> PAE Report, at 12.

<sup>11</sup> One source for the PAE Report data, PatentFreedom, defines an NPE very broadly “as any entity that earns or plans to earn the majority of its revenues from the licensing or enforcement of its patents.” What Is an NPE?, PatentFreedom, [www.patentfreedom.com/about-npes/background/](http://www.patentfreedom.com/about-npes/background/). For a review of the differing definitions used for PAEs and NPEs see: Christopher A. Cotropia, Jay P. Kesan, and David L. Schwartz, “Unpacking Patent Assertion Entities (PAEs)” (June 29, 2014), *Minnesota Law Review*, Forthcoming. Available at SSRN: <http://ssrn.com/abstract=2346381>

<sup>12</sup> Pub. L. No.112-29 § 34 (2011).

<sup>13</sup> PAE Report, at 2 (quoting President Obama’s remarks during a “Google+ fireside hangout”). See Erin Fuchs, “Obama Calls Patent Trolls Extortionists Who ‘Hijack’ People’s Ideas,” *Business Insider*, (Feb. 15, 2013) at [www.businessinsider.com/obamas-patent-comments-at-google-chat-2013-2](http://www.businessinsider.com/obamas-patent-comments-at-google-chat-2013-2).

<sup>14</sup> *Id.* Ironically, this populist assertion is counterfactual on its face. An inventor having obtained a valid patent on an idea cannot “hijack somebody else’s idea” because by the operation of patent law

It appears that these Presidential proclamations prejudicially sealed the content of the PAE Report well before it was generated. The White House set out to create the PAE Report and OSTP retained the consulting services of Professor Colleen Chien as its major author.<sup>15</sup> Without an objective public notice and comment process for collecting information from the public, from other patent scholars, or from litigation experts, it should come as no surprise that the information contained in the PAE Report was constrained by what might support the President’s policy views.<sup>16</sup> The Reports were released in June 2013, only 12 days after a draft patent litigation bill was introduced in the House,<sup>17</sup> having the effect of satisfying the bill’s proponents’ ostensible signal “that momentum is building behind efforts to enact meaningful legislation to address abusive patent litigation.”<sup>18</sup>

In August 2013, as directed by Congress, the GAO issued its report on the consequences of patent litigation by NPEs (“GAO Report”).<sup>19</sup> Contrary to the PAE Report’s assertions, the GAO report found that companies that make products brought most of the patent lawsuits and that NPEs brought only about one fifth of all such lawsuits.<sup>20</sup> The GAO Report found that “the focus on the identity of the litigant—rather than the type of patent—may be misplaced.”<sup>21</sup> The GAO Report’s only recommendation for action was non-legislative—that the U.S. Patent and Trademark Office (“PTO”) study ways to improve patent examination procedures to enhance the quality of issued patents.<sup>22</sup>

---

(35 U.S.C. § 102), the patent’s named inventor *must be* the true original inventor of the idea – not “somebody else.” The President’s assertion is tantamount to asserting that all NPE patents are invalid under § 102.

<sup>15</sup> Professor Chien’s major authorship role in the PAE Report has been confirmed in Petitioner’s communications with the OSTP FOIA Officer regarding Petitioner’s second FOIA Request No. 14-06 (attached hereto with interim response as Exhibit G). It was explained to Petitioner by phone and in the written interim response that because Professor Chien was retained as OSTP’s consultant to write the PAE Report, her drafts and communications with the White House is “deliberative” material withheld under the “consultant corollary” to FOIA exemption in 5 U.S.C. § 552(b)(5). Professor Chien subsequently became an OSTP full-time employee on September 16, 2013 (see <http://www.scu.edu/news/releases/release.cfm?c=17389>), had been on OSTP’s online roster through February 2015, but as of this writing is apparently no longer so employed.

<sup>16</sup> The dissemination of policy views is exempt from the IQA because policy views are not within OMB’s definition of “information.” See OMB Guidelines § V(5) (“This definition does not include *opinions*, where the agency’s presentation makes it clear that what is being offered is someone’s opinion rather than fact or the agency’s views.”) However, information disseminated in support of policy views is covered and subject to IQA requirements.

<sup>17</sup> See House Judiciary Committee Press Release, “[Goodlatte Releases Patent Discussion Draft](#),” (May 23, 2013).

<sup>18</sup> See House Judiciary Committee Press Release, “[Goodlatte Releases Statement on White House Patent Troll Proposal](#),” (Jun 4, 2013).

<sup>19</sup> U.S. Government Accountability Office, “Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality,” [GAO-13-465](#), (Aug 22, 2013).

<sup>20</sup> GAO Report, at 18. This value is substantially lower than the 45% found by the PAE Report for the same year (2011); see PAE Report, at 5.

<sup>21</sup> *Id.*, at 45.

<sup>22</sup> *Id.*, at 46.

A detailed study of “costs and benefits of PAE activity” has been initiated by the Federal Trade Commission (“FTC”).<sup>23</sup> The FTC sought to “collect information on PAE acquisition, litigation, and licensing practices” to fill the evidentiary void and address the “lack of empirical data in this area.”<sup>24</sup> An FTC Commissioner explained that the patent debate “is chock full of theory and supposition but completely devoid of empirical evidence....”<sup>25</sup> It is the lack of objectivity and sound empirical approach of the PAE Report juxtaposed with these independent government agencies’ analyses that underscores the need for corrections of the Reports, as shown below.

## 2 Interest and standing of Petitioner

The Reports pertain to the operation of the U.S. patent system and efforts to enforce patent rights. I am an inventor and owner of patent applications filed with the PTO and an independent author/scholar of the patent system. As such, I am an “affected person” within the meaning of the IQA because, in my scholarship role, I am among “those who use the information”<sup>26</sup> in the Reports and because, in my inventor/applicant role, I may “be harmed by the publicly disseminated information”<sup>27</sup> in the Reports or through its use by other agencies or third parties.

The IQA requires, and OMB Guidelines direct, agencies to “establish administrative mechanisms allowing affected persons to seek *and obtain* correction of information maintained and disseminated by the agency that does not comply with these OMB guidelines.”<sup>28</sup> As explained below, the Reports do not comply with the quality requirements of the OMB Guidelines and OSTP Guidelines and as “an affected person” I therefore seek their correction pursuant to OMB Guidelines §§ II(2), III(3) and OSTP Guidelines § III(A).

---

<sup>23</sup> FTC Press Release, “FTC Seeks to Examine Patent Assertion Entities and Their Impact on Innovation, Competition,” (September 27, 2013) (“Patents are key to innovation and competition, so it’s important for us to get a better understanding of how PAEs operate,” said FTC Chairwoman Edith Ramirez. “We want to use our 6(b) authority to expand the empirical picture on the costs and benefits of PAE activity. What we learn will support informed policy decisions.”).

<sup>24</sup> Federal Trade Commission, Notice and Request for Public Comment on Information Collection regarding PAE Activity, 78 *Fed. Reg.* 61352, 61353 (October 3, 2013). See also FTC’s Supporting Statement describing the data to be collected in ICR 201405-3084-002 (May-15-2014, approved Aug-8-2014) at [www.reginfo.gov/public/do/DownloadDocument?documentID=475633&version=1](http://www.reginfo.gov/public/do/DownloadDocument?documentID=475633&version=1).

<sup>25</sup> Remarks of FTC Commissioner Joshua Wright, *Law360* (September 4, 2014) (“One of the most fascinating things about the policy debates in and around patents and by extension the intersection of patent and antitrust law, is that most of the debate is chock full of theory and supposition but completely devoid of empirical evidence...”).

<sup>26</sup> OSTP Guidelines, § V(1). The OMB Guidelines rely on its previous 2001 definition of “affected persons” as “people who may benefit or be harmed by the disseminated information. This includes persons who are seeking to address information about themselves as well as persons who use information.” See “*Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*,” 66, *Fed. Reg.* 49718, 49721 (September 28, 2001).

<sup>27</sup> *Id.*

<sup>28</sup> IQA § 515(b)(2)(B), OMB Guidelines, § II(2). (Emphasis added).



### 3 The Reports are subject to the IQA and contain “Influential Information”

The PAE Report is styled as an article in student-edited law review journal, perhaps in keeping with the usual publication modality of its major author, Professor Colleen Chien. However, this report and its summary in the Sperling Article cannot be treated and disseminated by OSTP in the same way that Professor Chien might under her name in non-refereed law-review journals; because the public disproportionately relies on information disseminated by the government, the government holds itself to substantially higher quality standards. The Reports make factual assertions and are scientific assessment documents “disseminated”<sup>29</sup> by the EOP—an agency subject to the IQA.<sup>30</sup> The Reports disseminate a wide array of purported facts; the disseminated information is not “limited to correspondence with individuals or persons, press releases, archival records, public filings, subpoenas or adjudicative processes;”<sup>31</sup> the Reports do not in any way suggest that the assertions therein “are subjective opinions or policy recommendations, rather than facts,” nor does the information fall under any other exception in the definition of “information” in the OSTP Guidelines § V(2)(a–h). As such, the information disseminated in the Reports is subject to the statutory IQA requirements of “quality, objectivity, utility, and integrity of information (including statistical information).”<sup>32</sup>

OMB Guidelines define the term Information “Quality” as “an encompassing term comprising utility, objectivity, and integrity.”<sup>33</sup> The “objectivity” standard focuses both on presentation and substance—whether the information is “accurate, reliable, and unbiased *and* whether the information is presented in an accurate, clear, complete, and unbiased manner.”<sup>34</sup> The “integrity” standard refers to information resilience against

---

<sup>29</sup> OMB Guidelines § V(8) (“Dissemination” means agency initiated or sponsored distribution of information to the public (see 5 CFR § 1320.3(d) (definition of ‘Conduct or Sponsor’).); *See also* OSTP Guidelines § V(3).

<sup>30</sup> *See 67 Fed. Reg.* 8458 (Agencies subject to the IQA are those subject to the Paperwork Reduction Act, which expressly lists in 44 U.S.C. § 3502(1) the Executive Office of the President).

<sup>31</sup> *Id.*, at 8460.

<sup>32</sup> IQA, § 515 (b)(2)(A).

<sup>33</sup> OMB Guidelines § V(1); OSTP Guidelines § V(4).

<sup>34</sup> OMB Guidelines § V(3) (“Objectivity” involves two distinct elements, presentation and substance.

- a. ‘Objectivity’ includes whether disseminated information is being *presented in an accurate, clear, complete, and unbiased manner*. This involves whether the information is presented within a proper context. Sometimes, in disseminating certain types of information to the public, *other information must also be disseminated* in order to ensure an accurate, clear, complete, and unbiased presentation. Also, the agency needs to identify the sources of the disseminated information (to the extent possible, consistent with confidentiality protections) and, in a scientific, financial, or statistical context, the supporting *data and models*, so that the public can assess for itself whether there may be *some reason to question the objectivity of the sources*. Where appropriate, data should have full, accurate, transparent documentation, and error sources affecting data quality should be identified and disclosed to users.
- b. In addition, ‘objectivity’ involves a focus on ensuring accurate, reliable, and *unbiased* information. In a scientific, financial, or statistical context, the original and supporting data shall be generated, and the analytic results shall be developed, *using sound statistical and research methods.* . . . .
  - ii. If an agency is responsible for disseminating *influential* scientific, financial, or statistical information, agency guidelines shall include a high degree of transparency about data and methods to

corruption or unauthorized alteration, whereas the “utility” standard refers to “the usefulness of the information to its intended users, including the public.”<sup>35</sup>

OMB’s Guidelines and the OSTP Guidelines require that the agency further enhance the quality of disseminated information classified as “influential.” “Influential information” generally refers to information that “will have a clear and substantial impact on important public policies or important private sector decisions.”<sup>36</sup> Therefore, agencies are required to hold the information designated as “influential” to a higher standard of reproducibility and transparency than information that is not so defined.<sup>37</sup> Under the OMB Guidelines and the OSTP Guidelines, such influential information must meet “a high degree of transparency about data and methods to facilitate the reproducibility of such information by qualified third parties.”<sup>38</sup> “Reproducibility’ means that the information is capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>39</sup>

The information in the Reports is unambiguously influential; it is used and extensively quoted by the public, the press, and the government.<sup>40</sup> For example, on the same day that the EOP published the Reports, it also issued a companion “Fact Sheet” detailing five executive actions and seven legislative recommendations.<sup>41</sup> These administrative policies have been justified and are predicated in part on the purported harm and “significant toll” on our economy due to PAEs litigation as set forth in the PAE

---

facilitate the *reproducibility* of such information by qualified third parties.”) (emphasis added); See also OSTP Guidelines §§ V(4) and (6).

<sup>35</sup> OMB Guidelines § V(2) (“‘Utility’ refers to the usefulness of the information to its intended users, including the public. In assessing the usefulness of information that the agency disseminates to the public, the agency considers the uses of the information not only from its own perspective but also from the perspective of the public. As a result, when transparency of information is relevant for assessing the information’s usefulness from the public’s perspective, the agency *must* take care to ensure that transparency has been addressed in its review of the information”) (emphasis added); See also OSTP Guidelines § V(5).

<sup>36</sup> OMB Guidelines § V(9) (“‘Influential’, when used in the phrase ‘influential scientific, financial, or statistical information’, means that the agency can reasonably determine that dissemination of the information will have or does have a clear and substantial impact on important public policies or important private sector decisions.”); See also OSTP Guidelines § V(7).

<sup>37</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

<sup>38</sup> OMB Guidelines § V(3)(b)(ii); OSTP Guidelines § V(6)(b)(ii).

<sup>39</sup> OMB Guidelines § V(10) (“‘Reproducibility’ means that the information is capable of being substantially reproduced, subject to an acceptable degree of imprecision. ... With respect to analytic results, ‘capable of being substantially reproduced’ means that independent analysis of the original supporting data using identical methods would generate similar analytic results, subject to an acceptable degree of imprecision or error.”); OMB Guidelines § V(3)(b)(ii) (“If an agency is responsible for disseminating influential scientific, financial, or statistical information, agency guidelines shall include a high degree of transparency about data and methods to facilitate the reproducibility of such information by qualified third parties.”); See also OSTP Guidelines § V(8).

<sup>40</sup> As of February 20, 2015 the Google search engine obtains about 48,000 documents citing the PAE Report and more than 1,000 citing the Sperling Article.

<sup>41</sup> White House Fact Sheet: “*White House Task Force on High-Tech Patent Issues – Legislative Priorities & Executive Actions*,” (June 04, 2013) at <http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues>, attached hereto as Exhibit C and hereinafter referred to as the “Fact Sheet.”

Report.<sup>42</sup> The PTO subsequently referred to the Sperling Article and invoked the PAE Report as the underlying basis for agency action.<sup>43</sup> The Acting PTO Director used the PAE Report as an authority for her assertion that “some PAEs engage in aggressive litigation practices that tie up consumers and competitors’ legitimate innovations with threats of lawsuits for patent infringement.”<sup>44</sup> The House Judiciary Committee Chairman relied on the PAE Report in his statement that “[p]atent trolls have a significant impact on American competitiveness, costing our economy billions of dollars each year.”<sup>45</sup>

Moreover, the information in the Reports is “influential information” because it is used in agency and Congressional statements, inarguably for the purpose of influencing public policy and private sector decisions. For example, the Reports estimate that PAE lawsuits have tripled in just the last two years, rising to 62 percent of all infringement suits,<sup>46</sup> and that PAE lawsuits resulted in lost wealth of over \$300 billion in four years starting in 2007.<sup>47</sup> This information in part formed the basis for advocating public policies, ostensibly to reduce these putative private losses, and therefore “have a clear and substantial impact on important public policies and important private sector decisions”<sup>48</sup>—it is clearly “influential information” within the meaning of the IQA regulations.

### 3.1 The Reports are subject to OMB’s Peer Review Bulletin

As part of the IQA regulations, OMB issued the Peer Review Bulletin which requires substantive peer review prior to dissemination of all “influential scientific information” disseminated after June 15, 2005.<sup>49</sup> The Peer Review Bulletin employs the IQA framework of “influential information” to define “influential scientific information”<sup>50</sup>

---

<sup>42</sup> See the Sperling Article. (“Today we are releasing a study [the PAE Report] on the issue that documents the significant toll this issue is taking on our economy and on innovation, and we are excited to announce both Executive actions the Obama Administration is taking, and the legislative measures that we are calling on Congress to pass to protect American innovators.”); See also the Fact Sheet stating “The White House issued five executive actions and seven legislative recommendations designed to protect innovators from frivolous litigation and ensure the highest-quality patents in our system. Additionally, the [EOP released the PAE Report], detailing the challenges posed and necessity for bold legislative action.”)

<sup>43</sup> PTO, “*USPTO and the Obama Administration Taking Action to Improve Incentives for Future Innovation via High Tech Patents*, (June 17, 2013) (noting that “[the PAE Study] documents the rise of litigation by so-called [PAEs]” and that the PTO actions are predicated on such findings). Available at [http://www.uspto.gov/blog/director/entry/uspto\\_and\\_the\\_obama\\_administration](http://www.uspto.gov/blog/director/entry/uspto_and_the_obama_administration), attached hereto as Exhibit D.

<sup>44</sup> Remarks of Teresa Stanek Rea, “Lectures on American Patent Law,” Japan Patent Attorney Association, Tokyo, Japan (August 29, 2013). [www.uspto.gov/about-us/news-updates/lectures-american-patent-law](http://www.uspto.gov/about-us/news-updates/lectures-american-patent-law).

<sup>45</sup> See House Judiciary Committee Press Release, “*Goodlatte Releases Statement on White House Patent Troll Proposal*,” (Jun 4, 2013).

<sup>46</sup> PAE Report, at 1, 5; Sperling Article at 1.

<sup>47</sup> PAE Report, at 9.

<sup>48</sup> OMB Guidelines § V(9); OSTP Guidelines § V(7).

<sup>49</sup> 70 *Fed. Reg.* at 2667, 2675.

<sup>50</sup> *Id.* (“The term ‘influential scientific information’ means scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions.”)

and explains that “the term ‘scientific information’ means *factual inputs, data, models, analyses, technical information, or scientific assessments* related to such disciplines as the behavioral and *social sciences*, public health and medical sciences, life and earth sciences, engineering, or physical sciences.”<sup>51</sup> The Peer Review Bulletin states that “[t]his includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms.”<sup>52</sup>

The subject matter and information disseminated in the Reports pertain to economic effects studied within the field of “social science.”<sup>53</sup> Indeed, as Exhibit E shows, 16 out of the 20 journal articles cited in the PAE Report are featured online by the *Social Science Research Network* ([www.SSRN.com](http://www.SSRN.com)). As shown above, this scientific information “will have or does have a clear and substantial impact on important public policies or private sector decisions,” and because its scientific subject matter falls within the scope covered by the Peer Review Bulletin, it is “influential scientific information” that requires peer review prior to dissemination.<sup>54</sup> The OMB Guidelines require that when “peer review is employed to help satisfy the [IQA] objectivity standard, the review process employed shall meet the general criteria for competent and credible peer review” and that “peer reviews be conducted in an *open* and rigorous manner.”<sup>55</sup> For the foregoing reasons, the Reports should have been subjected to such peer review in accordance with the Peer Review Bulletin.

### **3.2 The Reports disseminate “highly influential scientific assessments”**

The Peer Review Bulletin defines “scientific assessment” as “an evaluation of a body of scientific or technical knowledge that typically synthesizes multiple factual inputs, data, models, assumptions, and/or applies best professional judgment to bridge uncertainties in the available information.”<sup>56</sup> The Reports disseminate scientific assessments of adverse economic effects of PAE patent litigation and often attempt “judgment to bridge uncertainties in the available information.”

A scientific assessment is considered “highly influential” if it is determined “that the dissemination could have a potential impact of more than \$500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest.”<sup>57</sup> This is important because the Peer Review Bulletin applies stricter minimum requirements for the peer review of highly influential scientific assessments.<sup>58</sup>

---

<sup>51</sup> *Id.* (Emphasis added).

<sup>52</sup> *Id.*

<sup>53</sup> The Merriam Webster Dictionary defines “social science” as “a science (as economics or political science) dealing with a particular phase or aspect of human society.”

<sup>54</sup> 70 *Fed. Reg.* at 2667, 2675.

<sup>55</sup> OMB Guidelines, § V(3)(b)(i).

<sup>56</sup> 70 *Fed. Reg.* at 2665, 2675.

<sup>57</sup> *Id.*, at 2671.

<sup>58</sup> *Id.*, at 2665, 2671-2672

The PAE Report disseminates a scientific assessment that lawsuits by PAEs cause lost wealth of over \$75 billion per year.<sup>59</sup> This scientific assessment is provided to influence the public and the Congress to support the White House Task Force’s actions and recommendations detailed in the Fact Sheet. For this to be “highly influential scientific assessment”—having a potential impact of more than \$500 in any one year—the public and government responses need only have a potential of changing by 0.66% the purported losses due to PAE suits. This miniscule percentage is presumptively a lower impact than that contemplated in publishing the Reports, meaning that the Reports disseminate highly influential scientific assessments as this term is defined in the Peer Review Bulletin.

Moreover, the information in the Reports constitutes “highly influential scientific assessments” because it “is novel, controversial, or precedent-setting, or has significant interagency interest.”<sup>60</sup> Indeed, as shown in Section 5.2.3 below, the PAE Report’s use of information from questionable stock event studies to estimate a \$300 billion loss due to patent litigation, is both novel and controversial. As shown in Petitioner’s analysis described in Section 5.2.3,<sup>61</sup> it is both “the approach used in the assessment” and “the interpretation of the information itself that is novel or precedent-setting.”<sup>62</sup> Finally, the executive actions predicated on the Reports involve “significant interagency interest:” the Fact Sheet issued with the Reports details the involvement of the PTO, the Federal Trade Commission, the Department of Justice, the U.S. International Trade Commission, the U.S. Customs and Border Protection, and the U.S. Intellectual Property Enforcement Coordinator.

For all the reasons described above, the Reports contain “highly influential scientific assessments,” requiring not only a substantive peer review process prior to dissemination, but a peer review conducted in accordance with OMB’s most stringent requirements.

### **3.3 The Reports disseminate and rely on third-party information that is subject to the IQA standards**

The OMB Guidelines provide that “if an agency, as an institution, disseminates information prepared by an outside party in a manner that reasonably suggests that the agency agrees with the information, this appearance of having the information represent agency views makes agency dissemination of the information subject to *these* [OMB] *guidelines*.”<sup>63</sup> The OSTP Guidelines are similar—excluding from the definition of “information” any third-party information that the OSTP “does not expressly rely upon.”<sup>64</sup> However, any ambiguity in the OSTP’s “express reliance” exclusion must be

---

<sup>59</sup> PAE Report, at 9 (asserting \$300 billion lost wealth in four years).

<sup>60</sup> 70 *Fed. Reg.* at 2671.

<sup>61</sup> See Katznelson (2014), note 118 *infra* and accompanying text.

<sup>62</sup> 70 *Fed. Reg.* at 2671.

<sup>63</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

<sup>64</sup> OSTP Guidelines §V(2)(b) (“Information originated by, and attributed to, non-agency sources, provided OSTP does not expressly rely upon it. Examples include: non-U.S. government information reported and duly attributed in materials prepared and disseminated by OSTP; hyperlinks on OSTP’s web site to information that others disseminate; and reports of advisory committees and international

resolved in favor of the unambiguous OMB Guidelines.<sup>65</sup> Similarly, the Peer Review Bulletin states that “if an agency plans to disseminate information supplied by a third party (e.g., using this information as the basis for an agency’s factual determination that a particular behavior causes a disease), the requirements of the Bulletin apply, if the dissemination is ‘influential.’”<sup>66</sup>

As shown in Section 5 below, the PAE Report disseminates information from third-party studies that it “expressly relies upon” “as the basis for an agency’s factual determination that a particular behavior [of PAE’s] causes [economic harm].” It does so “in a manner that reasonably suggests that the agency agrees with the information”—it even uses the information as a basis for its central assertions under the various *headings* in the PAE Report.<sup>67</sup> This information is therefore also subject to all IQA standards.

### **3.4 The PAE Report disseminates information that is subject to the OMB Standards for Statistical Surveys**

The PAE Report disseminates information collected in statistical surveys (e.g. see PAE Report, Figure 2; and other surveys described in Section 5 herein). Surveys are collections of information subject to the requirements of the Paperwork Reduction Act of 1980 as amended (“PRA”)<sup>68</sup> and the IQA. The OMB has broad authority to develop and oversee the implementation of Government-wide policies, principles, standards, and guidelines concerning “statistical information presentation and dissemination.”<sup>69</sup> Pursuant to this authority, OMB promulgated the Survey Standards with which agencies that disseminate information collected in surveys must comply, irrespective of the entity collecting the information.<sup>70</sup> The Survey Standards “document the professional principles and practices that Federal agencies are *required* to adhere to and the level of quality and effort expected in *all* statistical activities” of the government.<sup>71</sup> The Survey Standards apply to all Federal agencies subject to the

---

organizations published on agency's web site”).

<sup>65</sup> IQA, § 515(b)(1); *See also* OMB Guidelines, 67 *Fed. Reg.* at 8452, at 8453 (“These guidelines apply to Federal agencies subject to the Paperwork Reduction Act (44 U.S.C. chapter 35),” § II(2) at 8458; § IV(1) at 8459; OSTP Guidelines § I(1) (“the [OSTP] will operate to ensure and *maximize* the quality, objectivity, utility and integrity of the information it disseminates to the public, and to implement the [IQA] *in accordance with OMB standards.*”) (emphasis added); §§ I(3);II(4); II(8-12); III(1).

<sup>66</sup> 70 *Fed. Reg.* at 2667.

<sup>67</sup> *See* PAE Report, e.g. Figure 1 at 5; Figure 2 at 11; headings at 9-11, predicated solely on third-party studies such as “The Economic Cost of PAE Activity,” “Direct costs to firms that practice patents,” “Private costs of lost opportunities to commercialize technology,” “Social costs of reduced innovation,” and “Impacts of a PAE Demand on Technology Startups.”

<sup>68</sup> Pub. Law No. 104-13, 44 U.S.C. § 3501 et seq. OMB’s implementing regulations are set forth at 5 C.F.R. § 1320.

<sup>69</sup> 44 U.S.C. § 3504(e)(3)(C). *See also* 31 U.S.C. § 1104(d) (The Administrator for the Office of Information and Regulatory Affairs in OMB has the responsibility to “develop programs and prescribe regulations to improve the compilation, analysis, publication, and *dissemination* of statistical information by executive agencies.”) (Emphasis added).

<sup>70</sup> 44 U.S.C. § 3506(e)(4) (Agencies must “observe Federal standards and practices for data collection, analysis, documentation, sharing, and *dissemination* of information.”) (Emphasis added).

<sup>71</sup> Survey Standards, at 1, (emphasis added).

PRA.<sup>72</sup> The EOP, including OSTP is subject to the Survey Standards, just as they are subject to the PRA and the IQA.<sup>73</sup>

Because agency IQA guidelines address the information quality requirements only generally, the Survey Standards contain an explanation of how these general requirements of *objectivity* (in *substance* and *presentation*), *reliability* and *utility* apply for survey information:<sup>74</sup> Statistical survey standards related to the production of accurate, objective, unbiased, and reliable information include the Survey Design Standard (1.2), Survey Response Rates (1.3), Developing Sampling Frames (2.1), Required Notifications to Potential Survey Respondents (2.2), Data Collection Methodology (2.3), Data Editing (3.1), Nonresponse Analysis and Response Rate Calculation (3.2), Coding (3.3), Evaluation (3.5), Developing Estimates and Projections (4.1), Analysis and Report Planning (5.1), and Inference and Comparisons (5.2).

Statistical survey standards related to *presenting* results in an accurate, clear, and unbiased manner include:<sup>75</sup> Review of Information Products (6.1), Survey Documentation (7.3), and Documentation and Release of Public-Use Microdata (7.4). The specific standards that contribute directly to the *utility* and the dissemination of information include:<sup>76</sup> Survey Planning (1.1), Survey Design (1.2), Pretesting Survey Systems (1.4), Review of Information Products (6.1), Releasing Information (7.1), Survey Documentation (7.3), and Documentation and Release of Public-Use Microdata (7.4).

For example, in compliance with the *objectivity* requirement of the IQA to avoid or properly account for bias, Survey Standard 1.3 requires that survey designs ensure “that survey results are representative of the target population so that they can be used with confidence to inform decisions.”<sup>77</sup> Hence, Survey Standard 2.1 requires that sample frames be “appropriate for the study design and are evaluated against the target population for quality.”<sup>78</sup> To ensure proper representation of the target population, Survey Standard 3.2 requires measurement, adjustment for, reporting, and analysis of unit and item nonresponse. Response rates must be computed using standard formulas to measure the proportion of the eligible sample that is represented by the responding units in each study, as an indicator of potential nonresponse bias.<sup>79</sup> Survey Standard 1.2 requires that when a nonprobabilistic sampling method is employed (non-random sampling), an estimate of the potential bias be provided and a showing that “units not in the sample are impartially excluded on objective grounds.”<sup>80</sup> In addition, Survey Standard 1.3 also requires a nonresponse bias analysis if the

---

<sup>72</sup> 71 *Fed. Reg.* 55522.

<sup>73</sup> Dissemination of collected survey information is subject to the PRA, 44 U.S.C. § 3502(1), which expressly lists the Executive Office of the President.

<sup>74</sup> Survey Standards, at 2.

<sup>75</sup> *Id.*, at 2.

<sup>76</sup> *Id.*, at 3.

<sup>77</sup> *Id.*, at 8.

<sup>78</sup> *Id.*, at 9.

<sup>79</sup> *Id.*, at 14.

<sup>80</sup> *Id.*, at 7. See Guideline 1.2.3.

survey unit response rate is below 80 percent and if the item response rate is below 70 percent for any items used in a report.<sup>81</sup>

The surveys which the PAE Report relies upon are covered by the Survey Standards because they are “surveys whose statistical purposes include the description, estimation, or analysis of the characteristics of groups, segments, activities, or geographic areas in any biological, demographic, *economic*, environmental, natural resource, physical, social, or other sphere of interest.”<sup>82</sup> As explained in Section 3.3, the fact that third-parties collected the survey information is immaterial as long as the agency itself disseminates, or “endorses,” or “expressly relies upon” the information. When, as here, an agency uses such survey information in disseminating “influential information,” the survey information is subject to OMB’s heightened IQA requirements which include the Survey Standards.

#### **4 The Reports are subject to the President’s Open Government and Scientific Integrity orders**

President Obama has made transparency a signal initiative of his administration: just one day after taking office, he issued an executive order on Open Government.<sup>83</sup> The OMB subsequently implemented this order including by issuing an information quality directive to all agencies as follows: “To improve the quality of government information available to the public, senior leaders should make certain that the information conforms to OMB guidance on information quality and that adequate systems and processes are in place within the agencies to promote such conformity.”<sup>84</sup>

In addition, in his Scientific Integrity order, the President assigned to the OSTP the “responsibility for ensuring the highest level of integrity in all aspects of the executive branch’s involvement with scientific and technological processes.”<sup>85</sup> The President stated as follows: “The public must be able to trust the science and scientific process informing public policy decisions. Political officials should not suppress or alter scientific or technological findings and conclusions.”<sup>86</sup> Specifically, the President directed OSTP to help guarantee that: “(1)(b) Each agency should have appropriate rules and procedures to ensure the integrity of the scientific process within the agency; (1)(c) When scientific or technological information is considered in policy decisions, the information *should be subject to well-established scientific processes, including peer*

---

<sup>81</sup> *Id.*, at 8. See Guidelines 1.3.4 and 1.3.5.

<sup>82</sup> *Id.*, at 1 (emphasis added).

<sup>83</sup> President Barack Obama, “*Transparency and Open Government*,” Memorandum for the Heads of Executive Departments and Agencies, *74 Fed. Reg. 4685 (January 26, 2009)* (“My Administration is committed to creating an unprecedented level of openness in Government.”)

<sup>84</sup> Peter Orszag, EOP Memorandum No. M-10-06, Open Government Directive 1 (December 8, 2009), available at [http://www.whitehouse.gov/sites/default/files/omb/assets/memoranda\\_2010/m10-06.pdf](http://www.whitehouse.gov/sites/default/files/omb/assets/memoranda_2010/m10-06.pdf).

<sup>85</sup> President Barak Obama, “*Scientific Integrity*,” Memorandum for the Heads of Executive Departments and Agencies, *74 Fed. Reg. 10671 (March 11, 2009)*

<sup>86</sup> *Id.* An accompanying White House fact sheet states that “[t]he public must be able to trust that advice, as well, and to be confident that public officials will not conceal or distort the scientific findings that are relevant to policy choices.” [www.whitehouse.gov/the-press-office/fact-sheet-presidential-memorandum-scientific-integrity](http://www.whitehouse.gov/the-press-office/fact-sheet-presidential-memorandum-scientific-integrity).



*review where appropriate, and each agency should appropriately and accurately reflect that information in complying with and applying relevant statutory standards.”*<sup>87</sup>

Pursuant to the President’s order, the Director of the OSTP issued the Scientific Integrity Memo to all agencies,<sup>88</sup> which directs them to develop policies that

[e]nsure a culture of scientific integrity. Science, and public trust in science, thrives in an environment that shields scientific data and analyses from inappropriate political influence; political officials should not suppress or alter scientific or technological findings.<sup>89</sup>

OSTP’s Scientific Integrity Memo further stressed:

Of particular importance are ... ensuring that data and research used to support policy decisions undergo *independent peer review by qualified experts*, where feasible and appropriate, and consistent with law, [and] setting clear standards governing conflicts of interest.<sup>90</sup>

As the lead agency tasked to ensure compliance by all government agencies with the Scientific Integrity Memo, surely these requirements apply to OSTP *itself*, and should have been met by OSTP prior to dissemination of the Reports. In any case, the Reports contain scientific “information that is considered in policy decisions,” and which “should be subject to well-established scientific processes;” the content of the Reports is subject to the Scientific Integrity Memo.

## **5 Specific Requests for Correction**

The following subsections include specific requests for corrections under the IQA, enumerated by an index “RFC*n*,” wherein *n* is the request number. The justifications for the changes or other remedial actions being sought are provided in texts preceding these specific enumerated requests. Further justification for all these requests is that if left uncorrected, the disseminated information in the Reports will continue to wrongly and adversely affect important public policies or important private sector decisions.

### **5.1 The Reports should be withdrawn and submitted to peer-review prior to dissemination**

Petitioner has learned that the Reports were not subjected to peer review during their preparation or prior to dissemination. The OSTP response to Petitioner’s first Freedom of Information Act (“FOIA”) request clearly admits that the Reports did not undergo peer review and that *no IQA pre-dissemination review of the Reports was conducted as*

---

<sup>87</sup> 74 *Fed. Reg.* at 10671. (Emphasis added).

<sup>88</sup> John P. Holdren, “*Scientific Integrity*,” Memorandum for the heads of executive departments and agencies, (Dec. 17, 2010) at [www.whitehouse.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/scientific-integrity-memo-12172010.pdf)

<sup>89</sup> *Id.* at 1.

<sup>90</sup> *Id.* at 1-2, (emphasis added).

required by OSTP Guidelines §I(2) and by OMB Guidelines §III(2).<sup>91</sup> The OSTP further represented that it found no records documenting the mere “approvals of [the PAE Report’s] public dissemination.” This is consistent with either a total lack of supervisory procedural checks on material released by the White House or the illegal withholding of responsive information to protect from embarrassment the White House official who approved the dissemination of the PAE Report.

Ironically, the very agency that is tasked with ensuring compliance with the Scientific Integrity Memo failed to comply with its own directives and with the requirements of the IQA. For reasons explained in Sections 3 through 3.2, the Reports should have undergone peer-review—no other option exists under the IQA given their influential information content. Moreover, as Exhibit E shows, *none* of the references upon which the PAE Report relies for its scientific assessments were published in refereed journals. In any event, in its own Guidelines the OSTP committed that “[i]f underlying data are not peer reviewed, OSTP will work to ensure the data’s methodology and potential deficiencies are transparent, and candidly discussed in the report being prepared for public dissemination.”<sup>92</sup> Despite this commitment, the Reports contain no discussion whatsoever to “ensure the data’s methodology and potential deficiencies are transparent” and therefore fail to comply with even this narrow OSTP Guideline in §II(9).

**RFC1.** For the foregoing reasons, I request that the Reports be corrected by subjecting them to a transparent and public peer-review process as required under the OMB Guidelines,<sup>93</sup> under the Peer Review Bulletin,<sup>94</sup> under the OSTP Guidelines § I(9), and also under the President’s Open Government and Scientific Integrity orders.

## **5.2’ The Reports disseminate erroneous and biased information regarding the economic costs of PAE activity**

### *5.2.1 Failure to define the frequently-used terms “PAE” and “Patent Troll”*

A Patent is a legal instrument that is presumed valid<sup>95</sup> and capable of assertion by its holder. By the plain meaning of words, *every* patent holder that ever *asserts* its patent is a Patent Assertion Entity, or a PAE. The PAE Report, however, purports to define PAEs more narrowly, by their being NPEs, *and* by their actions of “acquiring and asserting broad patents, some of questionable validity, in order to extract settlement fees;”<sup>96</sup> and by conduct alleged to “often abuse the U.S. intellectual property system’s

---

<sup>91</sup> FOIA Request No. 13-112; OSTP Response, (August 7, 2013), attached hereto as Exhibit F. (In response to request for the records of the Reports’ peer-review and IQA pre-dissemination review, the agency wrote: “OSTP conducted a search of its records and has located no documents that are responsive your [sic] request.”)

<sup>92</sup> OSTP Guidelines §II(9).

<sup>93</sup> OMB Guidelines, § V(3)(b)(i) (requiring that that “peer reviews be conducted in an *open* and rigorous manner”) (emphasis added).

<sup>94</sup> 70 *Fed. Reg.* at 2667, 2675.

<sup>95</sup> 35 U.S.C. §282. (“A patent shall be presumed valid. ... The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.”)

<sup>96</sup> PAE Report, at 4. The PAE Report does not explain the legal definition of the term “broad patents of questionable validity” and how it arrives at this determination for making the identification.

strong protections by using tactics that create outsize costs to defendants and innovators at little risk to themselves.”<sup>97</sup>

However, the Reports fail to identify boundaries beyond which patents should be considered “broad patents.” Nor is there an explanation of who determines, and how a determination is made, that a patent is of “questionable validity” when it must be presumed valid under the patent law.<sup>98</sup> Moreover, some studies suggest that characterizations of PAEs as a class having patents of lower quality or “questionable validity” appears counterfactual because litigated NPE patents were found to have equal or higher quality.<sup>99</sup> The Reports also fail to define what constitutes an “abuse” of the US patent system and the cost level beyond which costs to defendants constitute “outsize costs.” Studies show that PAEs as a class do not exploit patents illegitimately.<sup>100</sup> Equating the term PAE with the undefined but obviously pejorative term—“patent troll”<sup>101</sup>—adds no definitional clarity.

Therefore, the Reports employ indeterminate subjective criteria that are incapable of application for distinguishing PAEs from other NPEs; any identification of PAEs in the Reports is therefore irreproducible by a qualified third party. This patent holder category in the Reports is as arbitrary and indeterminate as it is in the literature it cites with respect to purported PAEs. The indefiniteness of the term PAE is exemplified by one researcher’s assertion that PAE studies in the literature miss as much as 85% of PAE-asserted patents.<sup>102</sup>

---

<sup>97</sup> PAE Report, at 12.

<sup>98</sup> The PAE Report’s alternate characterization at 4 is equally incapable of definition: “[PAEs] acquire patents whose claim boundaries are unclear, and then (with little specific evidence of infringement) ask many companies at once for moderate license fees, assuming that some will settle instead of risking a costly and uncertain trial.” To distinguish PAEs’ patents from other patents, who determines, and how is a determination made, that “claim boundaries are unclear”? What is considered *sufficient* “specific evidence of infringement” that would otherwise distinguish other patentees from PAEs?

<sup>99</sup> Sannu K. Shrestha, “Note, Trolls or Market-Makers? An Empirical Analysis of Nonpracticing Entities,” 110 *Colum. L. Rev.* 114 (2010) (Empirically finding that NPE patents rank higher than other litigated patents that share the same technological class in every value measure employed, and that the success rate of NPEs in patent infringement litigation is quite similar to that of other litigants); Jonathan H. Ashtor, Michael J. Mazzeo, and Samantha Zyontz, “Patents At Issue: The Data Behind The Patent Troll Debate,” 21 *Geo. Mason L. Rev.* 957 (2014) (empirically finding that compared to those of practicing entities, litigated PAE patents had higher quality metrics – higher number of claims and higher forward citations; found no statistically significant difference in litigation success rate of PAEs and non PAEs); Michael Risch, “A Generation of Patent Litigation: Outcomes and Patent Quality,” *San Diego Law Review*, Forthcoming (2015). Available at <http://ssrn.com/abstract=2484947>

<sup>100</sup> Michael J. Mazzeo, Jonathan H. Ashtor, and Samantha Zyontz. “Do NPEs Matter? Non-Practicing Entities and Patent Litigation Outcomes,” 9 *Journal of Competition Law and Economics*, 879 (2013) (finding that PAEs are not obtaining “excessive” awards nor exploiting patents illegitimately, unless all patent suits are unjustified).

<sup>101</sup> PAE Report at 2 (“patent assertion entities (PAEs) (also known as ‘patent trolls’)”); *Id.* at 3 (“PAEs, or ‘patent trolls.’”); Sperling Article at 1 (“patent trolls (known more formally as Patent Assertion Entities, or PAEs)”)

<sup>102</sup> Brian J. Love, An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators? 161 *Univ. Penn. Law Review* 1309, 1310 (2013). Available at SSRN: <http://ssrn.com/abstract=1917709>.

The Reports fail to meet the IQA reproducibility requirements because the Reports' identification of certain patent holders as "PAEs" or "patent trolls" is not "capable of being substantially reproduced, subject to an acceptable degree of imprecision."<sup>103</sup> The Reports also fail to meet the IQA's utility requirement because undefined and indeterminate descriptive terms such as "PAE" and "patent troll" cannot be useful "information to its intended users, including the public."<sup>104</sup>

**RFC2.** For the foregoing reasons, I request that the Reports be corrected by, either (1) defining the terms "PAE" and "patent troll" in an objective manner that third parties are capable of reproducing or (2) removing from the Reports these terms and all text drawing inferences about them.

### 5.2.2 *The alleged litigation cost asymmetry*

The PAE Report alleges that PAEs take advantage of the patent litigation cost asymmetries to force settlements by stating that

settlements are affected more by the parties' relative opportunity costs of going to trial and attitudes towards risk—factors that favor PAEs, whose legal fees are low (since they do not have to provide much evidence to assert that there has been patent infringement), and who do not have to pay the fixed costs of a manufacturing operation. Therefore, PAEs have an incentive to drag out litigation, to increase pressure on defendants to settle the case (Tucker 2012).<sup>105</sup> ("Comparative Cost Statement.")

The Report contains no evidence supporting the assertion that PAEs' "legal fees are low." This assertion also appears to be counterfactual. First, legal costs for plaintiffs and defendants at the pleading stages are similar. An answer to an infringement complaint is typically a simple terse denial, and is often less costly to prepare than a complaint. Second, discovery costs are comparable for both sides: plaintiff and defendant haggle over the scope of discovery, and defendants may impose costly discovery burdens on plaintiffs (as described in the example given in Section 5.5.2). Third, plaintiffs expend substantial resources researching defendants' products and documentation. Indeed, the American Intellectual Property Law Association ("AIPLA") estimates the *same* costs for defendants and plaintiffs.<sup>106</sup> Had there been substantial systemic cost advantages to plaintiffs, the AIPLA's survey likely would have noted and reported these differences. Rather, according to AIPLA the cost of *defending against claims of NPEs* are on average about 1/3 *lower* for defendants than plaintiffs.<sup>107</sup>

---

<sup>103</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>104</sup> OMB Guidelines § V(2); *See also* OSTP Guidelines § V(5).

<sup>105</sup> PAE Report, at 6.

<sup>106</sup> American Intellectual Property Law Association, *Report of the Economic Survey 2013*. Arlington VA: At I-129-132, costs for "all varieties."

<sup>107</sup> *Id.*, at I-129-132, I-145-148. For example, in cases with \$1-25 million at stake, mean cost for defending against an NPE to end of discovery and to case termination was \$1.27 M and \$2.03 respectively, compared to plaintiffs' costs in this stake range category of \$1.68M and \$2.83M respectively. Although the AIPLA economic survey may not meet the IQA Survey Standards and thus cannot be relied upon for purposes of providing cost estimates in the PAE Report, it provides a quantitative insight indicating that the unsupported PAE Report's assertions are probably wrong and

The statement that “PAEs have an incentive to drag out litigation, to increase pressure on defendants to settle the case” is similarly unsupported. The allegation relies on a citation to “Tucker 2012,” a reference that is nowhere to be found in the PAE Report’s bibliographic reference list. Petitioner is not aware of any 2012 relevant paper by Tucker that addresses PAEs incentives to drag out litigation.

Therefore, the PAE Report’s dissemination of the Comparative Cost Statement fails to comply with the IQA reproducibility requirement because the statement is unsupported and the information is not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>108</sup>

**RFC3.** For the foregoing reasons, I request that the PAE Report be corrected by removing the Comparative Cost Statement and all text drawing inferences therefrom.

### *5.2.3 “Private costs of lost opportunities to commercialize technology”*

Under the above-quoted heading, the PAE Report disseminates a scientific assessment that lawsuits by PAEs cause lost wealth of over \$300 billion in four years.<sup>109</sup> For this estimate, the PAE Report relies exclusively on a 2011 paper by Bessen, Meurer, and Ford (“Bessen et al.”).<sup>110</sup> The Bessen et al. paper finds an abnormal stock value loss of 0.3% upon NPE suit filings, averaged over an ensemble of alleged infringers’ stock events.<sup>111</sup> From this it concludes that loss to defendants involved in NPE patent suits during a four-year period “exceeds \$83 billion per year, over a quarter of U.S. industrial R&D spending per annum;”<sup>112</sup> it asserts that NPE patent litigation constitutes a drag and a “very large disincentive to innovation.”<sup>113</sup> The Sperling Article lumps all such patent assertions by PAEs as abusive and concludes that “the abuse of the patent system is stifling innovation and putting a drag on our economy.”<sup>114</sup> The Reports provide no evidence nor cite to any other source to support these assertions—the Bessen et al. paper is the sole source for these assessments. The PAE Report “expressly relies upon”<sup>115</sup> the information in the Bessen et al. paper, using it “in a manner that reasonably suggests that the agency agrees with the information.”<sup>116</sup> As explained in Section 3.3, this means that the information from the Bessen et al. paper as disseminated in the Reports is itself subject to the IQA standards.

The Reports rely on the Bessen et al. paper to disseminate information that is not only “influential information,” but comprises “highly influential scientific assessments” (see

---

cannot be accepted.

<sup>108</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>109</sup> PAE Report, at 9.

<sup>110</sup> James Bessen, Jennifer Ford, and Michael J. Meurer, “The Private and Social Costs of Patent Trolls,” *Boston University School of Law Working Paper* 11-45, (September 19, 2011) (hereinafter “Cost of Patent Trolls”), at <http://www.bu.edu/law/faculty/scholarship/workingpapers/Bessen-Ford-Meurer-troll.html>.

<sup>111</sup> *Id.*, at 32.

<sup>112</sup> *Id.*, at 17.

<sup>113</sup> *Id.*, at 21.

<sup>114</sup> Sperling Article, at 2.

<sup>115</sup> OSTP Guidelines §V(2)(b).

<sup>116</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

Section 3.2). As explained in Section 3, this means that the information from the Bessen et al. paper itself should have been subjected to peer review in accordance with the Peer Review Bulletin prior to dissemination as government-endorsed very influential information.<sup>117</sup> The Bessen et al. paper was not published in a refereed journal, however, nor was it subjected to the peer review process prescribed in the Peer Review Bulletin §§ II, III and by the OSTP Guidelines §II(9). For this reason alone, the dissemination of the underlying information from the Bessen et al. paper renders the PAE Report non-compliant with the IQA. Other reasons are given below.

Information from the Bessen et al. paper also fails to meet the objectivity requirements of the IQA as it contains several fundamental flaws in empirical assessment of patent litigation costs using stock value changes. Petitioner analyzed in detail these errors in a recent paper entitled “*Questionable Science Will Misguide Patent Policy – The \$83 billion per year fallacy*,”<sup>118</sup> which is incorporated herein in its entirety by this reference. To summarize, by only accounting for stock price declines of alleged infringers *upon commencement* of patent litigation, and ignoring any stock price corrections *upon resolution* of the litigation, Bessen et al. produce implausibly high and upwardly-biased estimates for patent litigation costs to shareholders. Bessen et al.’s method misrepresents the true effect of patent litigation on shareholder wealth by selectively measuring only incomplete legal transactions—only one component of the change in shareholder wealth associated with the litigation event.

However, as Petitioner demonstrates in the paper cited above, *positive changes* of up to several percent in shareholder wealth of defendant firms upon resolution of the lawsuit may be observed in such event studies and in specific examples of litigants covered by the Bessen et al. study.<sup>119</sup> Those positive stock value corrections upon disposition of the litigation cases they studied are totally ignored by Bessen et al. Consequently, the PAE Report relies on this glaring omission to erroneously infer that “the 90% of lost defendant share values that simply vanishes suggests considerable lost value to society from forgone technology transfer and commercialization of patented technology.”<sup>120</sup> For these reasons alone, the information disseminated from the Bessen et al. paper does not meet the objectivity requirements in OMB Guidelines § V(3)(a, b) and OSTP Guidelines § V(6).

The Bessen et al. paper’s data are opaque and not reproducible. The paper does not identify the stock indices used as market portfolio controls, nor does it indicate whether such controls were global, industry-specific, or sector-specific.<sup>121</sup> More importantly, Bessen et al.’s firm dataset and the identities of the litigants, including those defined as NPEs, are not disclosed and cannot be independently verified. Therefore, the Bessen et al. study fails to meet the IQA’s transparency and reproducibility

---

<sup>117</sup> 70 *Fed. Reg.* at 2667, 2675.

<sup>118</sup> Ron D. Katznelson, “Questionable Science Will Misguide Patent Policy – The \$83 billion per year fallacy,” (September, 2014). Hereinafter referred to as “Katznelson (2014)” and available at <http://ssrn.com/abstract=2502777>.

<sup>119</sup> Katznelson (2014), note 118 *supra*, at 8.

<sup>120</sup> PAE Report, at 9.

<sup>121</sup> Katznelson (2014), note 118 *supra*, at 9, n38, see accompanying text.

requirements because the results are not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>122</sup> Rather, Bessen et al. use a proprietary dataset from PatentFreedom,<sup>123</sup> an organization that has an interest in the outcome of the study.<sup>124</sup> Moreover, PatentFreedom admits that its database contains uncorrected duplications, which “underscore the need for caution in drawing conclusions from such summary data.”<sup>125</sup>

Information disseminated from the Bessen et al. paper fails to meet the IQA’s objectivity prong because it does not identify “the supporting data and models, so that the public can assess for itself whether there may be some reason to question the objectivity of the sources.”<sup>126</sup> Opacity of the data sources and the methods used for the control portfolio creates particular “reason to question the objectivity of the sources,” in part because support for the research was provided by the Coalition for Patent Fairness,<sup>127</sup> a group of companies that have an interest in the outcome of the study.<sup>128</sup>

The information Bessen et al. paper also lacks objectivity, both on presentation and substance, because it is not “presented in an accurate, clear, complete, and unbiased manner.”<sup>129</sup> First, contrary to Bessen et. al.’s counterfactual categorization, the firm’s market capitalization changes associated with patent litigation are not “costs” but economic transfers. Bessen et al. dismiss, and thus do not properly account for, transfers to the plaintiff patentees (tracking only public firms) and do not account for positive wealth redistribution to competitors of the defendant firms, or other third parties licensed under the asserted patents. “Costs” are net reductions in aggregate welfare. Failing to net them is an obvious error. By aggregating estimates only for such parties that have publically traded securities,<sup>130</sup> Bessen et al. had not tracked (and netted out) the value of transfers received by the *actual specific* beneficiaries related to their sample.

Second, Bessen et al. ignore the related potential market capitalization gains of third-

---

<sup>122</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>123</sup> Bessen et al. (2011), at 1, 9.

<sup>124</sup> See [www.patentfreedom.com/services/](http://www.patentfreedom.com/services/). PatentFreedom provides subscription and advisory risk management services to help firms counter NPE patent assertions and therefore it stands to gain more clients when an acute “NPE problem” is perceived in the market. See [www.patentfreedom.com/wp-content/uploads/2013/09/NPE-Ligitations-involving-Business-Method-Patents\\_Sept-4-2013.pdf#page=17](http://www.patentfreedom.com/wp-content/uploads/2013/09/NPE-Ligitations-involving-Business-Method-Patents_Sept-4-2013.pdf#page=17) (“PatentFreedom offers information and services to help companies and their outside counsel reduce the costs and risks associated with NPEs”).

<sup>125</sup> PatentFreedom, Notes on Methodology, (February 9, 2013) (“litigation data on this website contains administrative duplicates such as venue transfers, related cases between parties, etc. ... they do underscore the need for caution in drawing conclusions from such summary data.”) at <https://web.archive.org/web/20130209171833/https://www.patentfreedom.com/methodology/>

<sup>126</sup> OMB Guidelines § V(3); *See also* OSTP Guidelines § V(6)

<sup>127</sup> Bessen et al. (2011), at 1.

<sup>128</sup> The CPF alleges abusive patent litigation and lobbies for legislation that would limit patentees’ ability to enforce their patents. See a call for action against PAEs: “Stop Patent Trolls Now.” At [www.patentfairness.org/action](http://www.patentfairness.org/action).

<sup>129</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

<sup>130</sup> Bessen et al. (2011), at 18, (admitting that inspecting stock data for publically-traded NPEs covered only 14% of their litigation dataset.)

party patentees having patents in the same technology class as those litigated in the dataset sample, with no matching pecuniary losses elsewhere. When patents in a given technology area are litigated, it often raises the valuation of other patents in the particular technology class due to heightened strategic interest in the pertinent technology market.<sup>131</sup> Thus, the results of the Bessen et al. paper are further biased by not accounting for these potential shareholder gains.

Third, Bessen et al. ignore substantial dynamic efficiency gains. Important positive indirect benefits of patent enforcement, including by NPEs, are often realized when competitors are encouraged to design-around the asserted patent. Incentives to design around patents usually materialize only upon patent enforcement lawsuits, but when design-arounds are commercially successful, they often result in substantial increases in social welfare: design-around patents have been documented to spur new manufacturers' entry to the market, unleash fierce price competition, robust price reductions, and reduce deadweight losses of the patentee's monopoly pricing.<sup>132</sup> From a dynamic efficiency perspective, the greatest social welfare enhancement due to the designs-around appears downstream years later even in areas other than the patented technology.<sup>133</sup> None of these dynamic efficiency gains are included or even mentioned in the Bessen et al. study.

The PAE Report's reliance on the information in the Bessen et al. article as an estimate of the "private costs of lost opportunities to commercialize technology" further fails to meet the objectivity prong of the IQA because it ignores the social costs of patent infringement; it fails to include the countervailing *gains* of patent enforcement actions by NPEs (including protecting their licensees) that generally deter misappropriation by non-licensees, unauthorized counterfeiters, or those that would otherwise impose "private costs of lost opportunities" due to patent infringement. Such exercises of patent enforcement rights do help protect patent licensing revenues and sustain value added in patent-intensive industries estimated at \$763 billion per year.<sup>134</sup>

Finally, "objectivity" requires that "the information is presented within *a proper context*"...wherein "other information must also be disseminated in order to ensure an

---

<sup>131</sup> Peter Cohan, "InterDigital Could Be a Supercharged Stock," *InvestorPlace* (Aug 4, 2011) at <http://investorplace.com/2011/08/interdigital-idcc-telecom-stock>. (Discussing the dramatic rise of InterDigital stock as a result of the heightened strategic interest due to the patent litigation between Apple and Samsung.)

<sup>132</sup> Ron D. Katznelson and John Howells, "Inventing-around Edison's incandescent lamp patent: evidence of patents' role in stimulating downstream development," *The Fifth Annual Searle Center Conference on Innovation and Entrepreneurship*, Northwestern University, Chicago (June 2012), available at <http://ssrn.com/abstract=2464308>. (Reviewing and documenting the downstream social welfare benefits of design-around patents).

<sup>133</sup> *Id.* at Section 4.1 and subsections therein including Appendix B.

<sup>134</sup> Economics and Statistics Administration and U.S. Patent and Trademark Office, "Intellectual Property and the U.S. Economy: Industries in Focus," Washington, D.C.: Economic and Statistics Administration, U.S. Department of Commerce (2012), at 45, ("Patent-intensive ... industries accounted for 5.3 ... percent of GDP, with \$763 billion ... in value added" in 2010.") [http://www.uspto.gov/news/publications/IP\\_Report\\_March\\_2012.pdf](http://www.uspto.gov/news/publications/IP_Report_March_2012.pdf).



accurate, clear, complete, and unbiased presentation.”<sup>135</sup> The PAE Report fails to meet this IQA context objectivity requirement because it uses the information in the Bessen et al. article to assert numerical “private costs” of patent litigation while providing no baseline for comparison. It ignores the *context* in which these putative costs are incurred—part of actions to protect IP rights having a total estimated asset value of \$9 trillion.<sup>136</sup> The failure of the PAE Report as a whole as an objective report and Petitioner’s further related requests for remedial action are presented in Section 5.5.

**RFC4.** For the foregoing reasons, I request that the PAE Report be corrected by removing the information imported from the Bessen et al. article and by removing all text drawing the economic inferences therefrom.

**RFC5.** For the same reasons, I request that the following related unsupported text be removed from the Sperling Article:

- (a) “costing the economy billions of dollars and undermining American innovation.”
- (b) “not to mention tens of billions dollars more in lost shareholder value.”
- (c) “It’s clear that the abuse of the patent system is stifling innovation and putting a drag on our economy. The trolling has gotten out of control, and it’s time to act.”

#### 5.2.4 “Social costs of reduced innovation”

Under the above-quoted heading, the PAE Report disseminates a scientific assessment that “the losses caused by excessive litigation exceed even the large stock market losses described above, including lost value to consumers who are not able to buy innovative products, and reduced income for workers whose pay is lower because they are unable to work with more productive new processes”<sup>137</sup> (the “Economic Harms Statement”). The PAE Report’s Conclusion section also makes the following statement: “The practices of [PAEs], which has [sic] come to file 60% of all patent lawsuits in the US, act to significantly retard innovation in the United States and result in economic ‘dead weight loss’ in the form of reduced innovation, income, and jobs for the American economy”<sup>138</sup> (“Dead Weight Statement”).

The PAE Report neither provides a benchmark for optimal patent enforcement nor defines how appropriate litigation is distinguished from “excessive” litigation. The PAE Report cites no studies nor provides any evidence showing “lost value to consumers who are not able to buy innovative products;” it establishes no evidentiary record to show “reduced income for workers whose pay is lower because they are unable to work with more productive new processes;” and it furnishes no evidence of “economic dead weight loss.” These baseless assertions imply an implausible proposition—that

---

<sup>135</sup> OMB Guidelines § V(3); OSTP Guidelines § V(4)(a). (Emphasis added).

<sup>136</sup> Kevin A. Hassett and Robert J. Shapiro, “[What ideas are worth: The value of intellectual capital and intangible assets in the American economy.](#)” Sonecon, (October 2011). (The value of intellectual capital in the U.S. economy in 2011 was estimated to be between \$8.1 trillion to \$9.2 trillion).

<sup>137</sup> PAE Report, at 10.

<sup>138</sup> PAE Report, at 12.

patent enforcement under the patent law is *per se* harmful to our economy. Even the Bessen et al. paper makes none of these assertions.

With respect to these Economic Harms and Dead Weight Statements, the PAE Report fails to comply with the IQA reproducibility requirement because the information is not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>139</sup> It also fails to meet the IQA’s objectivity prong because it does not identify “the supporting data and models, so that the public can assess for itself whether there may be some reason to question the objectivity of the sources.”<sup>140</sup> And it fails the IQA’s objectivity requirement, both on presentation and substance, because it makes statements that are unsupported by facts and are not “presented in an accurate, clear, complete, and unbiased manner.”<sup>141</sup> The PAE Report is also inaccurate, incomplete and biased because it omits the social benefits of legal patent enforcement, both in deterring infringement and incentivizing investment in patented technologies.

The PAE Report also fails to meet the IQA’s utility requirement because its unsupported, erroneous and biased Economic Harms and Dead Weight Statements constitute useless “information to its intended users, including the public.”<sup>142</sup>

**RFC6.** For the foregoing reasons, I request that the PAE Report be corrected by removing therefrom the Economic Harms Statement and the Dead Weight Statement referred to above.

#### *5.2.5 “Direct costs to firms that practice patents.”*

Under the above-quoted heading, the PAE Report disseminates a scientific assessment that

defendants and licensees paid PAEs \$29 billion in 2011, a 400% increase from 2005 and that less than 25% of this money flowed back to innovation. In addition, in the majority of PAE cases, the legal cost of the defense exceeds this settlement or judgment amount (Chien 2012c).<sup>143</sup>

The PAE Report “expressly relies upon”<sup>144</sup> this information, using it “in a manner that reasonably suggests that the agency agrees with the information.”<sup>145</sup> As explained in Section 3.3, this means that the information disseminated from the Bessen & Meurer and the “Chien 2012c” sources is itself subject to the IQA standards when disseminated by a government agency in a manner that is reasonably inferred as conveying agreement.

The source for the latter assertion, “Chien 2012c,” is nowhere to be found in the PAE

---

<sup>139</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>140</sup> OMB Guidelines § V(3); *See also* OSTP Guidelines § V(6)

<sup>141</sup> *Id.*

<sup>142</sup> OMB Guidelines § V(2); *See also* OSTP Guidelines § V(5).

<sup>143</sup> PAE Report, at 9.

<sup>144</sup> OSTP Guidelines §V(2)(b).

<sup>145</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

Report's reference list<sup>146</sup> and therefore the PAE Report fails to comply with the IQA reproducibility requirement because the information is not "capable of being substantially reproduced, subject to an acceptable degree of imprecision."<sup>147</sup> The exclusive source for the former assertion is a 2012 paper by Bessen and Meurer, entitled "*The Direct Costs from NPE Disputes*" ("Bessen & Meurer").<sup>148</sup> These authors' study purports to assess the direct costs of patent assertions by NPEs and it relies on proprietary data from surveying expenses incurred by defendants as conducted and compiled by the RPX Corporation.<sup>149</sup>

As explained in Section 3, the Reports' reliance on the Bessen & Meurer paper to disseminate "influential scientific information" means that the information from the Bessen et al. paper itself should have been subjected to peer review in accordance with the Peer Review Bulletin prior to dissemination in a manner that reasonably conveys agency concurrence.<sup>150</sup> The Bessen & Meurer paper was not published in a refereed journal, nor was it subjected to the peer review process prescribed in the Peer Review Bulletin §§ II, III and by the OSTP Guidelines §II(9). For this reason alone, the dissemination of the underlying information renders the PAE Report non-compliant with the IQA. Other reasons are given below.

The Bessen & Meurer paper's data is opaque and irreproducible. The RPX survey respondents (defendants) and the identity of litigants defined as NPEs are confidential and the veracity of this information cannot be independently verified. No information is made available on the design of the survey or the methods used to obtain the data. The confidential survey data was even unavailable to the authors themselves and they could not ascertain its specific content.<sup>151</sup> Therefore, information from their study fails to meet the IQA reproducibility requirements because the results are not "capable of being substantially reproduced, subject to an acceptable degree of imprecision."<sup>152</sup>

The information from the Bessen & Meurer paper fails to meet the IQA's objectivity prong because it does not identify "the supporting data and models, so that the public can assess for itself whether there may be some reason to question the objectivity of the sources."<sup>153</sup> Opacity of the data sources and methods in this paper creates particular "reason to question the objectivity of the sources." This is because their survey was conducted and compiled by the RPX Corporation, a company that has an interest in the

---

<sup>146</sup> The PAE Report's reference list includes 3 references to Professor Chien's articles from 2012, two of which are identical. None are designated by suffix letters and there is no third item to match the "c" suffix designator.

<sup>147</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>148</sup> James Bessen and Michael J. Meurer, "The Direct Costs from NPE Disputes." *Boston University School of Law, Law and Economics Research Paper No. 12-34*, (June 28, 2012). Available at [http://www.bu.edu/law/faculty/scholarship/workingpapers/documents/BessenJ\\_MeurerM062512rev062812.pdf](http://www.bu.edu/law/faculty/scholarship/workingpapers/documents/BessenJ_MeurerM062512rev062812.pdf).

<sup>149</sup> Bessen & Meurer (2012), at 4.

<sup>150</sup> 70 *Fed. Reg.* at 2667, 2675.

<sup>151</sup> Bessen & Meurer (2012), at 10, n.8 ("To preserve data confidentiality, statistical analysis was performed by RPX personnel working under our direction.")

<sup>152</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>153</sup> OMB Guidelines § V(3); *See also* OSTP Guidelines § V(6)

outcome of the study<sup>154</sup> and because support for the research was provided by the Coalition for Patent Fairness,<sup>155</sup> a group of companies that have a similar interest in the outcome of the study.<sup>156</sup>

The information disseminated from the RPX survey is subject to the Survey Standards because its “statistical purposes include the description, estimation, or analysis of the characteristics of groups, segments, activities ... in economic ... sphere of interest”<sup>157</sup> and the government relied on it as if the survey had been its own. As explained in Section 3.3, it being a third-party survey is immaterial as long as the PAE Report disseminates, “endorses,” or “expressly relies upon” the information, which it clearly does. An agency cannot escape the Survey Standards by relying on third parties to conduct research at a standard lower than what the agency is required to meet.

Bessen & Meurer’s information from the RPX survey upon which the PAE Report relies fails to meet the Survey Standards in several respects. First, because Bessen & Meurer impute cost attributes derived from the RPX survey to the entire population of NPE defendants, the actual survey sample of defendants is of critical importance for its statistical validity. Survey Standard 1.3 requires that survey designs must ensure “that survey results are representative of the target population so that they can be used with confidence to inform decisions.”<sup>158</sup> However, the RPX survey is not based on solicitations from a random sample of the target population (all NPE defendants)—it is rather drawn from “a pool of invitees including RPX clients and nonclient companies with whom RPX has relationships”<sup>159</sup>—clearly producing a selection bias. Hence, the Bessen & Meurer paper also fails to meet Survey Standard 1.2 because it cannot and does not make the *showing* that entities not in the RPX survey sample “are impartially excluded on objective grounds.”<sup>160</sup> Underlying this failure is non-compliance with Survey Standard 2.1 requiring that frames for the sample survey be “appropriate for the study design and [ ] evaluated against the target population for quality.”<sup>161</sup>

Second, the low survey response rate implies uncontrolled nonresponse bias. Bessen & Meurer state that “of the 250 companies invited to participate, 82 provided data on lawsuits and of these, 46 also provided data on non-litigation patent assertions and related costs.”<sup>162</sup> This corresponds to a unit response rate of only 33% and an unknown (but lower) item response rate.<sup>163</sup> The Survey Standards require that nonresponse bias

---

<sup>154</sup> See [www.rpxcorp.com/about-rpx/](http://www.rpxcorp.com/about-rpx/). RPX’s business model relies on acquiring clients who are potentially exposed to patent assertions: “By acquiring problem patents, RPX helps to mitigate and manage the risk of potential patent assertions for its growing client network.” RPX can benefit from a study that exaggerates the scope of NPE patent assertion threats.

<sup>155</sup> Bessen & Meurer (2012), at 1, 4.

<sup>156</sup> See note 128 *supra*.

<sup>157</sup> Survey Standards, at 1.

<sup>158</sup> *Id.*, at 8.

<sup>159</sup> Bessen & Meurer (2012), at 7.

<sup>160</sup> Survey Standards, at 7. See Guideline 1.2.3.

<sup>161</sup> *Id.*, at 9.

<sup>162</sup> Bessen & Meurer (2012), at 8.

<sup>163</sup> Survey Standards, at 16. The survey could have had a response rate as low as 18% given the definitions in Guidelines 3.2.6 and 3.2.7, wherein the number of respondents with a valid skip for the

analysis be provided whenever survey unit response rate is below 80 percent or if the item response rate is below 70 percent for any items used in a report.<sup>164</sup> Bessen & Meurer's response rates are much lower and the authors do not disclose a nonresponse bias analysis.

Likely selection effects in this RPX survey are therefore multiplied: (a) firms presumably select the RPX service if the subscription fee is less than their expected litigation savings; hence, the sample (RPX clients or firms that have some relationship with RPX) has higher-than-average litigation costs, and (b) among this 250-firm sample, the firms that are most likely to respond are the firms with the highest litigation cost—i.e., firms that are likely to care more about contributing to the survey knowing its intended purpose. These selection effects are a likely source of significant bias. Professors Schwartz and Kesan have written a detailed account of the potential bias factors in the Bessen & Meurer study in an article first published in 2012 with a revision published this year,<sup>165</sup> which is incorporated herein in its entirety by this reference. They address failures in transparency, objectivity and utility due to the biased sample, the lack of a baseline to compare the purported “costs,” and the lack of accounting for small business patentees.

The Bessen & Meurer paper also lacks objectivity because the information therein is not “presented in an accurate, clear, complete, and unbiased manner.”<sup>166</sup> The vast majority of the purported \$29 billion figure consists of settlement, licensing, and judgment awards,<sup>167</sup> which are transfers rather than “costs.” Such transfers to patent holders are the patent system's statutorily contemplated compensatory remunerations for infringement. The PAE Report's acceptance of pecuniary losses to defendants resulting from PAE litigation, irrespective of whether what was lost might have been gained by infringement implicitly legitimizes the theft of IP. The Bessen & Meurer paper omits the economic dynamic efficiencies that remunerations of patent holders on account of infringement create for the increased incentives to invest in patented technologies and reinvestment in related patent acquisitions. This omission introduces clear bias.

**RFC7.** For the foregoing reasons, I request that the PAE Report be corrected by removing the information from the Bessen & Meurer paper and that attributable to the unknown “Chien 2012c” source and by removing all text drawing the inferences therefrom.

**RFC8.** For the same reasons, I request that the following related unsupported text be removed from the Sperling Article:

(a) — costing the economy billions of dollars and undermining American innovation.”

---

item is unknown due to lack of sufficient disclosure by Bessen & Meurer.

<sup>164</sup> Survey Standards, see Survey Response Rates Standard 1.3, Guidelines 1.3.4 and 1.3.5. at 8; Guideline 3.2.9 at 16, and Guideline 3.2.10 at 17.

<sup>165</sup> David L. Schwartz and Jay P. Kesan, “Analyzing the Role of Non-Practicing Entities in the Patent System,” 99 *Cornell Law Review*, 425-456 (2014). At <http://ssrn.com/abstract=2117421>.

<sup>166</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

<sup>167</sup> Bessen & Meurer (2012), at 29-30.

- (b) “All told, the victims of patent trolls paid \$29 billion in 2011, a 400% increase from 2005.”
- (c) “It’s clear that the abuse of the patent system is stifling innovation and putting a drag on our economy. The trolling has gotten out of control, and it’s time to act.”

### **5.3 The PAE Report disseminates erroneous and biased information regarding patent litigation activity**

#### *5.3.1 Historical trends in patent litigation*

As an initial matter, the PAE Report states without any factual support that “[t]he increased prevalence of PAE suits, and patent suits in general, in recent years stands *in contrast to the 20th century, when suits for patent infringement were relatively rare.*”<sup>168</sup> There is substantial evidence that those responsible for the PAE Report knew that this statement is inaccurate.

Indeed, the response to Petitioner’s 2nd FOIA request reveals an illuminating email exchange prior to the release of the PAE Report between Professor Chien and Dr. R. David Edelman, a Senior Advisor at OSTP who produced the final version of the PAE Report. Dr. Edelman asked for supporting evidence of patent litigation statistics in years starting at 1980,<sup>169</sup> presumably to establish the PAE Report’s assertion that “suits for patent infringement were relatively rare” in the 20th Century. However, Professor Chien stated that she had no such data and only referred to NPE litigation statistics from the PatentFreedom’s web site (which has no data before 2001).<sup>170</sup> Dr. Edelman appears not to have pursued this obvious discrepancy further,<sup>171</sup> and this erroneous statement was neither corrected nor removed from the PAE Report.

For the historical litigation comparison of the PAE Report to be objective, the term “rare” must be taken as a rate or frequency, and “relatively rare” must mean disproportionately uncommon compared to the scale of the market. When *objectively* comparing *relative* patent litigation *rate* across decades, one must take it in proportion to the actual growing scale of technology use, market size and commercial activity that give rise to patent disputes. Indeed, information that ignores this important technological activity growth does not meet the objectivity requirement of the IQA.

A recent study of nearly a century of patent litigation<sup>172</sup> shows that with the exception of the AIA surge anomaly explained below, (a) patent lawsuits constituted about 1% of all civil lawsuits in this century, about 2.5 to 3 times *lower* rate than those during the 1920s-1930s period; (b) after the 1960s, patent lawsuit filing rates were *overtaken* by filing rates of trademark and copyright suits; (c) contrary to the PAE Report’s

---

<sup>168</sup> PAE Report, at 5, (emphasis added).

<sup>169</sup> See Exhibit H hereto, containing an email exchange on June 2, 2013. Response to FOIA Request No. 14-06.

<sup>170</sup> *Id.* PatentFreedom web site page from the URL provided by Professor Chien’s email was captured by the “Way Back Machine” and is included at the end of Exhibit H.

<sup>171</sup> *Id.* See Dr. Edelman’s reply “Awesome thanks!”

<sup>172</sup> Ron D. Katznelson, “A Century of Patent Litigation in Perspective,” (November 12, 2014). Available at SSRN: <http://ssrn.com/abstract=2503140>.

statement, patent lawsuit rate has been in *decline* since the turn of the century when taken as a fraction of the number of patents in force; and (d) non-parametric statistical tests show that for all four commercial-activity-normalizing metrics, patent litigation intensities during this century had not exceeded those experienced during the 20th century.

Another recent study by Professor Zorina Khan<sup>173</sup> of the number of reported patent lawsuits over two centuries reveals that historically, as a fraction of issued patents, litigation rates in the first part of the 19th century exceeded that of the last two decades by about *a factor of five*.<sup>174</sup> She finds that high litigation rates in given technological fields were correlated with the advent of disruptive technologies<sup>175</sup> and observes that “vexatious and costly litigation about all areas of law—patents, property, contracts, and torts alike—were inevitably associated with the advent of important disruptive innovations.”<sup>176</sup> Importantly, Professor Khan documents the robust NPE activity and patent litigation, finding that it is not new and tracing such activity to the patent “wars” of the 19th and early 20th centuries.<sup>177</sup>

Text in the PAE Report on patent litigation fails to meet the IQA’s reproducibility requirement because it makes litigation rate comparisons between the 20th and the 21st centuries that are not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.” The PAE Report neither provides nor cites data covering any part of the 20th century, and it does not identify “supporting data and models, so that the public can assess for itself whether there may be some reason to question the objectivity of the sources.”<sup>178</sup>

Text in the PAE Report on patent litigation fails the IQA objectivity requirement that “the information is presented within a proper context” because it provided no economic scale as baseline information “in order to ensure an accurate, clear, complete, and unbiased presentation.”<sup>179</sup> It also fails the objectivity requirement, both on presentation and substance, because the patent litigation rate statements therein are inaccurate and incomplete and because it omits an obviously relevant discussion of how the AIA caused a surge in patent litigation in 2011-2012.

Finally, the PAE Report fails to meet the IQA’s utility prong because its unsupported, erroneous and biased assertion comparing patent litigation rates in the 20th and 21st centuries is at best useless “information to its intended users, including the public.”<sup>180</sup> Compliance with the IQA requires that “when transparency of information is relevant for assessing the information’s usefulness from the public’s perspective, the agency

---

<sup>173</sup> Zorina B. Khan, “Trolls and Other Patent Inventions: Economic History and The Patent Controversy in the Twenty-First Century,” 21 *Geo. Mason L. Rev.* 825 (2014).

<sup>174</sup> *Id.*, at 861, Figure 3.

<sup>175</sup> *Id.*, at 862-863, showing effects on litigation rates in telegraph, telephone and automobile industries.

<sup>176</sup> *Id.*, at 842.

<sup>177</sup> *Id.*, at 833-835, 839-842.

<sup>178</sup> OMB Guidelines § V(3); *See also* OSTP Guidelines § V(6)

<sup>179</sup> OMB Guidelines § V(3); OSTP Guidelines § V(4)(a).

<sup>180</sup> OMB Guidelines § V(2); *See also* OSTP Guidelines § V(5).

must take care to ensure that transparency has been addressed in its review of the information,”<sup>181</sup> a review that had never taken place.

**RFC9.** For the foregoing reasons, I request that the PAE Report be corrected by removing from it the following sentences: “The increased prevalence of PAE suits, and patent suits in general, in recent years stands in contrast to the 20th century, when suits for patent infringement were relatively rare. This increase is likely due to two factors.”

### *5.3.2 NPE’s relative role in patent litigation*

The Reports’ central theme is the “dramatic rise” in PAE litigation over recent years. Both Reports provide a graphical depiction such as the one in Figure 1 of the PAE Report, showing that in 2012 “PAEs brought over 2,500 lawsuits — 62% of all patent suits.”<sup>182</sup> For this influential scientific assessment, the PAE Report cites “Chien 2013,” a reference that is nowhere to be found in the PAE Report’s reference list. The PAE Report’s central assertion therefore lacks any factual support. For this reason alone, it fails to meet the IQA’s reproducibility requirement because it is not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>183</sup> Upon further investigation, it is revealed that this putative “Chien 2013” source is most likely a mere blog post of Professor Chien in Patently-O,<sup>184</sup> (the “Chien Blog Post”). But even with a correction to the bibliography list, the Chien Blog Post does not save the PAE Report from failing the IQA reproducibility requirement: here again, one finds reliance on the usual opaque sources and methods for NPE data—proprietary data and NPE coding by the RPX Corporation with research support from interested party PatentFreedom.<sup>185</sup>

The PAE Report “expressly relies upon”<sup>186</sup> this information from the Chien Blog Post, using it in prominently displayed figures and related captions “in a manner that reasonably suggests that the agency agrees with the information.”<sup>187</sup> As explained in Section 3.3, this means that the information disseminated from the Chien Blog Post is subject to the IQA standards when disseminated authoritatively by the government. In addition, as explained in Section 3, the Reports’ reliance on the Chien Blog Post to disseminate “influential scientific information” means that information contained in the Chien Blog Post should have been subjected to peer review in accordance with the Peer Review Bulletin prior to dissemination<sup>188</sup> “in a manner that reasonably suggests that the agency agrees with the information.” The information in the Chien Blog Post was not published in a refereed journal, and prior to government dissemination it was not subjected to the peer review process prescribed in the Peer Review Bulletin

---

<sup>181</sup> OMB Guidelines § V(2).

<sup>182</sup> PAE Report, at 5.

<sup>183</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>184</sup> Colleen V. Chien, “Patent Trolls by the Numbers,” *Patently-O Blog* (March 14, 2013), available at [www.patentlyo.com/patent/2013/03/chien-patent-trolls.html](http://www.patentlyo.com/patent/2013/03/chien-patent-trolls.html).

<sup>185</sup> *Id.*, see copyright attributions to RPX data and the text at first endnote.

<sup>186</sup> OSTP Guidelines §V(2)(b).

<sup>187</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

<sup>188</sup> 70 *Fed. Reg.* at 2667, 2675.



§§ II, III and by the OSTP Guidelines §II(9). For this reason alone, the dissemination of this information renders the PAE Report non-compliant with the IQA.

The information from the Chien Blog Post relies on confidential data sources (RPX Corp. and PatentFreedom) and therefore does not meet the IQA objectivity requirement because it does not identify the “the supporting data and models, so that the public can assess for itself whether there may be some reason to question the objectivity of the sources.”<sup>189</sup> In an attempt to corroborate the data from the Chien Blog Post, the PAE Report cites to the paper by Feldman, Ewing, and Jeruss (2013),<sup>190</sup> (“Feldman et al.”). However, for the same reasons listed above with respect to the Chien Blog Post, the information in the Feldman et al. paper also fails the basic reproducibility, objectivity, and peer-review requirements of the IQA when disseminated by the government.<sup>191</sup>

Had the Chien Blog Post been subjected to qualified peer review, it would have been found to lack objectivity, both on presentation and substance. The information contained therein is not “presented in an accurate, clear, complete, and unbiased manner.”<sup>192</sup> Attributing to abusive litigation the dramatic rise in the PAE suits filed, from 731 in 2010 to over 2,500 in 2012, lacks objectivity because there is not even an acknowledgement that this surge may have been caused by AIA-related joinder limits. Without such an acknowledgement or a rigorous analysis ruling it out, the presentation is incomplete because it provides no objective explanation for the sudden inexplicable purported propensity of PAEs to sue. The AIA joinder provision is discussed in the Chien Blog Post in another context, and as shown below, prior to the release of the PAE Report, Professor Chien had been aware of a PatentFreedom source wherein the lawsuit surge was attributed to the AIA joinder provision.

Indeed, as seen in the Chien-Edelman email exchange attached in Exhibit H, the PatentFreedom litigation statistics web page to which Professor Chien referred, contained a crucial candid assessment relevant to the thesis of the PAE Report: that “part of the steep increase [of the number of cases] in 2011-2012 results from changes in joinder provisions that have come into effect with the America Invents Act.”<sup>193</sup> Nevertheless, while aware of this explanation, neither Professor Chien nor

---

<sup>189</sup> OMB Guidelines § V(3); *See also* OSTP Guidelines § V(6)

<sup>190</sup> PAE Report, at 5, citing Robin Feldman, Thomas Ewing, and Sara Jeruss, “The AIA 500 Expanded: The Effects of Patent Monetization Entities (April 9, 2013). Available at SSRN <http://ssrn.com/abstract=2247195>.

<sup>191</sup> *See* Feldman et al. (2013), at 25, identifying a proprietary dataset of Lex Machina and a patentee NPE classification coding process for which data is unavailable for independent review. Moreover, Lex Machina counts suits transferred between districts in both the origin and destination courts; as such, its data may “artificially inflate [case counts], perhaps by as much as 15-20%.” *See* Jason Rantanen and Joshua Huago, “District Courts and Patent Cases, Part I,” *Patently-O Blog*, at [www.patentlyo.com/patent/2014/04/district-courts-patent.html](http://www.patentlyo.com/patent/2014/04/district-courts-patent.html) (April 28, 2014). Feldman et al. do not even attempt to evaluate or account for the bias but at 44 admit: “a case originally filed in 2006 and transferred in 2011 could be mistakenly included as a new filing in 2011.” This article has not been peer-reviewed.

<sup>192</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

<sup>193</sup> Exhibit H, *see* highlighted text in the PatentFreedom web page.

Dr. Edelman saw fit to discuss or refute this key explanatory cause for the surge in patent lawsuits in 2011 and 2012—a cause that has very little to do with the PAE Report’s central theme of abusive litigation. It can reasonably be inferred that the PAE Report fails to even mention the effects of the AIA joinder provision on litigation because doing so would have undermined the White House’s counterfactual narrative that the rise in litigation was caused by “abusive” “patent trolls.”

That the surge in the number of patent suits after the enactment of the AIA is dominated by AIA-related provisions has been widely documented. Petitioner explained how three separate provisions in the AIA contribute to the lawsuit surge;<sup>194</sup> the GAO Report recognized that the surge in patent lawsuit filings was due to the AIA joinder provisions;<sup>195</sup> and in a detailed and *transparent* empirical study, Professors Cotropia, Kesan, and Schwartz have shown that there was “no major difference between both the number of unique patentees and the number of alleged infringers from 2010 to 2012. While the number of cases increased, the totals for the main players—patentees and defendants—stayed essentially constant.”<sup>196</sup> This observation is consistent with the lawsuit filing surge wrought by the AIA rather than by a surge of abusive litigation. Based on their empirical litigation data, Cotropia et al. also established that all of the changes in lawsuit filings between 2010 and 2012 were well below the magnitude set forth in the PAE Report.<sup>197</sup> Unlike the PAE Report or any of its cited sources, the Cotropia et al. study is transparent and reliable because it extensively describes its methods, clearly defines the NPE categories, and fully discloses the underlying raw data and the coding of NPEs.<sup>198</sup>

**RFC10.** For the foregoing reasons, I request that the PAE Report be corrected by removing Figure 1 and all other information attributable to the “Chien 2013” reference and the Feldman et al. reference, and by removing all text drawing the inferences therefrom.

**RFC11.** For the same reasons, I request that the counterpart figure titled “The Rise of Patent Trolls” and the following text be removed from the Sperling Article:

- (a) “The number of these suits has exploded in recent years.”
- (b) “In the last two years, the number of lawsuits brought by patent trolls has nearly tripled, and account for 62% of all patent lawsuits in America.”
- (c) “The trolling has gotten out of control, and it’s time to act.”

---

<sup>194</sup> Ron D. Katznelson, “The America Invents Act at Work – The Major Cause for the Recent Rise in Patent Litigation,” *IPWatchdog*, (April 15, 2013). At <http://bit.ly/AIA-Litigation>. (Explaining how changes in 35 U.S.C. §§ 299, 315(b), and 325(b) have changed lawsuit filing practices that caused the filing surge).

<sup>195</sup> GAO Report, at 15.

<sup>196</sup> Cotropia et al. (2014), note 11 *supra*, at 28.

<sup>197</sup> *Id.*, at 25.

<sup>198</sup> Cotropia et al. released their raw data at <http://npedata.com/>. They have also explained the importance of data transparency in: Christopher A. Cotropia, Jay P. Kesan, and David L. Schwartz, “The Value of Open Data for Patent Policy,” *Patently-O Blog* (February 20, 2014). Available at <http://patently.com/patent/2014/02/value-patent-policy.html>.

## 5.4 The PAE Report disseminates biased information on PAE “victims” by relying on fundamentally flawed surveys and selective data

### 5.4.1 “Impact on smaller startups is particularly acute”

With the above-quoted tag line as a preamble, the PAE Report states: “In a recent survey of 223 technology company startups, 40 percent of PAE-targeted companies reported a ‘significant’ operational impact (e.g. change in business, exit from the market, delay in milestone, change in product, etc.) due to the suit or threat thereof (Figure 2).”<sup>199</sup> The survey results prominently shown in Figure 2 of the PAE Report titled “Impacts of a PAE Demand on Technology Startups” are sourced to a 2012 paper by Professor Chien<sup>200</sup> (“Startups & Trolls”). The Sperling Article echoes this assertion: “Smaller companies are getting hit just as hard, and 40% of technology startups targeted by patent trolls reported a significant impact on their business operations due to the suit or threat thereof.”<sup>201</sup>

The Startups & Trolls survey that Professor Chien conducted has no statistical merit and cannot be relied upon by the government for any informational purpose. The representativeness of her sample frame is unknown, and there is no evidence that her sample is even representative of her sample frame. She reports “223 responses to a non-random survey of small tech companies and startups.”<sup>202</sup>

Furthermore, there is good reason to believe that Professor Chien’s sample frame was intentionally biased. Public solicitations (i.e., “trolling”) for her survey were made by entities that she admits are “critical of the patent system” and known to have an interest in the result of the survey. The Electronic Frontier Foundation posted a Facebook solicitation<sup>203</sup> and the Grocklaw blog, which is known for expressing the anti-patent opinions of the “open source” community, had a link to the web-based survey with the following explanation as to who should respond to the survey:

Also, you don't have to be a CEO or head of a startup or a lawyer to provide useful information. If the company you work for has received a demand letter, or been sued by a non-practicing entity or anybody with a patent, you can fill out the form. If you are an app developer, you qualify. If you are a software developer, you qualify, even if your company isn't a tech company. Even if you've never had a demand made on you or your company,

---

<sup>199</sup> PAE Report, at 10.

<sup>200</sup> Colleen V. Chien, “Startups and Patent Trolls” (September 28, 2012). Santa Clara Univ. Legal Studies Research Paper No. 09-12. Available at SSRN: <http://ssrn.com/abstract=2146251>. Hereinafter “Startups & Trolls.”

<sup>201</sup> Sperling Article, at 2.

<sup>202</sup> Startups & Tolls, at 8. The number and identity of the solicited target population were largely unknown. Professor Chien explains that she used “private, closed solicitations (trusted advisors such as VCs and associations that work with founders and entrepreneurs), and public solicitations (through widely-read blogs, [Grocklaw]). I asked companies who handle legal disputes for the company, which could include single application developers, general counsel, founders, or other employees, to fill out the survey” (A-1). Although survey instructions required one respondent per company (A-5), no mechanism or controls were applied to ensure the authenticity of respondents, that they actually represented “small tech companies and startups,” let alone that there were no duplications of responses. The survey had not asked or controlled for whether responders had their own patents.

<sup>203</sup> See EFF’s solicitation at <https://www.facebook.com/eff/posts/301620653268952>.

you can still fill out the form. .... Congress, I've just learned, is having hearings on patents this week, and as it happens Professor Chien is going to testify, so if you have information you'd like her to take with her, so to speak, this is your moment. The purpose of the survey, in other words, is to help frame policy recommendations, so it's important, if you care about patents, and I know a lot of you do. Just be sure to be accurate and precise.<sup>204</sup>

One commenter responded online to the Grocklaw blog solicitation thread, explaining the built-in bias as follows:

Won't the results be biased?

Authored by: [Anonymous on Wednesday, July 18 2012 @ 10:42 AM EDT](#)

If you let respondents self-select, won't you get responses mostly from angry, motivated people and get no responses from people who have not been adversely effected [sic]?

Seems like a very poor way to do a survey to me.

Indeed, Professor Chien self-indicts her approach by admitting that the purpose of the survey was to send a message to Congress, not to conduct bona fide research:

However, an important question concerns appropriate use of data from the survey. The survey was distributed non-randomly, through venture capitalists and media outlets focused on tech startups rather than to the general population. Like many media outlets, the ones that advertised the survey have been critical of the patent system. The solicitations made reference to the context of this study, and the chance for the input to be provided to the government pursuant to the AIA's Section 34 study.<sup>205</sup>

It is worth noting that this obviously relevant information is missing from the section of the PAE Report discussing the survey. There can be little doubt that had OSTP undertaken proper IQA review prior to dissemination, it would *not* have included any of the survey information from the Startups & Troll paper in the Reports. Yet, the PAE Report “expressly relies upon”<sup>206</sup> this Startups & Trolls paper, using its survey information in Figure 2 “in a manner that reasonably suggests that the agency agrees with the information.”<sup>207</sup>

The information disseminated by the government from the Startups & Troll survey is subject to the Survey Standards because its “statistical purposes include the description, estimation, or analysis of the characteristics of groups, segments, activities ... in economic ... sphere of interest.”<sup>208</sup> As explained in Section 3.3, approving dissemination by the government of third-party survey brings it within the domain of the IQA.

The Startups & Troll survey information upon which the PAE Report relies fails to meet the Survey Standards in several respects. First, because the Startups & Troll

---

<sup>204</sup>Startups & Tolls, at A-4. See “Can You Please Help With a Patent Demand Survey?” *Grocklaw Blog* (July 17 2012) at [www.grocklaw.net/article.php?story=2012071411103955](http://www.grocklaw.net/article.php?story=2012071411103955).

<sup>205</sup> Startups & Tolls, at 9.

<sup>206</sup> OSTP Guidelines §V(2)(b).

<sup>207</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

<sup>208</sup> Survey Standards, at 1.

paper imputes the impacts of purported PAE demands derived from the online survey to the entire population of “technology startups,” the representativeness of the survey frame and sample are critical importance for statistical validity. As a threshold matter, for a purported volume of “over 100,000 companies” threatened with “patent infringement last year alone,”<sup>209</sup> even a random sample of 79 companies that had received a patent demand<sup>210</sup> would have little statistical power to resolve response categories. Given that the sample frame is admittedly unrepresentative and the statistical properties of the sample are unknown, it is impossible for this survey to meet the objectivity requirement of the IQA—that data be generated “using sound statistical and research methods.”<sup>211</sup>

Survey Standard 1.3 requires that survey designs must ensure “that survey results are representative of the target population so that they can be used with confidence to inform decisions.”<sup>212</sup> Survey Standard 2.1 requires that frames for the sample survey be “appropriate for the study design and [ ] evaluated against the target population for quality.”<sup>213</sup> Here, these standards have not been met because the only thing known about the sample frame is its purposeful bias against NPEs. The government cannot approvingly disseminate results from this survey because Survey Standard 1.2 is unambiguously violated: entities not in the sample frame were excluded for the non-objective reason that their interests diverged from the White House’s narrative.<sup>214</sup>

Second, the Startups & Trolls survey fails to meet Survey Standard 3.2 that requires measurement, adjustment for, reporting, and analysis of unit and item nonresponse. This standard provides that response rates *must* be computed to measure the proportion of the eligible sample that is represented by the responding units.<sup>215</sup> By its design as a convenience sample, however, *no* response rate can be calculated in the Startup & Trolls survey. When response rate cannot be calculated, a survey cannot comply with Survey Standards 1.3, which requires that nonresponse bias analysis be provided whenever survey unit response rate is below 80 percent or if the item response rate is below 70 percent for any items used in a report.<sup>216</sup>

These survey design defects resulted in bias from self-selection. As the anonymous blog commenter observed, “you get responses mostly from angry, motivated people and get no responses from people who have not been adversely affected.”<sup>217</sup> Because the purpose of the survey was overtly political, incentives were created for any given entity to supply false information for strategic purposes, and even to do so repeatedly because duplicate responses from the same entity were not excluded. Thus, selection bias is

---

<sup>209</sup> PAE Report, at 1.

<sup>210</sup> Startups & Tolls, at 8.

<sup>211</sup> OMB Guidelines § V(3)(b); OSTP Guidelines V(6)(b).

<sup>212</sup> Survey Standards, at 8.

<sup>213</sup> *Id.*, at 9.

<sup>214</sup> *See* Survey Standards, at 7. *See* Guideline 1.2.3.

<sup>215</sup> Survey Standards, at 14.

<sup>216</sup> Survey Standards, *see* Survey Response Rates Standard 1.3, Guidelines 1.3.4 and 1.3.5. at 8; Guideline 3.2.9 at 16, and Guideline 3.2.10 at 17.

<sup>217</sup> Comment on Groklaw Blog, note 204 *supra*.

magnified multiple times: (a) information was solicited from those who are disproportionately critical of the patent system and (b) respondents that have been more negatively affected than the average technology startup were more likely to respond.

In sum, because the Startups & Trolls survey does not meet multiple provisions of the Survey Standards, it would not have complied with the IQA objectivity requirement if it had been conducted or sponsored by the government, and thus it would not have been approved by OMB. The IQA forbids agencies from approvingly disseminating information from substandard third-party surveys, which cannot be “presented in an accurate, clear, complete, and unbiased manner.”<sup>218</sup> Even if these defects could be overcome, the Startups & Trolls survey is not reproducible by qualified analysts because the sample frame and sample are both indeterminate. The information therefore fails to meet the IQA reproducibility requirements because the results are not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>219</sup>

Finally, the PAE Report fails to meet the IQA’s utility prong with respect to the information disseminated from the Startups & Trolls survey because this information is by design biased with respect to the purported effects of PAE litigation on technology startups. Such information is useless “to its intended users, including the public.”<sup>220</sup>

**RFC12.** For the foregoing reasons, I request that the PAE Report be corrected by removing the information of the Startups & Trolls paper including Figure 2 and by removing all text drawing the inferences therefrom.

**RFC13.** For the same reasons, I request that the following counterpart unsupported text be removed from the Sperling Article:

- (a) “Smaller companies are getting hit just as hard, and 40% of technology startups targeted by patent trolls reported a significant impact on their business operations due the suit or threat thereof.”
- (b) “It’s clear that the abuse of the patent system is stifling innovation and putting a drag on our economy. The trolling has gotten out of control, and it’s time to act.”

#### *5.4.2 The “negative impact” on companies with over \$100 million in annual revenue*

Under the above theme, the PAE Report states: “In another recent survey of 116 in-house counsels, primarily from firms with over \$100 million in annual revenue, nearly all firms reported that PAE demands had affected them financially or distracted them from their core business, with nearly 40 percent stating that PAE activity had led them to make changes to an underlying product (McBride 2013).”<sup>221</sup> The PAE Report adopts

---

<sup>218</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

<sup>219</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>220</sup> OMB Guidelines § V(2); *See also* OSTP Guidelines § V(5).

<sup>221</sup> PAE Report, at 10.

and “expressly relies upon”<sup>222</sup> this survey information, using it “in a manner that reasonably suggests that the agency agrees with the information.”<sup>223</sup> Its dissemination by the government is therefore subject to the IQA.

First, as to the substantive allegation that patent holders had led companies “to make changes to an underlying product,” this could well be a result of legitimate claims. Accused infringers may have believed the patent assertions had sufficient merits to warrant design-around investments for changing their products to avoid infringement. Such a result would be the intended in a well-functioning patent system.

Second, the “McBride 2013” reference to which the survey of 116 in-house counsels is attributed is nowhere to be found in the PAE Report’s reference list. Upon further investigation, however, it appears that the reference is to Sarah McBride, a Thomson Reuters correspondent who had reported in a news brief<sup>224</sup> a few numerical results of an unpublished survey. For this reason alone, the PAE Report fails to meet the IQA’s reproducibility requirement because this survey information is not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>225</sup>

This begs the question who *is* the researcher who conducted this in-house counsel survey that is the subject of McBride’s news brief, which Professor Chien cites approvingly in the PAE Report? It is Professor Chien herself, and the information consists of a single slide from a presentation delivered at her university on the same day of McBride’s report.<sup>226</sup> Obviously this survey meets none of the provisions in the Survey Standards nor does it meet the objectivity requirement of the IQA that data be generated “using sound statistical and research methods.”<sup>227</sup>

For these reasons and for the same reasons listed above with respect to information disseminated from the Startups & Troll survey, the information disseminated from the in-house counsel survey also fails the basic reproducibility, objectivity, and peer-review requirements of the IQA.

**RFC14.** For the foregoing reasons, I request that the PAE Report be corrected by removing the following text: “In another recent survey of 116 in-house counsels, primarily from firms with over \$100 million in annual revenue, nearly all firms reported that PAE demands had affected them financially or distracted them from their core business, with nearly 40 percent stating that PAE activity had led them to make changes to an underlying product (McBride 2013).”

---

<sup>222</sup> OSTP Guidelines §V(2)(b).

<sup>223</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

<sup>224</sup> Sarah McBride, “Patent claims cause companies to exit business lines: study,” *Reuters News* (May 3, 2013). Available at [www.reuters.com/article/2013/05/03/us-patents-technology-impact-idUSBRE9420UY20130503](http://www.reuters.com/article/2013/05/03/us-patents-technology-impact-idUSBRE9420UY20130503).

<sup>225</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>226</sup> Colleen V. Chien, “Santa Clara Best Practices in Patent Litigation Survey,” *2013 Advanced Complex Litigation Series*, Santa Clara University (May 3, 2013), at Slide 5. Available at [www.slideshare.net/slideshow/embed\\_code/20486191](http://www.slideshare.net/slideshow/embed_code/20486191).

<sup>227</sup> OMB Guidelines § V(3)(b); OSTP Guidelines V(6)(b).

### 5.4.3 *Flawed estimates of the number of PAE demand letters*

The Sperling Article attributes to the White House a scientific assessment and asserts that “last year *we* estimate that patent trolls sent out over 100,000 demand letters, threatening everyone from Fortune 500 companies to corner coffee shops and even regular consumers to pay a settlement or face a day in court. The number of these suits has exploded in recent years.”<sup>228</sup> The estimate is advanced in the PAE Report, citing to a source that purportedly derives this estimate: “Conservative estimates place the number of threats in the last year alone at a minimum of 60,000 and more likely at over 100,000 (Chien 2012).”<sup>229</sup> So the White House’s term “we” apparently means Professor Chien, the undisclosed author of the PAE Report.

But the PAE Report fails to indicate which of Professor Chien’s studies derives this estimate. The incomplete and ambiguous reference list of the PAE Report contains two 2012 articles by Professor Chien—not one. It appears, however, that the “Chien 2012” source for the PAE Report’s assertions on demand letters is Chien’s DOJ/FTC presentation,<sup>230</sup> (the “Chien Presentation”), and specifically Slide 27 thereof. Evidently, the Reports “expressly rel[y] upon”<sup>231</sup> the information from the Chien Presentation, using it “in a manner that reasonably suggests that the agency agrees with the information.”<sup>232</sup> This information is therefore subject to the IQA, but it fails to comply.

The title of Slide 27 of the Chien Presentation—“*We don’t know exactly what’s happening but it’s likely that....*”—essentially admits the infirmity of the estimate—we don’t know what’s happening when it comes to demand letters. The slide contains a *single data point known to be extreme*, drawn from the *Cisco et al v. Innovatio* case where 8,000 demand letters were purportedly sent in patent disputes involving 26 cases. The slide also contains one *speculation* by an unidentified “high end sell-side patent broker” source that the “ratio of demands to suits” is “25-50:1.” Yet, there is no mention, or derivation of the so-called “conservative estimates” of 60,000 or over 100,000 demands per year, nor is there any estimate of the NPE defendant base from which these “conservative estimates” were derived. For this reason alone, the PAE Report fails to meet the IQA’s reproducibility requirement: the purported number of demand letters per year is not provided in any document of record and is not “capable of being substantially reproduced, subject to an acceptable degree of imprecision.”<sup>233</sup>

Apparently, the estimates in the PAE Report are based on Professor Chien’s mental imputation of the total number of demands sent to the entire population of NPE defendants based on the sample of *one* NPE that sent 8,000 notice letters to coffee chains, hotels and other retailers using Wi-Fi equipment.<sup>234</sup> Extrapolation from a

---

<sup>228</sup> Sperling Article, at 1-2.

<sup>229</sup> PAE Report, at 6.

<sup>230</sup> Colleen V. Chien, “Patent Assertion Entities, Presentation to the DOJ/FTC hearing on PAEs.” (December 10, 2012) available at <http://ssrn.com/abstract=2187314>.

<sup>231</sup> OSTP Guidelines §V(2)(b).

<sup>232</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

<sup>233</sup> OMB Guidelines § V(10); *See also* OSTP Guidelines § V(8).

<sup>234</sup> PAE Report, at 6, note 3.



single data point is folly, extrapolating from a single data point that is a bona fide NPE extreme outlier is doubly so. In any event, this imputation is facially erroneous because only one in five NPE defendants are from the hotel, services, agriculture and retail industries.<sup>235</sup> The rest, about 80%, are from industries which do not receive mass-mailing and likely involve very few NPE demand letters per patent dispute. This creates a large bias, overestimating the actual total number of demands. Note also that Professor Chien's Presentation admits that she has no basis to impute these fantastic estimates, noting in Slide 28 that the required information about NPE demands is publically unavailable due to private confidentiality agreements. These fantastic estimates based on innuendo and speculation fail to meet the objectivity requirement of the IQA that data be generated "using sound statistical and research methods."<sup>236</sup>

Extrapolating one extreme NPE demand pattern to the entire population of NPE targets also fails the IQA objectivity requirement, both on presentation and substance, because it is not "presented in an accurate, clear, complete, and unbiased manner."<sup>237</sup> Most troubling is the fact that the public has been particularly misled by this flawed information disseminated in the Reports, as these "White House Estimates" have been repeated in several articles invoking the imprimatur of the White House<sup>238</sup> and further in the House Subcommittee on Oversight and Investigations Hearings<sup>239</sup> and in the House Commerce, Manufacturing, and Trade Subcommittee Hearing on a bill to address fraudulent patent demand letters.<sup>240</sup> It is precisely to prevent the use of this type of estimate made out of thin air in setting public policy that the IQA was enacted.

---

<sup>235</sup> According to Feldman et al. note 190 supra, at 60, 64 (the average number of defendants in PAE, or "monetizer," suits in 2012 was about *one*: 4648 cases with 4606 defendants). PatentFreedom, a source on NPE data favored by Professor Chien, estimates that out of a cumulative total of 27,587 NPE defendants it tracked as of July 14, 2014, only 5,976 are from the hotel, services, agriculture and retail industries. See [www.patentfreedom.com/about-npes/industry/](http://www.patentfreedom.com/about-npes/industry/).

<sup>236</sup> OMB Guidelines § V(3)(b); OSTP Guidelines V(6)(b).

<sup>237</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

<sup>238</sup> Robin Feldman and W. Nicholson Price. "Patent Trolling—Why Bio and Pharmaceuticals are at Risk," note 17 at 7, (2014), at <http://ssrn.com/abstract=2395987> ("According to figures in a 2013 White House report on patent assertion & U.S. innovation, conservative estimates place the number of patent demand threats in 2011 at a minimum of 60,000 and more likely at over 100,000."); T. Christian Landreth, "The Fight Against 'Patent Trolls:' Will State Law Come to the Rescue?," *15 NCJL & Tech. On. 100*, 103, n. 22 (2014) ("A White House study indicates that Patent Trolls sent out 100,000 letters threatening to sue for patent infringement in 2012 alone."); Christian Le Bas and Julien Pénin, "Patents and innovation: Are the brakes broken, or how to restore patents' dynamic efficiency?" *Working Paper No. 2014-02*, *Bureau d'Economie Théorique et Appliquée, UDS*, Strasbourg, (2014) ("According to the report, in 2012, trolls [have] accused of infringement approximately 100,000 companies in the United States.");

<sup>239</sup> Opening Statement of the Honorable Fred Upton, Subcommittee on Oversight and Investigations Hearing on "*The Impact of Patent Assertion Entities on Innovation and the Economy*" (November 14, 2013) ("A report released by the White House in June stated that as many as 100,000 companies were threatened last year with patent infringement lawsuit.") at <http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/Hearings/OI/2013114/HHRG-113-IF02-MState-U000031-20131114.pdf>.

<sup>240</sup> Majority Memorandum, Commerce, Manufacturing, and Trade House Subcommittee Hearing on "*A bill to enhance federal and state enforcement of fraudulent patent demand letters*," at 2 (May 20, 2014) at <http://docs.house.gov/meetings/IF/IF17/20140522/102255/HHRG-113-IF17-20140522-SD003.pdf>.

Finally, the PAE Report fails to meet the IQA's utility prong with respect to the Chien Presentation demand letter information because it is unsupported, arbitrarily selective, unreliable and biased; it is actually useless "information to its intended users, including the public"<sup>241</sup> unless the White House's intended use is to mislead.

**RFC15.** For the foregoing reasons, I request that the PAE Report be corrected by removing the PAE demands per year estimates and associated reference to the Chien Presentation and by removing all text drawing the inferences therefrom.

**RFC16.** For the same reasons stated above, I request that the following counterpart unsupported text be removed from the Sperling Article:

- (a) "How big of a problem are patent trolls? Consider this: last year *we* estimate that patent trolls sent out over 100,000 demand letters, threatening everyone from Fortune 500 companies to corner coffee shops and even regular consumers to pay a settlement or face a day in court. The number of these suits has exploded in recent years."
- (b) "The problem is when rogue companies make a business model out of exploiting and abusing the system, using it not to protect invention but to bring frivolous lawsuits to extract settlements from companies trying to serve American consumers."

#### 5.4.4 *Flawed inferences of defendants' suppressed innovation*

The PAE Report cites and uses information from a study by Professor Tucker<sup>242</sup> as underlying information for the following statement on purportedly reduced innovation due to patent enforcement ("Reduced Innovation Statement"):

Even if patent assertion entities do not prevail in the courtroom, their actions can significantly reduce incremental innovation while litigation is ongoing, a situation that can persist for years. The reason is that such action could be viewed by courts as an evidence of "willful infringement" if the plaintiff's patent is upheld, making the firm liable for treble damages. For example, one study found that during the years they were being sued for patent infringement by a PAE, health information technology companies ceased all innovation in that technology, causing sales to fall by one-third compared to the same firm's sales of similar products not subject to the PAE demand.<sup>243</sup>

The PAE Report's statement that patent enforcement actions "can significantly reduce incremental innovation"—"a situation that can persist for years" is a serious charge leveled at the heart of the notice and economic functions of the patent system; the support for this charge—the Tucker Paper—is "expressly rel[ied] upon"<sup>244</sup> "in a manner that reasonably suggests that the agency agrees with the information,"<sup>245</sup> making its dissemination in the PAE Report subject to the IQA.

---

<sup>241</sup> OMB Guidelines § V(2); *See also* OSTP Guidelines § V(5).

<sup>242</sup> Catherine Tucker, "Patent Trolls and Technology Diffusion," (March 23, 2013). TILEC Discussion Paper No. 2012-030, at <http://ssrn.com/abstract=2136955>, hereinafter the "Tucker Paper."

<sup>243</sup> PAE Report at 10, citing the Tucker Paper.

<sup>244</sup> OSTP Guidelines §V(2)(b).

<sup>245</sup> OMB Guidelines, 67 *Fed. Reg.* at 8454.

The Tucker Paper purports to document the disproportionate decline of medical imaging software sales and new product releases by firms after they were sued by an NPE. The Tucker Paper asserts that these vendors’ “product release and attendant sales cycle was halted as a result of litigation”<sup>246</sup> and concludes that (a) “the drop in sales was linked to a drop in incremental product innovation,” and that (b) “[a]n explanation for this lack of innovation is that the vendors did not want to run the risk of being found guilty of ‘willful infringement’ in the patent suit and being liable for treble damages.”<sup>247</sup>

Petitioner analyzed in detail the Tucker Paper in an article entitled “*How misleading scholarship contorted an individual inventors’ story of virtuous patent enforcement into a ‘Patent Troll’ fable,*”<sup>248</sup> which is incorporated herein in its entirety by this reference. Petitioner shows that the Tucker Paper is fraught with fundamental methodology flaws, including biased analysis, selective discarding of critical data, choice of inappropriate and biased controls, use of incomplete product version data, and unsupported speculations of business and legal counterfactuals.

The information disseminated from the Tucker Paper by the PAE Report fails to meet the IQA requirements in numerous respects. It fails the objectivity prong of the IQA because it is based on analysis which omits critical available data, inexplicably selecting for analysis only data on four of the 14 vendors that were sued, only about 1/8 of the eligible sales of vendors that were not sued, and discarding two years-worth of sales data following the litigation, thereby introducing substantial bias.<sup>249</sup> The information is further biased because the Tucker Paper selectively uses data from a period with severe public policy disincentives for medical imaging purchases (the Deficit Reduction Act’s medical imaging reimbursement cuts) while discarding data from a period with substantial purchasing incentives (HITECH Act).<sup>250</sup>

The information from the Tucker Paper also lacks objectivity, both on presentation and substance, because it uses improper controls for medical imaging purchases,<sup>251</sup> failing to use “sound statistical and research methods,”<sup>252</sup> and producing results that are not “presented in an accurate, clear, complete, and unbiased manner.”<sup>253</sup> It also lacks objectivity because it fails to meet several of the Survey Standards. The Tucker Paper’s survey sample frame design was biased because it used the HIMSS Analytics survey which only covered medical imaging facilities in hospitals but not in independent medical imaging centers; the resulting sample frame covered only 43% of target facilities.<sup>254</sup> It thus fails Survey Standard 1.3 that requires survey designs to

---

<sup>246</sup> Tucker Paper, at 29.

<sup>247</sup> Tucker Paper, at 28-29.

<sup>248</sup> Ron D. Katznelson, “How misleading scholarship contorted an individual inventors’ story of virtuous patent enforcement into a ‘Patent Troll’ fable,” (March 22, 2015). Hereinafter referred to as “Katznelson (2015)” and available at <http://ssrn.com/abstract=2583330>.

<sup>249</sup> *Id.*, Section 3.1.

<sup>250</sup> *Id.*

<sup>251</sup> *Id.*, Section 3.2.

<sup>252</sup> OMB Guidelines § V(3)(b); OSTP Guidelines V(6)(b).

<sup>253</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

<sup>254</sup> Katznelson (2015), at 9.

ensure “that survey results are representative of the target population so that they can be used with confidence to inform decisions.”<sup>255</sup> It also fails Survey Standard 2.1 requiring that frames for the sample survey be “appropriate for the study design and [ ] evaluated against the target population for quality.”<sup>256</sup> The Tucker Paper also fails to meet Survey Standard 1.2 because it cannot, and does not, make the showing that medical imaging facilities not in the survey sample (all independent imaging centers) “are impartially excluded on objective grounds.”<sup>257</sup>

The new product release information in the Tucker Paper is erroneous as it is based on a data field in the HIMSS Analytics survey database that does not contain product version information.<sup>258</sup> Thus, the information in the Tucker Paper is from a survey sample frame that fails to meet Survey Standard 1.2 because it does not “yield the data required to meet the objectives of the survey,” nor does it correctly establish the “adequacy of the frame.”<sup>259</sup>

The information from the Tucker Paper further fails the objectivity prong of the IQA because it fails the requirement that “the information is presented within a proper context”...wherein “other information must also be disseminated in order to ensure an accurate, clear, complete, and unbiased presentation.”<sup>260</sup> The Tucker Paper fails to show that the purported voluntary cessation of medical imaging product sales amounted to billions of dollars in lost annual sales. This would have provided context bearing on the credibility of its thesis, as the alternative licensing settlements costs of only a miniscule fraction of that purported loss would appear much more plausible as an explanation.<sup>261</sup> The Tucker Paper also fails to provide critical patent citation information showing defendants’ awareness of the patents in suit in the context of its speculation to the contrary—that accused vendors were unaware of the patents before the filing of the lawsuit.<sup>262</sup>

Finally, the PAE Report fails to meet the IQA’s utility prong with respect to the Tucker Paper information because its speculative, arbitrarily selective, unreliable and biased information on the purported effects of the Acacia litigation on innovation is useless “information to its intended users, including the public.”<sup>263</sup>

**RFC17.** For the foregoing reasons, I request that the PAE Report be corrected by removing the information derived from the Tucker Paper and by removing all text drawing the inferences therefrom, including the Reduced Innovation Statement.

---

<sup>255</sup> Survey Standards, at 8.

<sup>256</sup> *Id.*, at 9.

<sup>257</sup> Survey Standards, at 7. See Guideline 1.2.3.

<sup>258</sup> Katznelson (2015), Section 3.3.

<sup>259</sup> Survey Standards, at 7. See Guideline 1.2.2.

<sup>260</sup> OMB Guidelines § V(3); OSTP Guidelines § V(4)(a).

<sup>261</sup> Katznelson (2015), at 15.

<sup>262</sup> *Id.*, at 14.

<sup>263</sup> OMB Guidelines § V(2); See also OSTP Guidelines § V(5).

## 5.5 The Reports lack presentation and substance objectivity as a whole

### 5.5.1 Biased presentation of sources

The Reports as a whole generally fail the objectivity requirement of the IQA, both on presentation and substance, because they review and focus only on the purported negative aspects of NPEs or PAEs, omitting analysis of the salutary economic benefits of such entities' market activity. The Sperling Article says nothing about the positive role of PAEs and the PAE Report's entire 15 pages including the references deal with the purported adverse effects of PAEs, slipping *only two sentences* on the possibility that PAEs can serve a useful intermediary role.<sup>264</sup>

There were plenty of works on the beneficial aspects of NPEs role in the emerging intellectual property market place at the time the PAE Report was written. Yet, the PAE Report does not cite *any* such works nor does it attempt to present a balanced analysis of both sides of the NPE debate. Exhibit I lists some balanced articles that were well-known by serious researchers and could have been used in the PAE Report to provide a balanced account of the role of NPEs. These works address NPEs role as patent intermediaries that have the ability to assist inventors of limited means enforce their patent rights, reduce the costs of search and exchange, enhance liquidity for patent owners, improve market depth and breadth, and increase overall efficiency. Specialized NPEs are especially valuable in new or emerging technology markets and in instances in which asymmetries of information and other transaction costs are significant. Among the advantages of an NPE-based system that secures and enforces property rights is that it facilitates contracts and trade, with the attendant benefits of enhanced coordination, capital mobilization, price discovery, and valuation.

For example, Schwartz and Kesan's 2012 paper listed first in Exhibit I critiques in detail the Bessen & Meurer paper underlying the key assertion of \$29 billion per year in "costs" from NPEs as discussed in Section 5.2.5. Interestingly, Schwartz and Kesan acknowledge Professor Chien in their paper, thanking her for "comments and suggestions on prior drafts." It is thus indisputable that Professor Chien knew about the criticisms leveled against the Bessen & Meurer paper and could have included a reference to it in the PAE Report for balance.

Professor Chien was also well aware of at least the next five references listed in Exhibit I, as she referenced them in *Startups & Trolls*.<sup>265</sup> But none of these sources are cited in the PAE Report.

This one-sided presentation of authorities in the PAE Report clearly lacks objectivity, both on presentation and substance, because the information is not "presented in an accurate, clear, complete, and unbiased manner."<sup>266</sup>

---

<sup>264</sup> PAE Report at 2. ("Firms that own patents but do not practice them can play a useful role in the innovation ecosystem. Firms that aggregate and manage patents can play an important intermediary role, bringing value to society by more efficiently matching inventors to patent users in an otherwise illiquid market, and by developing expertise in legitimately protecting patents from infringement.")

<sup>265</sup> *Startup & Trolls*, footnotes at 7.

<sup>266</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

**RFC18.** For the foregoing reasons, I request that the PAE Report be corrected by providing balance, including information on the positive economic aspects of NPE activities, including sufficient references to articles such as those in Exhibit I.

### 5.5.2 *Biased presentation of case studies*

The PAE Report dedicates a section on anecdotal examples of abusive patent assertion practices, the first involving a large company defendant,<sup>267</sup> and the second involving small companies receiving NPE demand letters.<sup>268</sup> However, the PAE Report does not provide examples of NPE enforcement of valid patent rights, nor does it even acknowledge that alleged infringers also engage in abusive conduct against small NPEs or licensing companies at great costs to patent owners.

A balanced and unbiased presentation of abuses would have included an example such as that experienced by Alexsam, Inc., a patent licensing company set up by an individual inventor to license his patents. Alexsam's two patents have been subject to *six* reexamination requests at the PTO, which has repeatedly confirmed patentability and/or refused to re-reexamine. A jury confirmed the validity of both patents and of *every one* of the 12 claims in the case.<sup>50</sup> Alexsam sued IDT Corp., for infringement but defendant IDT engaged in litigation abuse. It concealed evidence, thwarted discovery, was unresponsive to specific interrogatories, and gave false responses to the court. It then failed to comply with court orders, further delaying production of responsive documents, thereby exhibiting the behavior alleged of PAEs: "drag[ging] out litigation, to increase pressure on" *plaintiffs* "to settle the case." A detailed description of IDT's abusive tactics can be found in the subsequent Federal Circuit case.<sup>51</sup> The PAE Report ignores many such cases of abuse perpetrated against NPEs and the excessive litigation costs imposed on NPEs as a result.

This one-sided case-study presentation in the PAE Report lacks objectivity, both on presentation and substance, because the information is not "presented in ... complete, and unbiased manner."<sup>269</sup>

**RFC19.** For the foregoing reasons, I request that the PAE Report be corrected by providing balance, including information on case studies that show litigation abuses against NPEs and the excessive costs of litigation they impose.

---

<sup>267</sup> PAE Report, at 6.

<sup>268</sup> *Id.*, at 7.

<sup>50</sup> See *Alexsam, Inc. v. Best Buy Stores, LP*, No. 2:13-cv-00002 (E.D. Tex. 2013), discussed in *PatentlyO.com* (May 17, 2013), at <http://www.patentlyo.com/patent/2013/05/alexsam-inc-v-best-buy-barnes-noble-gap-jc-penney-mcdonalds-et-aled-tex-2013-alexsam-has-asserted-its-gift-car.html>.

<sup>51</sup> *Alexsam, Inc. v. IDT Corp.*, 715 F.3d 1336, 1343-1345, (Fed. Cir. 2013); See the same at Fed. Cir. Case No. 12-1063, Slip Op. at 11-15, at <http://www.ca9.uscourts.gov/images/stories/opinions-orders/12-1063.Opinion.5-16-2013.1.PDF>

<sup>269</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

5.5.3 *Concealing from the bibliography the dominance of a single author*

The PAE Report fails the objectivity requirement of the IQA both on presentation and in substance because it dedicates a disproportionate amount of space reporting on one author’s work—Professor Chien’s non-refereed work. For example, all the figures in the PAE Report are taken from her works. The PAE Report is less transparent about this dominance because of a peculiar omission of some of Professor Chien’s articles from the bibliographic reference list and because of her inexplicable attribution of survey results to a news reporter as discussed in Section 5.4.2.

The details of these omissions and false attribution are discussed in previous subsections above and summarized in Table 1. Had all four of these Chien references been added correctly to the bibliographic reference list, resulting in her having 7 items in the list (by far the largest number of references for any author), it would have been obvious that the PAE Report substantially reflected the views of Professor Chien, if not hers alone. This omission had the effect of concealing bias.

In-text citation	Appears in reference list	Actual source
Chien 2012c	No	Unknown
McBride 2013	No	Colleen Chien, “Santa Clara Best Practices in Patent Litigation Survey,” <i>2013 Advanced Complex Litigation Series, Santa Clara University (May 3, 2013)</i> , at Slide 5.
Chien 2013	No	Colleen Chien, “Patent Trolls by the Numbers,” <i>Patently-O Blog (March 14, 2013)</i>
Chien and Karkhanis 2013	No	Colleen Chien, and Aashish Karkhanis, “Functional Claiming and Software Patents,” (February 12, 2013). At SSRN: <a href="http://ssrn.com/abstract=2215867">http://ssrn.com/abstract=2215867</a>
Tucker 2012	No	Unknown

**Table 1.** In-text citations in the PAE Report missing from the bibliographic reference list

The excessive reliance of the PAE Report on Professor Chien’s work (even if concealed by false attribution to others), and the omission of numerous in-text citations from the bibliographic reference list, lacks objectivity, both on presentation and substance, because the information is not “presented in an accurate, clear, complete, and unbiased manner.”<sup>270</sup>

**RFC20.** For the foregoing reasons, I request that the PAE Report be corrected by providing balance, deleting excessive citation to Professor Chien’s work and by adding additional authorities in keeping with the previous RFC.

**RFC21.** For the foregoing reasons, I also request that the PAE Report be corrected by including in the bibliographic reference list all references invoked by in-text citations.

<sup>270</sup> OMB Guidelines § V(3); OSTP Guidelines § V(6).

## 6 Conclusion

The Reports are highly influential. But they systemically fail the most important IQA requirements, as this Petition shows above. Pursuant to the law, OMB regulations and OSTP Guidelines, I request that the Reports be corrected in accordance with the enumerated requests above, and that they be removed from the government web sites until the appropriate corrections are made.

Please contact me at the phone number or the email listed below if there are any questions pertaining to this Petition.

Thank you for your attention to this matter

Sincerely,

A handwritten signature in blue ink that reads "Ron Katznelson". The signature is written in a cursive style with a large initial "R".

Ron D. Katznelson, Ph.D.  
Office: 760 753-0668  
Email: [rkatznelson@roadrunner.com](mailto:rkatznelson@roadrunner.com)



## 7 Exhibits

## **Exhibit A. The PAE Report**



# PATENT ASSERTION AND U.S. INNOVATION

Executive Office of the President

June 2013



*This report was prepared by the President's Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy.*

## Executive Summary

- ❖ Some firms that own patents but do not make products with them play an important role in U.S. innovation ecosystem, for example by connecting manufacturers with inventors, thereby allowing inventors to focus on what they do best.
- ❖ However, Patent Assertion Entities (PAEs, also known as “patent trolls”) do not play such roles. Instead they focus on aggressive litigation, using such tactics as: threatening to sue thousands of companies at once, without specific evidence of infringement against any of them; creating shell companies that make it difficult for defendants to know who is suing them; and asserting that their patents cover inventions not imagined at the time they were granted.
- ❖ Suits brought by PAEs have tripled in just the last two years, rising from 29 percent of all infringement suits to 62 percent of all infringement suits. Estimates suggest that PAEs may have threatened over 100,000 companies with patent infringement last year alone.
- ❖ While aggressive litigation tactics are a hallmark of PAEs, some practicing firms are beginning to use them as well. (“Practicing” firms use their patents to design or manufacture products or processes.)
- ❖ PAE activities hurt firms of all sizes. Although many significant settlements are from large companies, the majority of PAE suits target small and inventor-driven companies. In addition, PAEs are increasingly targeting end users of products, including many small businesses.
- ❖ PAEs take advantage of uncertainty about the scope or validity of patent claims, especially in software-related patents because of the relative novelty of the technology and because it has been difficult to separate the “function” of the software (e.g. to produce a medical image) from the “means” by which that function is accomplished.
- ❖ A range of studies have documented the cost of PAE activity to innovation and economic growth. For example:
  - One study found that during the years they were being sued for patent infringement by a PAE, health information technology companies ceased all innovation in that technology, causing sales to fall by one-third compared to the same firm’s sales of similar products not subject to the PAE-owned patent.
  - Another study found that the financial reward received by winning PAEs amounted to less than 10% of the share value lost by defendant firms, suggesting that the suits result in considerable lost value to society from forgone technology transfer and commercialization of patented technology.
- ❖ History suggests that it should be possible to address these challenges. Similar cases occurred with patents for agricultural equipment and for railroad equipment in the late 19th century, in which there was great uncertainty about whether a valid patent had been infringed. Once these underlying conditions were changed, this business model was no longer profitable and litigation of this type fell dramatically.
- ❖ Policies such as the following: fostering clearer patents with a high standard of novelty and non-obviousness; reducing disparity in the costs of litigation for patent owners and technology users; and increasing the adaptability of the innovation system to challenges posed by new technologies and new business models; would likely have a similar effect today.

## I. Introduction

*The folks that you're talking about [PAEs] are a classic example; they don't actually produce anything themselves. They're just trying to essentially leverage and hijack somebody else's idea and see if they can extort some money out of them... [O]ur efforts at patent reform only went about halfway to where we need to go and what we need to do is pull together additional stakeholders and see if we can build some additional consensus on smarter patent laws.*

- President Obama, February 14, 2013

The purpose of the U.S. patent system, according to the Constitution, is “to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries” (U.S. Const., art. 1, sec. 8, cl. 8). Giving inventors this right provides a powerful incentive for innovation.

Patent policy must navigate a fine line however, as excessive enforcement of that exclusivity—such as through abusive litigation or overly broad patent claims—may dampen incentives for future innovation. Innovators who fear inadvertently infringing existing patents may reduce innovative activity or take costly steps to defend against lawsuits claiming infringement, leading to fewer resources available for wages, job creation, and innovation of new products and services.

Firms that own patents but do not practice<sup>1</sup> them can play a useful role in the innovation ecosystem. Firms that aggregate and manage patents can play an important intermediary role, bringing value to society by more efficiently matching inventors to patent users in an otherwise illiquid market, and by developing expertise in legitimately protecting patents from infringement. However, some litigation strategies may reduce incentives to transfer or commercialize technology by unwarrantedly raising potential innovators' fears that they will be accused of patent infringement if they do so.

This report looks particularly at firms who do not practice the patents they own and instead engage in aggressive litigation to collect license and other fees from alleged infringers. A review of the evidence suggests that on balance, such patent assertion entities (PAEs) (also known as “patent trolls”) have had a negative impact on innovation and economic growth.

The success of the PAE business model in part reflects patent policy challenges created by the rapid growth of complex software products. Because of rapid technological change and the special characteristics of software, it has been hard to define clear boundaries for patents, and hard to set an appropriate bar for non-obviousness, leading to many opportunities that PAEs (and in some cases, non-PAEs) have exploited.

## II. The Role of Intermediaries in the Patent System

---

<sup>1</sup> Firms that “practice” their patents use them to design or manufacture products or processes.

Patent intermediaries can play a useful social role. Inventors and buyers of patents (such as a manufacturer who can commercialize patented inventions) may have a difficult time finding each other because the potential usefulness of a patented technology is often not obvious, and often depends on the complementarity between the protected technology and the buyer's own portfolio of technology.

In principle, illiquid markets such as the one for patents may benefit from specialized intermediaries. These intermediaries bring value to society by more efficiently matching patent holders to patent buyers, thereby fostering transfer of technology from inventors to those who can use the technology to make products that are valuable to consumers. For example, an individual inventor might sell a patented battery technology to an intermediary, who then sells or licenses the patent to a cell-phone manufacturer who has both the equipment to make the battery in large scale and the ability to market the advantages of the new battery when combined with that phone.

This arrangement allows inventors to specialize in innovation and benefit from the specialized

#### *THE LEAHY-SMITH AMERICA INVENTS ACT (AIA)*

In September, 2011, President Obama signed into law the Leahy-Smith America Invents Act, historic patent reform legislation designed to help American entrepreneurs and businesses bring their inventions to market sooner, creating new businesses and new jobs.

The key provisions of the AIA, which went into full effect in 2012, are helping to improve the patent system for innovators in all fields by offering a fast-track option for patent processing; taking important steps to reduce the current patent backlog; and increasing the ability of Americans to protect their intellectual property abroad.

Several provisions of AIA may help address some of the problematic behavior of PAEs by creating new programs at the Patent and Trademark Office to create alternatives to litigation regarding patent validity, new methods for post-grant review of issued patents, and major steps to increase patent quality through clarifying and tightening standards. Nonetheless, the impact of aggressive litigation tactics by PAEs and others was not widely known during the seven years the AIA was under negotiation, and as President Obama said, AIA "only went about halfway to where we need to go."

commercial knowledge and connections of an intermediary. Similarly, it can be costly for technology users to find all potentially-relevant patents. Effective brokering of patents by intermediaries can therefore increase the value of patents, fostering greater incentives to innovate. And finally, potential inventors may not have the resources to protect their patents from infringement; their incentives to invent may be increased if they can sell their patents to firms that specialize in litigation and other means to collect license fees from those who are using the patented technology.

On the other hand, patent intermediaries may also act in ways that reduce innovation. Recent years have seen the rapid emergence of PAEs, or "patent trolls." These firms "use patents primarily to obtain license fees rather than to support the development or transfer of technology" (Chien 2012). Obtaining these license fees in practice often means aggressive litigation practices,

in which PAEs tie up (or threaten to tie up) legitimate innovators in court by charging them with patent infringement. The PAE business model is generally seen as combining characteristics such as the following (Chien 2012; Bessen, Meurer and Ford 2011; Hagiu and Yoffie 2013):

1. They do not “practice” their patents; that is, they do not do research or develop any technology or products related to their patents;
2. They do not help with “technology transfer” (the process of translating the patent language into a usable product or process);
3. They often wait until after industry participants have made irreversible investments before asserting their claims,
4. They acquire patents solely for the purpose of extracting payments from alleged infringers;
5. Their strategies for litigation take advantage of their non-practicing status, which makes them invulnerable to counter-claims of patent infringement.
6. They acquire patents whose claim boundaries are unclear, and then (with little specific evidence of infringement) ask many companies at once for moderate license fees, assuming that some will settle instead of risking a costly and uncertain trial.
7. They may hide their identity by creating numerous shell companies and requiring those who settle to sign non-disclosure agreements, making it difficult for defendants to form common defensive strategies (for example, by sharing legal fees rather than settling individually).

While intermediaries in general may be non-practicing entities, and generate revenues through licensing fees, PAEs go further by masking their identity, and acquiring and asserting broad patents, some of questionable validity, in order to extract settlement fees.

For example, one company sued dozens of online retailers, claiming that its patents covered nearly any use of online shopping cart technology, leading several retailers to pay settlements worth millions of dollars each. Ultimately, one online technology retailer won an appeal that invalidated each of the three key patents that were the basis for the original suits. The court found that the claims of the patents were obvious in light of products that already existed at the time the patent was filed.<sup>2</sup> The victory in this case, however, required spending millions of dollars and years in court – a risk that other online retailers had been unwilling to take (Mullin 2013a; Mackie, Payne, and Stewart 1994). See below for additional examples of PAE tactics.

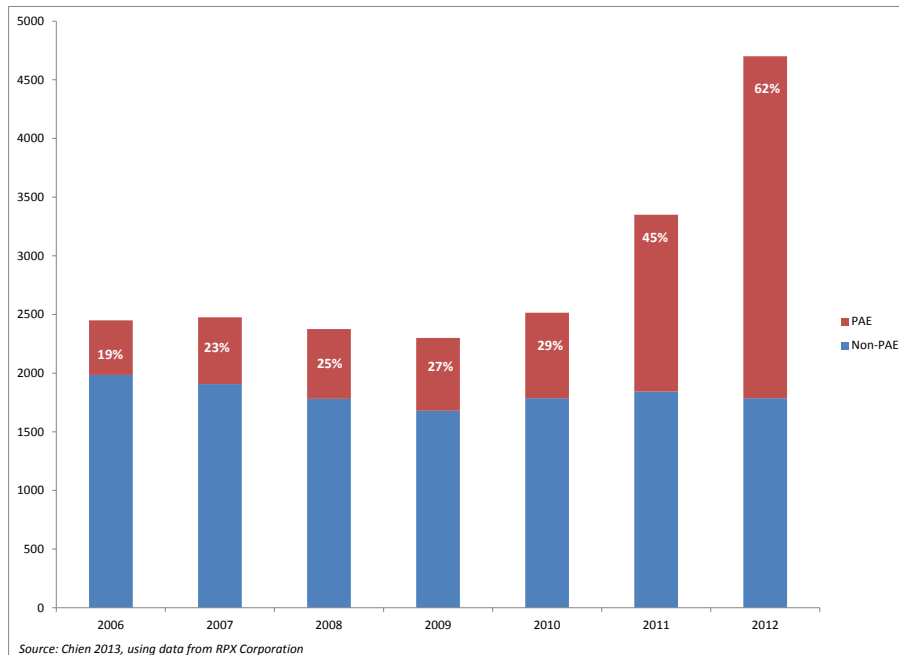
---

<sup>2</sup> The appeals court held that once the technology existed to do purchasing on a closed network, extending this capability to allow purchasing on the Internet, while novel, required only steps that would be obvious to anyone skilled in the relevant prior art.



PAE activity has increased dramatically in recent years (Figure 1). Last year, PAEs brought over 2,500 lawsuits — 62% of all patent suits. That compares to 1,500 in 2011 (45% of all cases), and 731 in 2010 (accounting for 29%) (Chien 2013). Other studies find a similar rise in PAE activity. An updated version of a study done for the US Government Accountability Office (Jeruss, Feldman and Walker, 2012) finds that PAEs filed 59% of the patent lawsuits in the US in 2012 (Feldman, Ewing, and Jeruss (2013).

**Figure 1: Total number of Patent Cases Commenced, 2006-2012**



The increased prevalence of PAE suits, and patent suits in general, in recent years stands in contrast to the 20<sup>th</sup> century, when suits for patent infringement were relatively rare. This increase is likely due to two factors. First, there are an increasing number of computer and communications patents, whose wider breadth makes them more easily abused, as we discuss below. PAE suits are concentrated in the IT sphere; according to one estimate, 82% of PAE defendants were sued on the basis of a software patent (in contrast to only 30% of those sued by non-PAEs) (Chien and Karkhanis, 2013). Software patents are nearly five times as likely to be in a lawsuit as chemical patents; business method patents are nearly fourteen times as likely (Bessen 2011).

Second, during the 20<sup>th</sup> century, patents were primarily held by manufacturers (FTC 2011). Rival makers of complex products are likely to be infringing each other’s patents, so they have an incentive to settle competing infringement cases by cross-licensing, rather than engaging in expensive legal battles that do not add to society’s stock of scientific knowledge. In contrast, a PAE has no rival product, so it can’t be counter-sued. PAEs also have few of the reputational concerns that might deter a well-known company from appearing to victimize other innovators. Furthermore, PAEs can develop economies of scale in suing many firms at once on a contingency-fee basis; once the initial legal preparation work has been done, a PAE can send

demands asserting infringement to numerous companies at low cost, paying legal fees only in the event that its assertion is successful.

PAEs often threaten to sue with the intention of extracting license fees or settlement payments. The increase in the number of suits filed for patent infringement has thus been accompanied by an increasingly large number of suits threatened. PAEs assert broad patent claims against an unusually large set of potential defendants; these assertions are often not based on any evidence of infringement by an individual defendant, but are instead an attempt to find companies that will seek to settle the PAE's claims rather than risk a trial. Conservative estimates place the number of threats in the last year alone at a minimum of 60,000 and more likely at over 100,000 (Chien 2012).<sup>3</sup>

The uncertainty and expense of litigation suggests that many patents might be best viewed as “probabilistic property rights” or “lottery tickets” (Lemley and Shapiro 2005). Given this situation, many patent owners and users prefer to settle out of court for amounts that have not so much to do with the economic value of their patents or the probability that they have infringed. Instead, settlements are affected more by the parties' relative opportunity costs of going to trial and attitudes towards risk—factors that favor PAEs, whose legal fees are low (since they do not have to provide much evidence to assert that there has been patent infringement), and who do not have to pay the fixed costs of a manufacturing operation. Therefore, PAEs have an incentive to drag out litigation, to increase pressure on defendants to settle the case (Tucker 2012).

## Examples of Abusive Practices in Litigation by Patent Assertion Entities

Above we have argued that Patent Assertion Entities (PAEs) have “over-asserted” their patents, pursuing legal action in a way that does not increase incentives for innovation, and in fact reduces these incentives and complicates normal business operation. Below are two examples:

### Large company example

SAS is the world's largest privately held software company, providing business and organizational customers with advanced analytics. SAS has been a defendant in several suits filed by PAEs. In Congressional testimony in March, John Boswell, SAS's General Counsel, described the PAE business model and its impacts on his company:

Here are the basic parameters of what is happening with these suits. A patent troll sets up shop in a jurisdiction known to be supportive of patent plaintiffs... It buys patents from defunct companies or patents that companies no longer want to keep. It does not hire employees; it does not engage in research; it does not even practice the invention—nor does it ever intend to practice it. The patent troll then either serves a demand letter on the

---

<sup>3</sup> For example, one PAE sent 8,000 notice letters to coffee chains, hotels, and retailers seeking compensation for use of Wi-Fi equipment made by several manufacturers that they allege to infringe on its patents. In February, a Federal judge dismissed a suit by one of those manufacturers to prevent the PAE from seeking royalties from Cisco customers. See Jones (2013).

victims, or effects legal service of a complaint. The troll then pursues settlement by threatening massive and costly discovery,... of every electronic document that might touch upon the alleged claims, by any person inside the defendant's operations. ...[In one recent case], the number of electronic documents that we had to collect exceeded 10 million.... SAS won summary judgment in this case and it is now on appeal to the Federal Circuit. So far this case has cost us in excess of \$8 million [in legal fees alone].

If SAS ultimately wins this case it will be a Pyrrhic victory at best. We spent \$8 million and huge amounts of developer time and executive time etc., for what? This victory does not resolve the other patent troll cases that we face, or will face in the future. This \$8 million and the millions more we are spending on other cases is money SAS no longer has to invest in people, facilities, research, or product development; and we are a relatively small player in this world. .. It does not cost much to be a troll and to make broad, vague demands. On the other hand, the risk to the company receiving a troll threat is enormous.(Boswell 2013)

### **Small company example**

A PAE sent letters to hundreds of small businesses alleging infringements of patents if the businesses have document scanners integrated into their computer networks, and demanding a "good faith payment" of \$900-1,200 per employee for a license. The letter provides no specific evidence against the recipient; it argues instead that general research "has led us to the conclusion that an overwhelming majority of companies like yours utilize systems that are set up to practice at least one of scenarios A through C" that are covered by the patents. In May, the State of Vermont sued the PAE for unfair and deceptive practices, alleging that the letters were targeted to businesses and non-profits unlikely to be familiar with patent law, that they "shifted the entire burden of the pre-suit investigation onto the small business that received the letters", and that despite repeated threats to sue if the payment is not made, no such suits had been filed (see Fisher, 2013).

## **III. "Functional Claiming" and Uncertain Infringement**

To be awarded a patent, an inventor must disclose the invention in sufficient detail to enable skilled practitioners in the relevant field to understand it and potentially build upon it. Patent applicants must also articulate the specific claims as to the scope of the patent. Understanding which products and processes are, in fact, protected by the patent is essential to avoiding infringement upon that patent. Moreover, such clarity enables patents to serve the socially beneficial purpose of promoting technology transfer. The Patent and Trademark Office grants patents only if the claims are novel (have not been made before) and are not obvious to a person skilled in the relevant art.

Setting an appropriate bar for novelty and non-obviousness is particularly important in a new field; if the bar is not set high (something difficult to do in a new field), firms may well find themselves inadvertently infringing patents, both because of the sheer number of patents and because commercial need is driving many inventors to create similar inventions near-simultaneously (Lemley and Melamed 2013). Many practitioners of such technologies (such as railroads in the 19<sup>th</sup>

century and software today) find it more profitable to focus on expanding the overall market for their products by technological cooperation with rivals, rather than working to clearly delineate property rights (Boldrin and Levine 2013).

An additional reason that the issue of overbroad patents is particularly salient in software is due to the prevalence of “functional claiming” in these patent classes (Lemley 2012). A claim term is “functional” when it recites a feature by “what it does rather than by what it is” (In re Swinehart 1971).<sup>4</sup> Functional claiming involves claiming exclusive rights over any device that performs a given function, regardless of how that function is performed.

Functional language can therefore lead to very broad and/or vague claims. These problems are especially acute for software patents. For these patents, it has been argued that the code *is* the function, with the implication that a software patent arguably excludes any other code that performs that same function. In contrast, in pharmaceuticals, the distinction between a function and the means used to perform that function is generally clear. For example, several patents have been awarded for the function of reducing cholesterol; each patent covers a different chemical compound—a different means of providing that function.

Compounding the problem is the fast-moving, interdependent nature of technical change in the software industry. Functional claims can be used to ‘over-assert’ a patent by attempting to cover products and processes that were never contemplated by the inventor or the examiner as being within the claim scope at the time of the invention. For example, a patent claim about a programmed processor could be asserted broadly to cover any and all devices that achieve the claimed result, rather than being limited to a device programmed with the specific software used by the inventor.

In addition, a single piece of software or website might have several thousand “functions” that could be claimed in as many patents. It is also difficult for an outsider to judge what an inventor meant by a claim and to know what sort of invention would be “obvious” to a skilled practitioner and thus unworthy of a patent. For example, in the case discussed earlier, the appeals court had to consider detailed features of twenty-year-old technologies to determine whether the shopping basket patents in fact made novel claims.

Thus, it can be very difficult to know if one is infringing patents. These broad, functionally-defined, and intertwined patents are therefore a key part of the PAE business model. These intermediaries acquire broad patents and threaten suit, in hopes of extracting settlements. If even one patent in a complex product is held to be infringed, the product cannot be legally sold (Lemley and Shapiro, 2005). This situation can lead to problems for practicing firms both large (note that a single smartphone may read on over 100,000 patents) and small (the basis of the demand letters discussed in the examples above is the alleged interaction between components of a computer

---

<sup>4</sup> For example, functional language is often used to add further description to a structure or step, e.g., a claim may recite a conical spout (*a structure*) that allows several kernels of popped popcorn to pass through at the same time (*a function*). In re Schreiber, 128 F.3d 1473, 1478(Fed. Cir. 1997).

network found in most offices). The stakes are particularly high when the venue for an infringement dispute is the U.S. International Trade Commission (ITC), given the ITC's inability to award damages and reliance instead on exclusion orders barring import of products deemed infringing into the United States.

#### IV. The Economic Cost of PAE Activity

While most patents are not litigated and are properly practiced and enforced, the harassing litigation tactics of some PAEs, combined with substantial litigation costs (ranging from a median of \$650,000 for smaller cases, to a median of over \$5 million per case where the amount in controversy exceeds \$25 million) (AIPLA 2013), have added significant costs to the innovation ecosystem and sapped investments in research and development, causing great harm to society. These costs are of several types.

**Direct costs to firms that practice patents.** James Bessen and Michael Meurer (2012) find that defendants and licensees paid PAE's \$29 billion in 2011, a 400% increase from 2005; they estimate that less than 25% of this money flowed back to innovation.<sup>5</sup> In addition, in the majority of PAE cases, the legal cost of the defense exceeds this settlement or judgment amount (Chien 2012c).

**Private costs of lost opportunities to commercialize technology.** One might argue that the losses to defendants accused of infringement would be offset by gains to the owners of patents. However, very little such transfer of value appears to take place. For example, in the years 2000 through 2010, a set of fourteen publicly-traded PAEs followed by Bessen, Meurer, and Ford (2011) had total revenues of \$7.6 billion.<sup>6</sup> Patent suits initiated by those fourteen entities were associated with a decline of \$87.6 billion in defendant company share value over the same period, implying that the financial award experienced by winning PAEs amounts to less than 10% of the lost share value in this sample.

While drops in the share value of a defendant companies may reflect other economic factors (e.g. the now-raised expectation of losing future suits or making settlement payments), the 90% of lost defendant share values that simply vanishes suggests considerable lost value to society from forgone technology transfer and commercialization of patented technology. Aggregating to all suits by PAEs yields lost wealth of over \$300 billion in four years starting in 2007. That is, the stock

---

<sup>5</sup> In their papers, Bessen and Meurer define PAEs as firms with each of the following characteristics: they "do not produce goods, rather they acquire patents in order to license them to others," they "seek to derive the majority of their income from the enforcement of patent rights," and they file lawsuits.

<sup>6</sup> These revenues may include revenues from sources other than litigation, and therefore may overstate the value of transfers from defendants to these PAEs. Note that the \$7.6 billion does not include payment streams received after 2010 related to settlements won during the study period. Future payment streams are unlikely to be large given that settlements tend to be paid in lump sums. Also, the "event study" method used by the authors controls for the impact of the recession on firm valuations, because the method looks at changes in a firm's share value around the time of a lawsuit filing.

market values the lost opportunities for technology commercialization as significantly greater than the direct payments from defendants and licensees to PAEs.

Even if patent assertion entities do not prevail in the courtroom, their actions can significantly reduce incremental innovation while litigation is ongoing, a situation that can persist for years. The reason is that such action could be viewed by courts as an evidence of “willful infringement” if the plaintiff’s patent is upheld, making the firm liable for treble damages. For example, one study found that during the years they were being sued for patent infringement by a PAE, health information technology companies ceased all innovation in that technology, causing sales to fall by one-third compared to the same firm’s sales of similar products not subject to the PAE demand (Tucker 2013).

**Social costs of reduced innovation.** A great deal of economic literature shows that firms do not capture all the value created by the research and development they do (Mansfield 1968). Thus, the losses caused by excessive litigation exceed even the large stock market losses described above, including lost value to consumers who are not able to buy innovative products, and reduced income for workers whose pay is lower because they are unable to work with more productive new processes.

### Range of Victims

Although PAEs often target major, household-name and deep-pocketed technology companies, they also target start-ups and small companies. In fact, though the most substantial settlements are often extracted from large entities, the majority of PAE suits target small and inventor-driven companies (Bessen and Meurer 2012).

Recent surveys provide evidence for the negative impact of PAE litigation on innovative companies. The impact on smaller startups is particularly acute. In a recent survey of 223 technology company startups, 40 percent of PAE-targeted companies reported a “significant” operational impact (e.g. change in business, exit from the market, delay in milestone, change in product, etc.) due to the suit or threat thereof (Figure 2).<sup>7</sup> In another recent survey of 116 in-house counsels, primarily from firms with over \$100 million in annual revenue, nearly all firms reported that PAE demands had affected them financially or distracted them from their core business, with nearly 40 percent stating that PAE activity had led them to make changes to an underlying product (McBride 2013).

PAEs have also sent infringement notices to “downstream users” of technologies, who are often small companies, as in the scanner and Wi-Fi cases discussed above. Although the amount of money extracted from each company is small, the number of potential defendants makes this strategy potentially profitable overall.

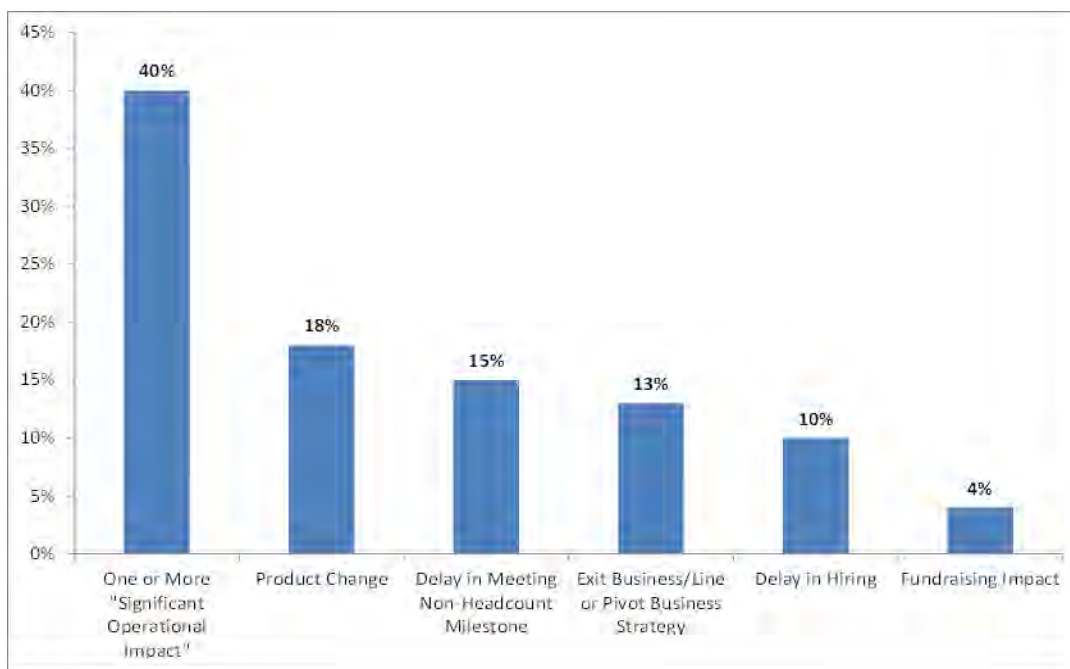
---

<sup>7</sup> “PAE” was defined as “an entity that does not offer products/services” and makes a “demand” regarding patents (Chien 2012).

Aggressive litigation tactics have also been adopted by some firms that practice their patents. The recent spate of patent litigation among large technology companies—termed the “smartphone patent wars” by the press—typifies this behavior, which also involves companies purchasing massive numbers of patents as a defense against of litigation, or as leverage in negotiating licenses with competitors.

Between \$15-20 billion was spent on patent litigation and patent purchases in the smartphone industry from 2010- 2012 (Lemley 2012). And in 2011, spending by Apple and Google on patent litigation and patent acquisitions exceeded spending on research and development of new products, according to public filings (Duhigg and Lohr 2012).<sup>8</sup> Indeed, Google’s \$12.5 billion purchase of Motorola, according to its own statements, was undertaken in large part to prevent patent suits from competitors (Womack and Tracer 2011).

Figure 2: Impacts of a PAE Demand on Technology Startups<sup>9</sup>



“Defensive” purchase of patents has come under scrutiny by the Federal Trade Commission and the Department of Justice for potentially anti-competitive behavior.<sup>10</sup> In one illustrative case,

<sup>8</sup>In 2012, Google spent \$12.5 billion to buy Motorola Mobility and its patents and \$5.2 billion in 2011 on research and development (R&D) Google, Inc., Annual Report (Form 10-K) 6 (Jan. 26, 2012), available at <http://www.sec.gov/Archives/edgar/data/1288776/000119312512025336/d260164d10k.htm>. In 2011, Apple spent \$2.4 billion on R&D but contributed more, approximately \$2.6 billion, to a single transaction to buy patents from Nortel. Apple, Inc., Annual Report (Form 10-K) 7 (Oct. 26, 2011), available at <http://www.sec.gov/Archives/edgar/data/320193/000119312511282113/d220209d10k.htm>

<sup>9</sup> Source: Chien 2012

<sup>10</sup> [http://www.justice.gov/atr/public/press\\_releases/2012/280190.htm](http://www.justice.gov/atr/public/press_releases/2012/280190.htm)

Apple and Motorola engaged in protracted legal wrangling over whether Motorola’s royalty requests were reasonable given that the technology was “standard essential,” i.e. required for a standardized technology to function. In some technical standards-setting situations in which a patented technology is being considered for inclusion in a standard (such as Wi-Fi), a patent-holder may agree to offer licenses for the technology on “fair, reasonable, and non-discriminatory” (FRAND) terms, in return for gaining access to the broad market that having a standard potentially creates.

When standards incorporate patented technologies, owners of those patents benefit from expanded marketing and licensing opportunities, while the public benefits from products embodying the best technical solutions. However, a product that complies with such a standard will necessarily read on these patents, creating a potential incentive for patent owners to raise the price of a license after the standard is set. In early 2013, the Department of Justice and Patent and Trademark Office issued a joint policy statement on the implications of this phenomenon for enforcement at the International Trade Commission (ITC).<sup>11</sup> Also in 2013, the FTC settled with Google, issuing a consent decree in which Google agreed to honor Motorola’s prior commitments to license standard-essential technologies on FRAND terms (Federal Trade Commission 2013).

## V. Conclusion

*[A]mong a host of dormant patents, some will be found which contain some new principle . . . which the inventor, however, had failed to render of any use in his own invention. And some other inventor, ignorant that such a principle had been discovered... had the genius to render it of great practical value . . . when, lo! the patent-sharks among the legal profession, always on the watch for such cases, go to the first patentee and, for a song, procure an assignment of his useless patent, and at once proceed to levy black-mail upon the inventor of the valuable patent.*

- Senator Issac Christiancy, (R – Michigan) 1878<sup>12</sup>

“Patent Assertion Entities” (PAEs) often abuse the U.S. intellectual property system’s strong protections by using tactics that create outsize costs to defendants and innovators at little risk to themselves. The PAE business model is based on the presumption that in many cases, targeted firms will settle out of court rather than take the risky, time-consuming course of allowing a court to decide if infringement has occurred.

The practices of this group of firms, which has come to file 60% of all patent lawsuits in the US, act to significantly retard innovation in the United States and result in economic “dead weight loss” in the form of reduced innovation, income, and jobs for the American economy.

Improving policy in this area is challenging because maintaining the incentives for innovation provided by patents requires allowing litigation when patents are infringed, and because practicing firms sometimes act badly as well.

---

<sup>11</sup> <http://www.justice.gov/atr/public/guidelines/290994.pdf>

<sup>12</sup> 45 CONG. REC. 307 (1878); quoted in Magliocca, 2007



As the quote above suggests, this problem has occurred before in US history. These abusive suits occur when it is costly or risky for practicing firms to defend themselves against unwarranted claims of infringement. Similar cases occurred with patents for agricultural equipment and for railroad equipment in the late 19th century.

In the case of agriculture, “shark” activity was unleashed in the late 1860s when the Commissioner of Patents (with the support of Congress) issued rulings that had the effect of reducing the bar for non-obviousness. In the 1880s, the Patent Office (again supported by Congress) changed the standard back to what it had been, and suits by non-practicing patent owners fell dramatically (Lamoreaux, et al 2013; Magliocca 2007).

In the case of railroad equipment, the late 19th century was a period of fast-moving, complex technical change, making it difficult to determine whether claims were novel and non-obvious to a skilled practitioner. In addition, practitioners of railroad technologies (not unlike software innovators today) preferred to focus on expanding the overall market for their products by technological cooperation with rivals, rather than working to clearly delineate property rights (Boldrin and Levine 2013). In this case, “shark” activity fell away as a) railroad firms banded together to fight all claims of infringement (rather than settling) and b) patent claims became narrower and clearer, as railroad technology became more codified (Chien 2012; Usselman and John, 2006).

A key factor in the rise of patent assertion by non-practicing entities in each of these cases was a change in law or technology that led to uncertainty about whether a patent had been infringed (for example, the granting of large numbers of patents that were broadly written or that met only a low standard of non-obviousness). History suggests that it should be possible to address these challenges. There have been two periods when conditions arose for the PAE or “shark” business model to be profitable (Lamoreaux *et al* 2013). In both instances, once the underlying conditions were changed, this business model was no longer profitable and litigation of this type fell dramatically.

Thus, the best approach to resolving today’s patent troll problem is not to ban firms specialized in patent assertion, but rather to reduce the extent to which legal rules allow patent owners to capture a disproportionate share of returns to investment (Lemley 2008). We see three main areas for improvement: clearer patents with a high standard of novelty and non-obviousness, reduced disparity of litigation costs between patent owners and technology users, and greater adaptability of the innovation system to challenges posed by new technologies and new business models.

## Works Cited

- AIPLA (American Intellectual Property Law Association). "Re: Comments on the FTC/DOJ Patent Assertion Entity Activities Workshop, December 10, 2012." April 5, 2013. <http://www.justice.gov/atr/public/workshops/pae/comments/paew-0046.pdf>.
- Allison, John R., Emerson H. Tiller, Samantha Zyontz, and Tristan Bligh. "Patent Litigation and the Internet." *Stanford Technology Law Review* 3 (2012).
- Ballardini, Rosa M. "The Software Patent Thicket: A Matter Of Disclosure." *SCRIPTed* 6, no. 2 (2009), 207-33. <http://www.law.ed.ac.uk/ahrc/script-ed/vol6-2/ballardini.asp>
- Bessen, James E. "A Generation of Software Patents." *Boston University School of Law Working Paper No. 11-31*, June 21, 2011.
- Bessen, James E., and Michael J. Meurer. "The Direct Costs from NPE Disputes." *Boston University School of Law, Law and Economics Research Paper No. 12-34*, June 28, 2012.
- Bessen, James E., Michael J. Meurer, and Jennifer Laurissa Ford. "The Private and Social Costs of Patent Trolls." *Boston University School of Law, Law and Economics Research Paper No. 11-45*, September 19, 2011.
- Boldrin, Michele, and David K. Levine. "The Case Against Patents." *Journal of Economic Perspectives* 27, no. 1 (2013): 3-22.
- Boswell, John. *Abusive Patent Litigation: The Impact on American Innovation & Jobs, And Potential Solutions*, United States House of Representatives Judiciary Subcommittee on Courts, Intellectual Property and the Internet 113<sup>th</sup> Cong. 2013.
- Chien, Colleen V. *Patent Assertion Entities*, Presentation to the DOJ/FTC hearing on PAEs. Washington, DC, December 10, 2012.
- . "Patent Assertion Entities, Presentation to the DOJ/FTC hearing on PAEs." *Social Science Research Network*. December 10, 2012. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2187314](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2187314) (accessed May 15, 2013).
- . "Startups and Patent Trolls." *Santa Clara University Legal Studies Research Paper No. 09-12 Working Paper Series*, 2012.
- Consumer Protection Complaint. State of Vermont v. MPHJ Technology Investments LLC, 282-5-13, State of Vermont, Superior Court, Washington Unit. May 8, 2013. <http://www.atg.state.vt.us/assets/files/Vermont%20v%20MPHJ%20Technologies%20Complaint.pdf>
- Duhigg, Charles, and Steve Lohr. "The Patent, Used as a Sword." *The New York Times*, October 7, 2012.
- Federal Trade Commission (FTC). "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition." March 2011.
- Federal Trade Commission (FTC). *Google Agrees to Change Its Business Practices to Resolve FTC Competition Concerns In the Markets for Devices Like Smart Phones, Games and Tablets, and in Online Search*. January 3, 2013. <http://www.ftc.gov/opa/2013/01/google.shtm>.
- Feldman, Robin, Thomas Ewing and Sara Jeruss. "The AIA 500 Expanded: Effects of Patent Monetization Entities" April 9, 2013. <http://ssrn.com/abstract=2247195>
- Fisher, Daniel. "Hard Time for Trolls as Vermont Sues Patent Mill Over Demand Letters." *Forbes*. May 24, 2013.

Hagi, Andrei, and Yoffie, David "The New Patent Intermediaries: Platforms, Defensive Aggregators, and Super-Aggregators," *Journal of Economic Perspectives* 27, no. 1 (Winter 2013): 45-66.

*Halliburton Energy Services, Inc. v. M-I LLC*. 514 F.3d 1244 (United States Court of Appeals, Federal Circuit, January 25, 2008).

*In Re Schreiber*. 128 F.3d 1473 (United States Court of Appeals, Federal Circuit, October 23, 1997).

*In Re Swinehart*. 439 F.2d 210 (United States Court of Customs and Patent Appeals, 1971).

Jeruss, Sara, Robin Feldman and Joshua Walker. "The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation." 11 *Duke Law and Technology Review* pp. 357-389 (2012).

Jones, Ashby. "Cisco's Patent Counterattack Fails." *The Wall Street Journal*, February 6, 2013.

Lamoreaux, Naomi R., Kenneth L. Sokoloff and Dhanoos Sutthiphisal. Patent Alchemy: The Market for Technology in US History. *Business History Review*, 87, no.1 (2013): 3-38.

Lemley, Mark A. "Are Universities Patent Trolls?" *Fordham Intellectual Property, Media & Entertainment Law Journal* 63, no. 1 (2008): 611-631.

Lemley, Mark A. "Software Patents and the Return of Functional Claiming." *Stanford Public Law Working Paper No. 2117302 Working Paper Series, 2012*.

Lemley, Mark A. and Douglas Melamed. "Missing the Forest for the Trolls" *Stanford Law and Economics Olin Working Paper No. 443, 2013*.

Lemley, Mark A., and Carl Shapiro. "Probabilistic Patents." *Journal of Economic Perspectives* 19 (2005): 75.

Mackie, David J., Andrew C. Payne, and Lawrence C. Stewart. US Patent 5715314. 1994.

Mansfield, Edwin. *Industrial research and technological innovation: An econometric analysis*. New York: Norton, 1968.

Magliocca, Gerard N., "Blackberries and Barnyards: Patent Trolls and the Perils of Innovation." *Notre Dame Law Review* 82 (2007). Mullin, Joe. "How Newegg crushed the "shopping cart" patent and saved online retail." *Ars Technica*, January 27, 2013a.

Mullin, Joe. *Patent Trolls Want \$1,000 - For Using Scanners*. *Arstechnica.com* January 2, 2013b. Tucker, Catherine. "Patent Trolls and Technology Diffusion." *TILEC Discussion Paper No. 2012-030 Law and Economic Research Paper Series, 2013*.

Usselman, Steven W., and Richard R. John. "Patent Politics: Intellectual Property, the Railroad Industry, and the Problem of Monopoly." *The Journal of Political History* 18, no. 1 (2006): 96-125.

Womack, Brian, and Zachary Tracer. "Google to Buy Motorola Mobility for \$12.5 Billion to Gain Wireless Patents." *Bloomberg*. August 15, 2011. Yeh, Brian T., "An Overview of the 'Patent Trolls' Debate." *Congressional Research Service*. April 16, 2013.

## **Exhibit B. The Sperling Article**

# The White House Blog

Subscribe

## Our Top Stories



President Obama Visits Tanzania



President Obama Holds a Town Hall with Young African Leaders



FLOTUS Travel Journal: Robben Island, An Experience We Will Never Forget



Sweet Potatoes and Ending Hunger in Africa

## Taking on Patent Trolls to Protect American Innovation



Gene Sperling

June 04, 2013

01:55 PM EDT

Share This Post

Our patent system — as enshrined in our Constitution — is meant to encourage innovation and invention. It was designed to reward Americans for their hard work, risk-taking and genius. It has spurred progress that has driven economic growth and transformed the way we live, work, communicate, and stay healthy. But in recent years, there has been an explosion of abusive patent litigation designed not to reward innovation and enforce intellectual property, but to threaten companies in order to extract settlements based on questionable claims.

There are a growing number of companies, commonly called “patent trolls,” who employ these litigation tactics as a business model — costing the economy billions of dollars and undermining American innovation. In the last two years, the number of lawsuits brought by patent trolls has nearly tripled, and account for 62% of all patent lawsuits in America. All told, the victims of patent trolls paid \$29 billion in 2011, a 400% increase from 2005 — not to mention tens of billions dollars more in lost shareholder value.

Today we are releasing a [study on the issue](#) that documents the significant toll this issue is taking on our economy and on innovation, and we are excited to [announce](#) both Executive actions the Obama Administration is taking, and the legislative measures that we are calling on Congress to pass to protect American innovators.

Last February during his [Fireside Hangout](#), the President explained that patent trolls (known more formally as Patent Assertion Entities, or PAEs) “don’t actually produce anything themselves. They’re just trying to essentially leverage and hijack somebody else’s idea and see if they can extort some money out of them.” This type of abusive patent litigation is a major problem.

It’s also important to know what we’re not talking about here. We aren’t trying to make it harder to pursue legitimate intellectual property rights, or vigorously defend valid patents. Indeed, the United States has the best intellectual property protections in the world, and our system rightly ensures that these innovators are compensated for their creativity. The problem is when rogue companies make a business model out of exploiting and abusing the system, using it not to protect invention but to bring frivolous lawsuits to extract settlements from companies trying to serve American consumers. Bad patents in the system (such as those issued with broad or vague language) only compound the problem, and the issue extends far beyond any one industry.

This is a problem we’re hearing a lot about, from multinational corporations and venture capitalists to garage innovators and small-town café owners. Businesses of any size are vulnerable to these tactics, whether you’re a software giant designing complex applications or a mom-and-pop store using a technology product you purchased over the counter.

How big of a problem are patent trolls? Consider this: last year we estimate that patent

### Economy and Jobs

WHITE-HOUSE.GOV IN YOUR INBOX

Sign up for economy and jobs updates

Your Email Address

### PHOTOS OF THE DAY



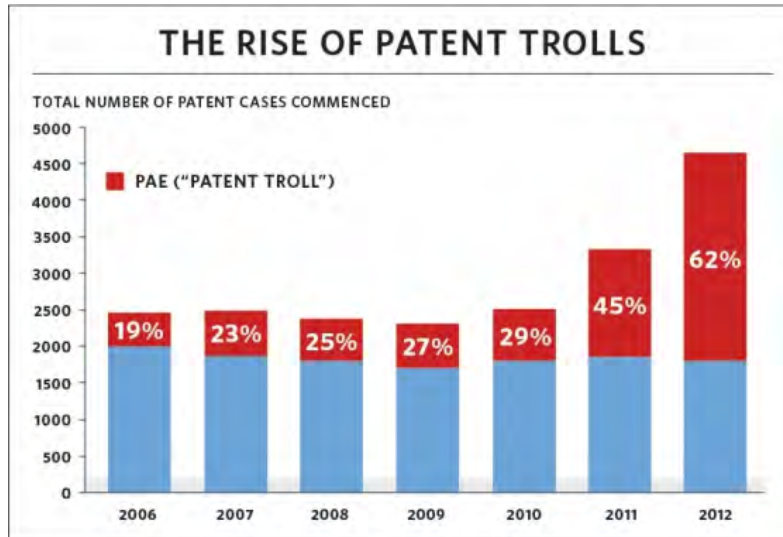
VIEW PHOTO GALLERIES

JUMP TO:

A Specific Month

Other White House Blogs

trolls sent out over 100,000 demand letters, threatening everyone from Fortune 500 companies to corner coffee shops and even regular consumers to pay a settlement or face a day in court. The number of these suits has exploded in recent years.



The Rise of Patent Trolls: Total Number of Patent Cases Commenced, 2006-2012

But this is about more than just the company bottom-line: when businesses need to constantly worry about abusive patent litigation they are able to put less of their efforts into creating new products and serving customers. Today, some of the largest innovators in high-tech spend more money on patent litigation and acquisition than they do on research and development for new products. Smaller companies are getting hit just as hard, and 40% of technology startups targeted by patent trolls reported a significant impact on their business operations due the suit or threat thereof.

It's clear that the abuse of the patent system is stifling innovation and putting a drag on our economy. The trolling has gotten out of control, and it's time to act.

We are excited to announce these steps to give innovators a fair fight in the legal battle against patent trolls, bring clarity to the high-tech patent space, and protect the everyday citizen against their abusive tactics. We look forward to, with your support and the input of everyone affected by this issue, helping make America an even better place to innovate.

Related Topics: [Economy](#), [Innovations](#)

PREVIOUS POST

[Being Biden Vol. 8: Remembering Senator Lautenberg](#)

NEXT POST

[What is The Great Gatsby Curve?](#)

## Featured Content



[Get the facts on health care reform.](#)



[Get the Facts on immigration reform.](#)



[Preparing students for the jobs of the future.](#)

WWW.WHITEHOUSE.GOV

[En español](#) | [Accessibility](#) | [Copyright Information](#) | [Privacy Policy](#) | [Contact](#)

[USA.gov](#) | [Developers](#) | [Apply for a Job](#)

## **Exhibit C. White House Fact Sheet**



## The White House

Office of the Press Secretary

For Immediate Release

June 04, 2013

# FACT SHEET: White House Task Force on High-Tech Patent Issues

## LEGISLATIVE PRIORITIES & EXECUTIVE ACTIONS

Today the White House announced major steps to improve incentives for future innovation in high tech patents, a key driver of economic growth and good paying American jobs. The White House issued five executive actions and seven legislative recommendations designed to protect innovators from frivolous litigation and ensure the highest-quality patents in our system. Additionally, the National Economic Council and the Council of Economic Advisers released a report, [Patent Assertion and U.S. Innovation](#), detailing the challenges posed and necessity for bold legislative action.

In 2011, the President signed the Leahy-Smith America Invents Act (AIA), a landmark piece of legislation designed to help make our patent system more efficient and reliable. As technology evolves more rapidly than ever, we must ensure our patent system keeps pace. As President Obama said in February, "our efforts at patent reform only went about halfway to where we need to go. What we need to do is pull together additional stakeholders and see if we can build some additional consensus on smarter patent laws."

The AIA put in place new mechanisms for post-grant review of patents and other reforms to boost patent quality. Meanwhile, court decisions clarifying the scope of patentability and guidelines implementing these decisions diminish the opportunity to game the patent and litigation systems. Nevertheless, innovators continue to face challenges from Patent Assertion Entities (PAEs), companies that, in the President's words "don't actually produce anything themselves," and instead develop a business model "to essentially leverage and hijack somebody else's idea and see if they can extort some money out of them." These entities are commonly known as "patent trolls." Likewise, the so-called "Smartphone Patent Wars" have ballooned in recent years and today, several major companies spend more on patent litigation and defensive acquisition than on research and development.

Stopping this drain on the American economy will require swift legislative action, and we are encouraged by the attention the issue is receiving in recent weeks. We stand ready to work with Congress on these issues crucial to our economy, American jobs, and innovation. While no single law or policy can address all these issues, much can and should be done to increase clarity and level the playing field for innovators.

## LEGISLATIVE RECOMMENDATIONS

*In that spirit, the Administration recommends that Congress pursue at least seven legislative measures that would have immediate effect on some major problems innovators face. These measures would:*

1. **Require patentees and applicants to disclose the "Real Party-in-Interest,"** by requiring that any party sending demand letters, filing an infringement suit or seeking PTO review of a patent to file updated ownership information, and enabling the PTO or district courts to impose sanctions for non-compliance.
2. **Permit more discretion in awarding fees to prevailing parties in patent cases,** providing district courts with more discretion to award attorney's fees under 35 USC 285 as a sanction for abusive court filings (similar to the legal standard that applies in copyright infringement cases).
3. **Expand the PTO's transitional program** for covered business method patents to include a broader category of computer-enabled patents and permit a wider range of challengers to petition for review of issued patents before the Patent Trial and Appeals Board (PTAB).
4. **Protect off-the-shelf use by consumers and businesses** by providing them with better legal protection against liability for a product being used off-the-shelf and solely for its intended use. Also, stay judicial proceedings against such consumers when an infringement suit has also been brought against a vendor, retailer, or manufacturer.
5. **Change the ITC standard for obtaining an injunction** to better align it with the traditional four-factor test in *eBay Inc. v. MercExchange*, to enhance consistency in the standards applied at the ITC and district courts.



## BLOG POSTS ON THIS ISSUE

August 02, 2013 9:30 AM EDT

### [The Employment Situation in July](#)

Today's report from the Bureau of Labor Statistics (BLS) indicates that the unemployment rate declined from 7.6 percent to 7.4 percent in July, reaching its lowest level since December 2008, and the establishment survey showed that private sector employers added 161,000 jobs last month.

August 02, 2013 12:00 AM EDT

### [West Wing Week: 08/02/13 or "Let Us Be Awed By Their Shining Deeds"](#)

Welcome to the West Wing Week, your guide to everything that's happening at 1600 Pennsylvania Avenue.

August 01, 2013 12:30 PM EDT

### [Coding for All: A STEM Sector that Reflects America](#)

Yesterday, I joined eleven Champions of Change at the White House to celebrate their achievements toward making STEM industries more inclusive for underrepresented communities.

[VIEW ALL RELATED BLOG POSTS](#)

## STAY CONNECTED

[Facebook](#)
[YouTube](#)
[Twitter](#)
[Vimeo](#)
[Flickr](#)
[iTunes](#)
[Google+](#)
[LinkedIn](#)



6. **Use demand letter transparency to help curb abusive suits**, incentivizing public filing of demand letters in a way that makes them accessible and searchable to the public.

7. **Ensure the ITC has adequate flexibility in hiring qualified Administrative Law Attorneys**

#### EXECUTIVE ACTIONS

*Today the Administration is also announcing a number of steps it is taking to help bring about greater transparency to the patent system and level the playing field for innovators. Those steps include:*

- 1. Making “Real Party-in-Interest” the New Default.** Patent trolls often set up shell companies to hide their activities and enable their abusive litigation and extraction of settlements. This tactic prevents those facing litigation from knowing the full extent of the patents that their adversaries hold when negotiating settlements, or even knowing connections between multiple trolls. The PTO will begin a rulemaking process to require patent applicants and owners to regularly update ownership information when they are involved in proceedings before the PTO, specifically designating the “ultimate parent entity” in control of the patent or application.
- 2. Tightening Functional Claiming.** The AIA made important improvements to the examination process and overall patent quality, but stakeholders remain concerned about patents with overly broad claims — particularly in the context of software. The PTO will provide new targeted training to its examiners on scrutiny of functional claims and will, over the next six months develop strategies to improve claim clarity, such as by use of glossaries in patent specifications to assist examiners in the software field.
- 3. Empowering Downstream Users.** Patent trolls are increasingly targeting Main Street retailers, consumers and other end-users of products containing patented technology — for instance, for using point-of-sale software or a particular business method. End-users should not be subject to lawsuits for simply using a product as intended, and need an easier way to know their rights before entering into costly litigation or settlement. The PTO will publish new education and outreach materials, including an accessible, plain-English web site offering answers to common questions by those facing demands from a possible troll.
- 4. Expanding Dedicated Outreach and Study.** Challenges to U.S. innovation using tools available in the patent space are particularly dynamic, and require both dedicated attention and meaningful data. Engagement with stakeholders — including patent holders, research institutions, consumer advocates, public interest groups, and the general public — is also an important part of our work moving forward. Roundtables and workshops that the PTO, DOJ, and FTC have held in 2012 have offered invaluable input to this process. We are announcing an expansion of our outreach efforts, including six months of high-profile events across the country to develop new ideas and consensus around updates to patent policies and laws. We are also announcing an expansion of the PTO Edison Scholars Program, which will bring distinguished academic experts to the PTO to develop — and make available to the public — more robust data and research on the issues bearing on abusive litigation.
- 5. Strengthen Enforcement Process of Exclusion Orders.** Once the U.S. International Trade Commission (ITC) finds a violation of Section 337 and issues an exclusion order barring the importation of infringing goods, Customs and Border Protection (CBP) and the ITC are responsible for determining whether imported articles fall within the scope of the exclusion order. Implementing these orders present unique challenges given these shared responsibilities and the complexity of making this determination, particularly in cases in which a technologically sophisticated product such as a smartphone has been successfully redesigned to not fall within the scope of the exclusion order. To address this concern, the U.S. Intellectual Property Enforcement Coordinator will launch an interagency review of existing procedures that CBP and the ITC use to evaluate the scope of exclusion orders and work to ensure the process and standards utilized during exclusion order enforcement activities are transparent, effective, and efficient.

WWW.WHITEHOUSE.GOV

En español | Accessibility | Copyright Information | Privacy Policy | Contact  
USA.gov | Developers | Apply for a Job

**Exhibit D. PTO Announcement of agency actions**

## Director's Forum: A Blog from USPTO's Leadership

« [Strengthening Our...](http://www.uspto.gov/blog/director/entry/strengthening_our_engagement_with_china) ([http://www.uspto.gov/blog/director/entry/strengthening\\_our\\_engagement\\_with\\_china](http://www.uspto.gov/blog/director/entry/strengthening_our_engagement_with_china)) | [Main \(/blog/director/\)](http://www.uspto.gov/blog/director/entry/uspto_implementation_of_the_2013) | [USPTO Implementation...](http://www.uspto.gov/blog/director/entry/uspto_implementation_of_the_2013) ([http://www.uspto.gov/blog/director/entry/uspto\\_implementation\\_of\\_the\\_2013](http://www.uspto.gov/blog/director/entry/uspto_implementation_of_the_2013)) »

Monday Jun 17, 2013

### USPTO and the Obama Administration Taking Action to Improve Incentives for Future Innovation via High Tech Patents

Blog by Acting Under Secretary of Commerce for Intellectual Property and Acting Director of the USPTO Teresa Stanek Rea

This month, President Obama offered a series of sweeping actions that, alongside Congressional steps, will immediately improve the environment for future innovation. These bold initiatives are designed to reduce abusive patent litigation tactics and to ensure the highest-quality patents in our system. The United States Patent and Trademark Office (USPTO) team is working hard, in consultation with stakeholders and the American public, to make this vision a reality.

The President [set the stage for this new initiative February 14th](http://www.uspto.gov/cgi-bin/exitconf/internet_exitconf.pl?target=www.youtube.com/watch?v=kp_zigxMS-Y) ([http://www.uspto.gov/cgi-bin/exitconf/internet\\_exitconf.pl?target=www.youtube.com/watch?v=kp\\_zigxMS-Y](http://www.uspto.gov/cgi-bin/exitconf/internet_exitconf.pl?target=www.youtube.com/watch?v=kp_zigxMS-Y)), when he said “our efforts at patent reform [via the Leahy-Smith America Invents Act] only went about halfway to where we need to go, and what we need to do is to pull together additional stakeholders and see if we can build some additional consensus on smarter patent laws.” On June 4th, the President announced five executive actions, four of which are specifically tasked to the USPTO. I'd like to take a moment to outline how the USPTO plans to begin implementing those actions.

The President's first executive action instructed the USPTO to begin a rulemaking process to require patent applicants and owners to regularly update patent ownership information. The lack of availability of this information and the problems faced by innovators were highlighted in a study by the Council of Economic Advisers and the National Economic Council that was released with the President's announcement. This study, entitled “[Patent Assertion and U.S. Innovation](http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf)” ([http://www.whitehouse.gov/sites/default/files/docs/patent\\_report.pdf](http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf)), documents the rise of litigation by so-called “patent assertion entities,” or PAEs (also described in the study as “patent trolls”). According to the study, a major challenge for companies and individuals targeted by PAEs is the difficulty in identifying the patent owner because PAEs often mask their identity by creating numerous shell entities. Better information on ownership will increase transparency, reduce abusive litigation, and enable more efficient licensing of patented technology. The rulemaking process will seek public comments on USPTO's specific proposal on how to collect this new information and will also take into account stakeholder feedback received during [earlier stages of consideration](http://www.uspto.gov/ip/officechiefecon/roundtable_01-11-2013.jsp) ([http://www.uspto.gov/ip/officechiefecon/roundtable\\_01-11-2013.jsp](http://www.uspto.gov/ip/officechiefecon/roundtable_01-11-2013.jsp)) of this issue.

Turning to the second executive action announced in the President's initiative, the USPTO will bolster training for patent examiners to improve their examination of functional claims and will also develop additional strategies to improve claim clarity. This action will build on our recent efforts to improve training programs for examiners to ensure the highest quality patent examination. Our next steps will be informed by the valuable stakeholder input received from the launch of our Software Partnership earlier this year, received both in public written comments and at two [February engagement sessions](http://www.uspto.gov/patents/init_events/software_partnership.jsp) ([http://www.uspto.gov/patents/init\\_events/software\\_partnership.jsp](http://www.uspto.gov/patents/init_events/software_partnership.jsp)) in Silicon Valley and New York City.

The third executive action of the President's initiative is focused on empowering citizens using patented technologies in consumer products. As the study “Patent Assertion and U.S. Innovation” documents, PAEs are no longer solely targeting large companies holding vast patent portfolios. Small businesses and enterprising individuals have also been on the receiving end of intimidating letters accusing them of patent infringement and threatening litigation. That is why we will create a valuable online portal that will provide answers to key questions and additional information resources for those individuals. The USPTO has long viewed public education as a core function of the agency; educational materials paired with ready access to public data on particular patents will create a powerful resource to support both users and developers of technology.

That leads me to our fourth executive action—expanding dedicated stakeholder outreach and bringing together the best of academic and government study of these issues. We will continue to actively support White House outreach efforts and help to initiate events across the country to help build a consensus on the next steps that policymakers should be taking in updating our policies and laws. We're also excited to expand our [Thomas Alva Edison Visiting Scholars program](http://www.uspto.gov/blog/director/entry/the_uspto_thomas_alva_edison) ([http://www.uspto.gov/blog/director/entry/the\\_uspto\\_thomas\\_alva\\_edison](http://www.uspto.gov/blog/director/entry/the_uspto_thomas_alva_edison)). Growing this initiative—which brings leaders in academia to the USPTO to develop empirical data and analysis on which to base agency efforts to promote innovation—will play an important role in helping policymakers, including the USPTO, Congress, and the federal courts.

In addition to our executive actions, the President's initiative outlined a number of steps that Congress can take to reduce abusive PAE litigation while promoting a robust intellectual property system that drives innovation. We worked closely with bipartisan Congressional leaders during the development and passage of the Leahy-Smith America Invents Act (AIA), and we look forward to continue working with Congress to achieve the President's goals.

The U.S. patent system “has spurred progress that has driven economic growth and transformed the way we live, work, communicate, and stay healthy,” National Economic Council Director Gene Sperling wrote in [a White House blog](http://www.whitehouse.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation) (<http://www.whitehouse.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation>) June 4th. Our patent system is “enshrined in our Constitution...to encourage innovation and invention.” This Administration has done much to improve our patent system for the betterment of our economy and our society, including through the USPTO's implementation of AIA. With your help we can—and we will—do more.

## **Exhibit E. PAE Report References**

## Exhibit E. PAE Report References

### Works Cited

Article on SSRN: **Name**

Refereed Article:

- AIPLA (American Intellectual Property Law Association). "Re: Comments on the FTC/DOJ Patent Assertion Entity Activities Workshop, December 10, 2012." April 5, 2013. <http://www.justice.gov/atr/public/workshops/pae/comments/paew-0046.pdf>.
- Allison**, John R., Emerson H. Tiller, Samantha Zyontz, and Tristan Bligh. "Patent Litigation and the Internet." *Stanford Technology Law Review* 3 (2012).
- Ballardini**, Rosa M. "The Software Patent Thicket: A Matter Of Disclosure." *SCRIPTed* 6, no. 2 (2009), 207-33. <http://www.law.ed.ac.uk/ahrc/script-ed/vol6-2/ballardini.asp>
- Bessen**, James E. "A Generation of Software Patents." *Boston University School of Law Working Paper No. 11-31*, June 21, 2011.
- Bessen**, James E., and Michael J. Meurer. "The Direct Costs from NPE Disputes." *Boston University School of Law, Law and Economics Research Paper No. 12-34*, June 28, 2012.
- Bessen**, James E., Michael J. Meurer, and Jennifer Laurissa Ford. "The Private and Social Costs of Patent Trolls." *Boston University School of Law, Law and Economics Research Paper No. 11-45*, September 19, 2011.
- Boldrin**, Michele, and David K. Levine. "The Case Against Patents." *Journal of Economic Perspectives* 27, no. 1 (2013): 3-22.
- Boswell, John. *Abusive Patent Litigation: The Impact on American Innovation & Jobs, And Potential Solutions*, United States House of Representatives Judiciary Subcommittee on Courts, Intellectual Property and the Internet 113<sup>th</sup> Cong. 2013.
- Chien**, Colleen V. *Patent Assertion Entities*, Presentation to the DOJ/FTC hearing on PAEs. Washington, DC, December 10, 2012.
- . "Patent Assertion Entities, Presentation to the DOJ/FTC hearing on PAEs." *Social Science Research Network*. December 10, 2012. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2187314](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2187314) (accessed May 15, 2013).
- . "Startups and Patent Trolls." *Santa Clara University Legal Studies Research Paper No. 09-12 Working Paper Series*, 2012.
- Consumer Protection Complaint. State of Vermont v. MPHJ Technology Investments LLC, 282-5-13, State of Vermont, Superior Court, Washington Unit. May 8, 2013. <http://www.atg.state.vt.us/assets/files/Vermont%20v%20MPHJ%20Technologies%20Complaint.pdf>
- Duhigg, Charles, and Steve Lohr. "The Patent, Used as a Sword." *The New York Times*, October 7, 2012.
- Federal Trade Commission (FTC). "The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition." March 2011.
- Federal Trade Commission (FTC). *Google Agrees to Change Its Business Practices to Resolve FTC Competition Concerns In the Markets for Devices Like Smart Phones, Games and Tablets, and in Online Search*. January 3, 2013. <http://www.ftc.gov/opa/2013/01/google.shtm>.
- Feldman**, Robin, Thomas Ewing and Sara Jeruss. "The AIA 500 Expanded: Effects of Patent Monetization Entities" April 9, 2013. <http://ssrn.com/abstract=2247195>
- Fisher, Daniel. "Hard Time for Trolls as Vermont Sues Patent Mill Over Demand Letters." *Forbes*. May 24, 2013.

- Hagi, Andrei, and Yoffie, David "The New Patent Intermediaries: Platforms, Defensive Aggregators, and Super-Aggregators," *Journal of Economic Perspectives* 27, no. 1 (Winter 2013): 45-66.
- Halliburton Energy Services, Inc. v. M-I LLC*. 514 F.3d 1244 (United States Court of Appeals, Federal Circuit, January 25, 2008).
- In Re Schreiber*. 128 F.3d 1473 (United States Court of Appeals, Federal Circuit, October 23, 1997).
- In Re Swinehart*. 439 F.2d 210 (United States Court of Customs and Patent Appeals, 1971).
- Jeruss**, Sara, Robin Feldman and Joshua Walker. "The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation." 11 *Duke Law and Technology Review* pp. 357-389 (2012).
- Jones, Ashby. "Cisco's Patent Counterattack Fails." *The Wall Street Journal*, February 6, 2013.
- Lamoreaux**, Naomi R., Kenneth L. Sokoloff and Dhanoos Sutthiphisal. Patent Alchemy: The Market for Technology in US History. *Business History Review*, 87, no.1 (2013): 3-38.
- Lemley**, Mark A. "Are Universities Patent Trolls?" *Fordham Intellectual Property, Media & Entertainment Law Journal* 63, no. 1 (2008): 611-631.
- Lemley**, Mark A. "Software Patents and the Return of Functional Claiming." *Stanford Public Law Working Paper No. 2117302 Working Paper Series, 2012*.
- Lemley**, Mark A. and Douglas Melamed. "Missing the Forest for the Trolls" *Stanford Law and Economics Olin Working Paper No. 443, 2013*.
- Lemley**, Mark A., and Carl Shapiro. "Probabilistic Patents." *Journal of Economic Perspectives* 19 (2005): 75.
- Mackie, David J., Andrew C. Payne, and Lawrence C. Stewart. US Patent 5715314. 1994.
- Mansfield**, Edwin. *Industrial research and technological innovation: An econometric analysis*. New York: Norton, 1968.
- Magliocca**, Gerard N., "Blackberries and Barnyards: Patent Trolls and the Perils of Innovation." *Notre Dame Law Review* 82 (2007).
- Mullin, Joe. "How Newegg crushed the "shopping cart" patent and saved online retail." *Ars Technica*, January 27, 2013a.
- Mullin, Joe. *Patent Trolls Want \$1,000 - For Using Scanners*. Arstechnica.com January 2, 2013b.
- Tucker**, Catherine. "Patent Trolls and Technology Diffusion." *TILEC Discussion Paper No. 2012-030 Law and Economic Research Paper Series, 2013*.
- Usselman**, Steven W., and Richard R. John. "Patent Politics: Intellectual Property, the Railroad Industry, and the Problem of Monopoly." *The Journal of Policy History* 18, no. 1 (2006): 96-125.
- Womack, Brian, and Zachary Tracer. "Google to Buy Motorola Mobility for \$12.5 Billion to Gain Wireless Patents." *Bloomberg*. August 15, 2011.
- Yeh, Brian T., "An Overview of the 'Patent Trolls' Debate." *Congressional Research Service*. April 16, 2013.

**Exhibit F. OSTP FOIA Request No. 13-112**

By Email: [ostpfoia@ostp.eop.gov](mailto:ostpfoia@ostp.eop.gov)

July 23, 2013

Office of Science and Technology Policy

Attn: FOIA Officer

1650 Pennsylvania Ave, NW

Washington, DC 20504

**Re: Freedom of Information Act Request – Material from Pre-dissemination review under the Information Quality Act.**

Dear FOIA Officer:

Under the Freedom of Information Act, 5 U.S.C. § 552, I respectfully request the information specified below concerning the report entitled “*Patent Assertion and U.S. Innovation*” prepared by the Office of Science & Technology Policy (“OSTP”) in conjunction with the President’s Council of Economic Advisers (“CEA”) and the National Economic Council (“NEC”),<sup>1</sup> hereinafter referred to as the “PAE Report.” As information disseminated to the public by OSTP and the Executive Office of the President, the PAE Report is subject to the Information Quality Act (“IQA”).<sup>2</sup> The Office of Management and Budget (“OMB”) issued Government-wide IQA Guidelines for agency compliance with the IQA (“OMB Guidelines”),<sup>3</sup> pursuant to which OSTP issued its own IQA Guidelines (“OSTP Guidelines”).<sup>4</sup>

To enhance the quality and credibility of the government’s scientific assessments related to such disciplines as the behavioral and social sciences, economic information, public health and medical sciences, life and earth sciences, engineering, or physical sciences, OMB also requires that important scientific information undergo peer review by qualified specialists before it is disseminated by the Federal government, as provided in OMB’s Final Information Quality Bulletin for Peer Review (“Peer Review Bulletin”).<sup>5</sup> Both OMB and OSTP Guidelines, as well as the Peer Review Bulletin require the PAE Report to have undergone a pre-dissemination review by the Government; this request is directed at information concerning such pre-dissemination review.

---

<sup>1</sup> Executive Office of the President, *Patent Assertion and U.S. Innovation*, (June 2013), available at [http://www.whitehouse.gov/sites/default/files/docs/patent\\_report.pdf](http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf)

<sup>2</sup> Pub. L. 106-554, Section 515, 114 Stat. 2763, 2763A–153–154 (2000).

<sup>3</sup> Office of Management and Budget, “*Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*”; Notice; Republication, **67 Fed. Reg.** 8452-8460, (Feb. 22, 2002).

<sup>4</sup> Office of Science and Technology Policy, Final Guidelines for Ensuring the Quality of Disseminated Information, (Oct. 1, 2002), at <http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp-iqg.pdf>

<sup>5</sup> Office of Management and Budget, “*Final Information Quality Bulletin for Peer Review*,” **70 Fed. Reg.** 2664-67, (January 14, 2005).



## REQUESTS

1. **Peer review**: with respect to the PAE Report's peer review prior to its dissemination, please provide the written charge to the peer reviewers; the peer reviewers' names; the peer reviewers' report(s); and the Government's response to the peer reviewers' report(s) as required by the Peer Review Bulletin and §II(9) of the OSTP Guidelines.

2. **Agency pre-dissemination review**:

Please provide all documents not included in the response to Request 1 above concerning the pre-dissemination review of the PAE Report as required by §I(2) of the OSTP Guidelines and §III(2) of the OMB Guidelines (67 *Fed. Reg.* 8459). This request includes communications regarding applicability of the IQA to the PAE Report, memoranda requesting correction of IQA deficiencies as set forth in §I(12) of the OSTP Guidelines, IQA checklists, other management controls and means of tracking objectivity and utility of information in the PAE Report, approvals of its public dissemination, and any determinations or certifications under §I(12) of the OSTP Guidelines that it complies with the IQA and OMB Guidelines. This request also covers responsive pre-dissemination review documents generated by CEA or NEC pertaining to the PAE Report.

Thank you for your attention. If you have any questions about this request, please telephone me at the number indicated below, or indicate by email a convenient time and a phone number for me to call back.

Sincerely,



Ron D. Katznelson, Ph.D.  
1042 N El Camino Real, Suite B-250  
Encinitas, CA 92024  
Office: 760 650-1145; 760 753-0668 (direct)  
Email: [rkatznelson@roadrunner.com](mailto:rkatznelson@roadrunner.com)



EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF SCIENCE AND TECHNOLOGY POLICY  
WASHINGTON, D.C. 20502

August 7, 2013

Ron D. Katznelson, Ph.D.  
1042 N El Camino Real, Suite B-250  
Encinitas, CA 92024

Re: OSTP FOIA No. 13-112

Dear Dr. Katznelson:

On July 23, 2013, you sent the Office of Science and Technology Policy (OSTP) a request under the Freedom of Information Act, 5 U.S.C. § 552, seeking records described in your enclosed request.

OSTP received your request on July 23, 2013. OSTP conducted a search of its records and has located no documents that are responsive your request.

If you consider this to be an inappropriate denial of your request, you may appeal in writing within 30 days of receipt of this letter to General Counsel Rachael Leonard at [ostpfoia@ostp.eop.gov](mailto:ostpfoia@ostp.eop.gov) or via FAX at (202) 395-1224. The email should be clearly marked "Freedom of Information Act Appeal."

Sincerely,

A handwritten signature in blue ink that reads "Jennifer Lee".

Jennifer Lee

Enclosure

**Exhibit G. OSTP FOIA Request No. 14-06**

By Email: [ostpfoia@ostp.eop.gov](mailto:ostpfoia@ostp.eop.gov)  
Office of Science and Technology Policy  
Attn: FOIA Officer  
1650 Pennsylvania Ave, NW  
Washington, DC 20504

October 25, 2013

**Re: Freedom of Information Act Request – material on preparation of report.**

Dear FOIA Officer:

Under the Freedom of Information Act, 5 U.S.C. § 552, I respectfully request the information specified below concerning the report entitled “*Patent Assertion and U.S. Innovation*” issued by the Executive Office of the President (“EOP”), prepared by the Office of Science & Technology Policy (“OSTP”) in conjunction with the President’s Council of Economic Advisers (“CEA”) and the National Economic Council (“NEC”),<sup>1</sup> hereinafter referred to as the “PAE Report.”

Please provide copies of all documents, written communications, and correspondence exchanged between OSTP and an outside party concerning the PAE Report prior to its public dissemination on June 4, 2013 (“covered communications”). For the purpose of this request, an “outside party” includes any person who at the time of the communication was not a full-time U.S. Government employee; “covered communications” includes drafts of the PAE Report, comments directed thereto, proposed edits, markups and reviews, including exchanges conducted via the employee’s private email account(s), whether directly or indirectly through another EOP agency, including but not limited to CEA and NEC.

Thank you for your attention. If you have any questions about this request, please telephone me at the number indicated below, or indicate by email a convenient time and a phone number for me to call back. Please confirm receipt of this request.

Sincerely,



Ron D. Katznelson, Ph.D.  
1042 N El Camino Real, Suite B-250  
Encinitas, CA 92024  
Office: 760 753-0668  
Email: [rkatznelson@roadrunner.com](mailto:rkatznelson@roadrunner.com)

---

<sup>1</sup> Executive Office of the President, *Patent Assertion and U.S. Innovation*, (June 2013), available at [http://www.whitehouse.gov/sites/default/files/docs/patent\\_report.pdf](http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf)

EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF SCIENCE AND TECHNOLOGY POLICY  
WASHINGTON, D.C. 20502

December 12, 2013

Mr. Ron D. Katznelson  
1042 N El Camino Real, Suite B-250  
Encinitas, CA 92024

Re: OSTP FOIA No. 14-06

Dear Mr. Katznelson:

On October 29, 2013, you sent the Office of Science and Technology Policy (OSTP) a request under the Freedom of Information Act (FOIA), 5 U.S.C. § 552, seeking “copies of all documents, written communications, and correspondence exchanged between OSTP and an outside party concerning the PAE [Patent Assertion and U.S. Innovation] Report prior to its public dissemination on June 4, 2013.”

OSTP received your request on October 29, 2013. On November 25, 2013, OSTP sent you a letter acknowledging your request, which we assigned case number 14-06.

On December 12, 2013, you spoke with me by phone about your request around 2:40 PM and again at 6:00 PM. I advised that OSTP had completed its search for records potentially responsive to your request. OSTP has located approximately 45 pages responsive to your request; this number does not account for draft attachments. I advised that OSTP may withhold some of the responsive material **under the consultant corollary to FOIA Exemption 5**. Upon further review of the documents, I have determined that it is unlikely OSTP will assert FOIA Exemption 5 for most of the email correspondence responsive to your request. OSTP is likely to assert FOIA Exemption 5 to withhold the draft attachments, which are predecisional and deliberative draft versions of the Patent Report referenced in your request. Please note that OSTP may assert other applicable FOIA exemptions, such as FOIA Exemption 6, as appropriate.

OSTP is continuing to process your request and will release responsive documents to you on a rolling basis, that is, as documents are processed and become available. I anticipate that OSTP will release responsive documents to you within 10 business days of the date of this letter. In the meantime, please let us know if you have any questions.

Sincerely,



Jennifer Lee

**Exhibit H. The Chien – Edelman exchange on patent  
litigation statistics**



> Senior Advisor for Internet, Innovation, and Privacy

>

> direct: (b)(6) | topline: (b)(6)

>

>



# PATENT FREEDOM

- [Contact Us](#)
- [Member Login](#)

 Search

[Skip to content](#)

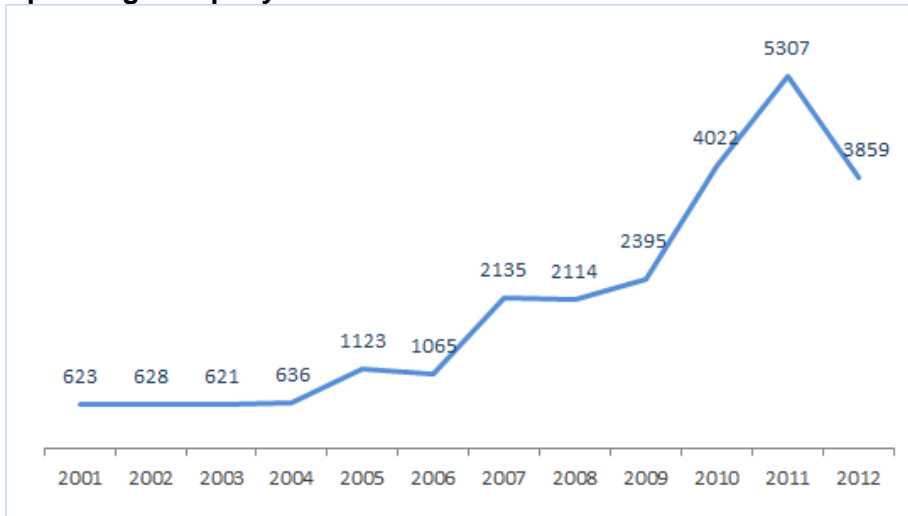
[All About NPEs](#) > Litigations Over Time

- [All About NPEs](#)
  - [What Is an NPE?](#)
  - [Litigations Over Time](#)
  - [Exposure by Industry](#)
  - [Most Pursued Companies](#)
  - [Largest Patent Holdings](#)

## Litigations Over Time

Patent lawsuits involving NPEs have increased dramatically over the last decade. In 2011, another record setting year, there were more than 5,200 occasions when a company found itself in litigation with an NPE, a number that has increased by an average of over 36% *per year* since 2004.

### Operating Company Parties in NPE Lawsuits Over Time

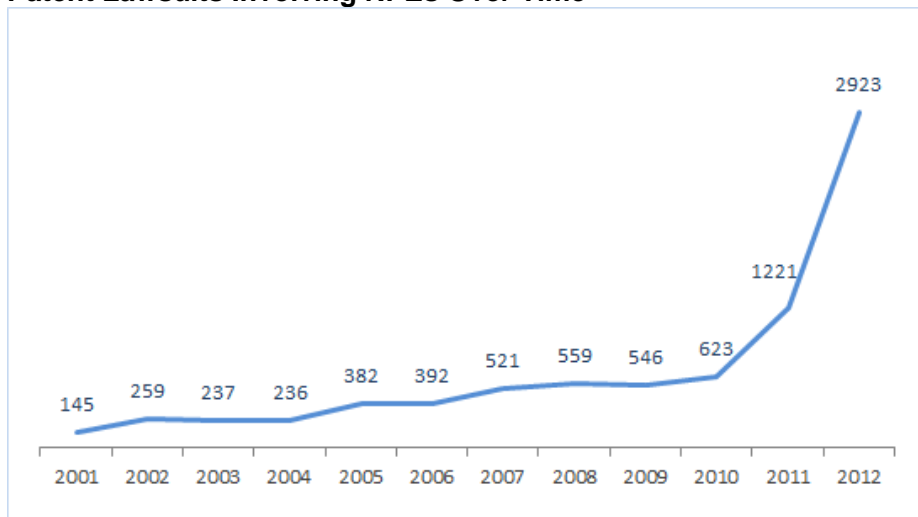


Source: PatentFreedom © 2013. Data captured as of January 18, 2013.

See [notes on methodology](#). Please read our [permissions policy](#) for use or citation of this data.

The number of NPE litigations has also increased significantly during this period, though at least part of the steep increase in 2011-2012 results from changes in joinder provisions that have come into effect with the America Invents Act.

## Patent Lawsuits Involving NPEs Over Time

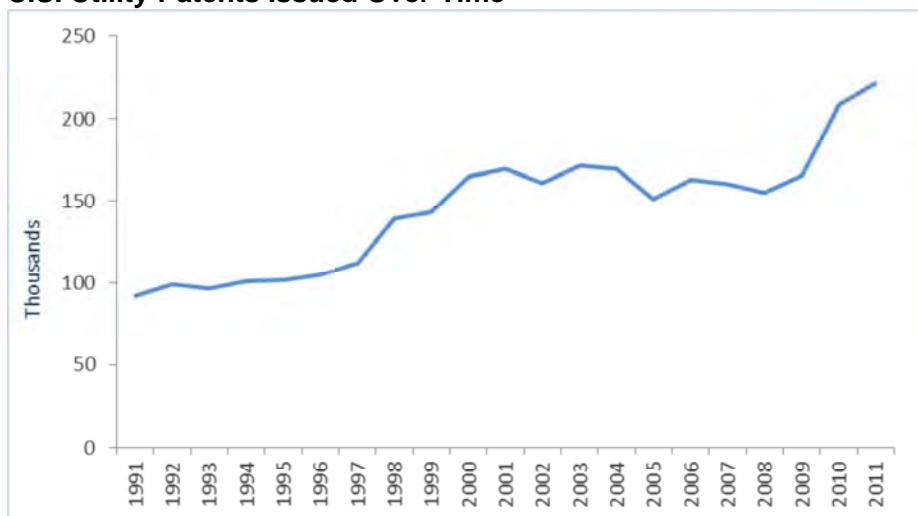


Source: PatentFreedom © 2013. Data captured as of January 18, 2013.

See [notes on methodology](#). Please read our [permissions policy](#) for use or citation of this data.

There are undoubtedly a number of causes of the increase in NPE litigation in recent years, including the growth in a secondary market for patents. While our crystal ball is probably no more reliable than others, the continued rise in patents issued by the USPTO over the last few decades suggests that significant levels of patent enforcement by NPEs is likely to continue for the foreseeable future. (Ironically, much of this increase can be attributed to operating companies seeking to build patent portfolios to enable counter-claims against patent assertions from other operating companies.)

## U.S. Utility Patents Issued Over Time



Source: PatentFreedom © 2013.

## [Subscriptions](#)

- [For Companies](#)
- [For Law Firms](#)
- [Summary Statistics](#)
- [Virtual Tour](#)
- [Testimonials](#)

## [Professional Services](#)

## Exhibit I. Selected balanced works on NPEs that were available prior to the PAE Report's release

- (1) David L. Schwartz, and Jay P. Kesan, "Analyzing the Role of Non-Practicing Entities in the Patent System," Illinois Public Law and Legal Theory Research Paper No. 13-01 (July 25, 2012) (critically reviewing the Bessen & Meurer study on NPEs, addressing its failures in transparency, and its objectivity due to the biased sample, the lack of a baseline to compare the purported "costs," and the lack of accounting for small business patentees).  
At <http://academic.reed.edu/economics/parker/f12/354/brown/Schwartz.pdf>.  
A revision of this paper was later published in 2014.<sup>271</sup>
- (2) James F. McDonough, "The Myth of the Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy," 56 *Emory Law Journal*, 189 (2006) (Suggesting that NPEs are actually good for the patent system and that the emergence of patent dealers marks a stage in the natural evolution of the patent market. Documenting the role of NPEs in making the patent market more efficient by realigning market participant incentives, making patents more liquid, and clearing the patent market. Rebutting the common complaints that NPEs stunt innovation and spur unnecessary litigation).
- (3) Nathan Myhrvold, "Funding Eureka!" *The Big Idea*, *Harvard Business Review* (March, 2010) available at <http://i2ge.com/wp-content/uploads/2012/01/Funding-Eureka.pdf>. (NPEs create a market where patents can be efficiently bought, sold, or licensed through investment funds that manage the high risks by amassing portfolios of patents and packaging them to maximize their value. Some NPEs also provide services to help companies, universities, and solo inventors to develop and monetize their ideas).
- (4) Letter of Paul Ryan, CEO of Acacia Research Corp., in response to FTC Requests for Comments, Project No. P093900 "Evolving IP Marketplace" (May 13, 2009) available at: <http://www.ftc.gov/policy/public-comments/comment-540872-00048>. (Most large companies simply ignore small entity inventors' licensing overtures and use their patented technologies without payment, knowing that these small companies do not have the resources to enforce their patent rights. Acacia's role is to provide a licensing channel for these small companies.)
- (5) Gaétan De Rassenfosse, "How SMEs Exploit Their Intellectual Property Assets: Evidence From Survey Data," 39 *Small Business Economics*, 437-452, (2012) available at <http://ssrn.com/abstract=1726208>. (Licensing rate of small entities' patent portfolios in the U.S. is twice that of such companies' in Europe, indicating more efficient market for technology development in the U.S. than in Europe).

---

<sup>271</sup> David L. Schwartz and Jay P. Kesan, "Analyzing the Role of Non-Practicing Entities in the Patent System," 99 *Cornell Law Review*, 425-456 (2014). Available at SSRN: <http://ssrn.com/abstract=2117421>.

- (6) Sannu K. Shrestha, Note, Trolls or Market-Makers? An Empirical Analysis of Nonpracticing Entities, 110 *Colum. L. Rev.* 114, 119–31 (2010) (empirically finding that NPE patents rank higher than other litigated patents that share the same technological class in every value measure employed and that the success rate of NPEs in patent infringement litigation is quite similar to that of other litigants).
- (7) Damien Geradin, et al., Elves or Trolls? The Role of Nonpracticing Patent Owners in the Innovation Economy,” 21 *Indus. & Corp. Change* 73 (2011) (Patents in the hands of non-practicing entities can increase competition, increase innovation, lower downstream prices, and enhance consumer choice.)
- (8) Michael J. Mazzeo, Jonathan H. Ashtor, and Samantha Zyontz. “Do NPEs Matter? Non-Practicing Entities and Patent Litigation Outcomes,” 9 *Journal of Competition Law and Economics*, 879 (2013) (finding that PAEs are not obtaining “excessive” awards nor exploiting patents illegitimately, unless all patent suits are unjustified).
- (9) Frauke Rüter, *Patent Aggregating Companies. Their strategies, activities and options for producing companies*, Springer (2012) (empirically exploring the roles of patent aggregating NPEs, identifying their role beyond taking over patent enforcement risks by offering a wide range of patent utilization and portfolio leveraging opportunities for practicing entities).
- (10) Alberto Galasso, et al., Trading and Enforcing Patent Rights, 44 *Rand J. Econ.* 275, 276 (2013) (“The main focus of this article is to identify empirically the causal effect of trade on litigation, and to assess the relative importance of commercialization and enforcement gains from trading patent rights.”)
- (11) Timo Fischer and Joachim Henkel, “Patent Trolls on Markets for Technology – An Empirical Analysis of NPEs’ Patent Acquisitions,” 41 *Res. Pol.* 1519 (2012) (studying types of patents acquired by NPEs).
- (12) Julien Pénin, Strategic Uses of Patents in Markets for Technology: A Story of Fabless Firms, Brokers and Trolls, 84 *J. Econ. Behavior & Org.* 633, 634-635 (2012) (modeling role of patent brokers and acquisition of patents).
- (13) Michael Risch, “Patent Troll Myths,” 42 *Seton Hall L. Rev.* 457, 481-82 (2012) (finding that once external factors are considered, whether the plaintiff was an NPE or not was not statistically significant determinant of litigation outcome. Of course, NPEs made choices about who to sue and how many cases to bring. But non-NPEs who made similar choices faced similar odds of invalidation for the same choices).
- (14) Bonwoo Koo and Brian D. Wright, “Dynamic Effects of Patent Policy on Sequential Innovation, 19 *J. Econ. Mgmt. Strategy* 489, 500 (2010) (ex ante licensing hastens downstream innovations, especially where future innovation is costly).

- (15) Jiaqing "Jack" Lu, "The Economics and Controversies of Nonpracticing Entities (NPEs): How NPEs and Defensive Patent Aggregators Will Change License Market" *Les Nouvelles, the Journal of The Licensing Executives Society International*, (March and June 2012). Available at SSRN: <http://ssrn.com/abstract=1935524> (Just as VC boost the competition model by helping startups build up complementary assets for technology commercialization, NPE revitalize the cooperation model by building up complementary patents.)
- (16) Jiaqing "Jack" Lu, "The Myths and Facts of Patent Troll and Excessive Payment: Have Nonpracticing Entities (NPEs) Been Overcompensated?," 47 *Bus. Econ.* 239, 242 (2012). Available at <http://ssrn.com/abstract=1935545>. (Presenting an empirical study of royalty rates showing that NPEs do not obtain royalties that exceed those of product firms).
- (17) Mariko Sakakibara, "An Empirical Analysis of Pricing in Patent Licensing Contracts," 19 *Indus. & Corp. Change* 927, 939 (2010) (showing that nonpracticing research firms have less bargaining power than large firms, and any additional royalties are due to strength of technology licensed).
- (18) Henry Chesbrough, "Emerging Secondary Markets for Intellectual Property: US and Japan Comparisons." *National Center for Industrial Property Information and Training (INPIT)*, Tokyo (2006). Available at <http://www.inpit.go.jp/blob/katsuyo/pdf/download/H17esm-e.pdf> (Describes the rise of patent intermediaries that assist in the process of identification, negotiation, and transfer of patents, advancing the secondary market, and creating incentives for greater utilization of patents).
- (19) Frank Tietze and Cornelius Herstatt, "Intermediaries and Innovation: Why they emerge and how they facilitate IP transactions on the markets for technology." *Technology and Innovation Working Paper No. 59*. (2009). Available at <http://ssrn.com/abstract=2118078>
- (20) Frank Tietze, "A typology of technology market intermediaries," *Technology and Innovations Management Working Paper No. 60*. (2010). Available at SSRN: <http://ssrn.com/abstract=1846917>
- (21) Allen W. Wang, "Rise of the Patent Intermediaries," 25 *Berkeley Tech. L.J.* 159 (2010). Available at: <http://scholarship.law.berkeley.edu/btlj/vol25/iss1/7>
- (22) David L. Schwartz, "The Rise of Contingent Fee Representation in Patent Litigation," 64 *Alabama Law Review* 335 (2012). Available at <http://ssrn.com/abstract=1990651>.
- (23) Brian T. Yeh, "An Overview of the 'Patent Trolls' Debate," CRS Report R42668, (August 20, 2012). At <http://fas.org/sgp/crs/misc/R42668.pdf> .
- (24) John M. Golden, "Patent Trolls' and Patent Remedies." 85 *Tex. L. Rev.* 2111 (2007) (Cautions against categorically discriminating between patent holders based on their business model. Positive harm might result from the categorical restriction of access to injunctions based on a patent holder's business model).

- (25) John M. Golden, “Principles for Patent Remedies, 88 *Tex. L. Rev.* 505, 545 (2010) (“For small firms or independent inventors ..., patent rights might be the only effective means to obtain a return on investments in research and development.”)
- (26) Jaconda Wagner, “Patent Trolls and the High Cost of Litigation to Business and Start-Ups – a Myth?,” 45 *Md. B.J.* 12 (2012) (describing universities as NPEs and a trend toward enforcement actions against larger companies).
- (27) Ashby H. B. Monk, “The emerging market for intellectual property: drivers, restrainers, and implications,” 9 *Journal of Economic Geography* 469 (2009).
- (28) Raymond Millien, and Ron Laurie, “A summary of established & emerging IP business models.” In *Proceedings of the Sedona Conference*, Sedona, AZ, pp. 1-16. (2007) (describing NPEs as IP market innovators and highlighting the compelling economic justification for NPE entities to exist).
- (29) Ashish Arora & Robert P. Merges, Specialized Supply Firms, Property Rights, and Firm Boundaries, 13 *Indus. & Corp. Change* 451 (2004) (Strong IPRs encourage investments in specialized firms with strong ‘firm capabilities’ in the area of innovative input supply).
- (30) Robert P. Merges, A Transactional View of Property Rights, 20 *Berkeley Tech. L.J.* 1477 (2005).
- (31) Naomi R. Lamoreaux and Kenneth L. Sokoloff. “Intermediaries in the US Market for Technology, 1870-1920.” No. w9017. National Bureau of Economic Research, (2002).