COLUMBIA LAW REVIEW
SIDEBAR

VOL. 114 **MAY 15, 2014** **PAGES 51–69**

ON MASS PATENT AGGREGATORS

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Response to: Mark A. Lemley & A. Douglas Melamed, Missing the Forest for the Trolls, 113 Colum. L. Rev. 2117 (2013).

The debate about patent trolls is everywhere. From the op-ed pages of *The Wall Street Journal*[1] and *The New York Times*[2] to President Obama's Council of Economic Advisors[3] to Judge Richard Posner,[4] the nearly unanimous view appears to be that patent "trolls" are evil. The argument is that since patent trolls do not manufacture any products, they are merely siphoning money from the "true" innovative firms, the manufacturers.[5] This argument is exaggerated and overly simplistic. If the fail-

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1. See Charlotte R. Lane, Op-Ed., The International Trolling Commission, Wall St. J. (Oct. 7, 2013), http://online.wsj.com/news/articles/SB10001424127887323308504579083701201429502 (on file with the *Columbia Law Review*) (lamenting negative effect of patent trolls on patent system).

2. See Randall R. Rader, Colleen V. Chien & David Hricik, Making Patent Trolls Pay in Court, N.Y. Times (June 4, 2013), http://www.nytimes.com/2013/06/05/opinion/make-patent-trolls-pay-in-court.html (on file with the *Columbia Law Review*) ("[T]rolls (intellectual-property lawyers use less evocative terms like 'non-practicing entities' and 'patent-assertion entities') make money by threatening companies with expensive lawsuits and then using that cudgel, rather than the merits of a case, to extract a financial settlement.").

3. Exec. Office of the President, Patent Assertion and U.S. Innovation 2 (2013), available at http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf (on file with the *Columbia Law Review*) (noting patent trolls "have had a negative impact on innovation and economic growth").

4. Richard Posner, Patent Trolls, Becker-Posner Blog (July 21, 2013, 5:12 PM), http://www.becker-posner-blog.com/2013/07/patent-trollsposner.html (on file with the *Columbia Law Review*) ("It is extremely difficult to discern any possible social benefit from trolls, and extremely easy to discern substantial social costs.").

5. The argument is sometimes that trolls are defined only as noninnovators and are a subset of those who do not manufacture. However, almost all of the empirical evidence used in the debate about patent trolls assumes without basis that all non-manufacturing parties are noninnovators.

ure to manufacture products is the problem, it is curious that almost none of the proposed changes to the patent system require manufacture.[6] While there are patent holders who abuse and exploit the patent litigation system, there also are patent holders with meritorious claims who have been unfairly denied compensation. This is true for companies that both do and do not manufacture. The critics also lump together a wide variety of seemingly different actors, including individual inventors, failed startups, research and development companies, mass patent aggregators, and Wall Street speculators who buy a single patent for purposes of enforcement. The correct analysis of the costs and benefits of patent trolls is quite complicated, and far beyond the simple narrative based upon whether the owner of the patent manufactures products.

Lemley and Melamed's Article, *Missing the Forest for the Trolls*,[7] provides a refreshingly balanced and nuanced view of what Lemley and Melamed refer to as "patent trolls." With respect to the label, instead of "patent troll," this Essay uses the more neutral term "non-practicing entity," or "NPE" for short. In Lemley and Melamed's measured Article, they situate NPEs and aggregators within a sophisticated view of the patent litigation system. They even proceed to defend, at least partially, mass patent aggregators, a type of NPE that is almost universally vilified in the press. However, Lemley and Melamed omit many complexities that surround the acquisition and enforcement of patents by mass patent aggregators. Some of these complexities cut in favor of Lemley and Melamed's conclusions, but others do not. These complexities should be taken into account in any assessment of whether aggregators do more social and economic harm than good.

This Essay first highlights and underscores several of Lemley and Melamed's points. Then, Part II explains unappreciated complexities relating to mass patent aggregators, including both positive and negative contributions. Finally, Part III offers a broad view of the recent focus on increased enforcement of patents.

I. LEMLEY AND MELAMED'S VIEW ON THE PATENT ENFORCEMENT ECOSYSTEM

Lemley and Melamed offer numerous insightful observations about patent litigation and related licensing transactions. This Part first reflects upon their general views. It then pays special attention to Lemley and

6. Judge Posner comes the closest. He suggests a rule prohibiting enforcement of any patent "that was not reduced to practice within a specified time after the patent was granted." Posner, supra note 4. While "reduction to practice" is a term of art in patent law that merely requires that the inventor make one prototype of the invention, it seems likely that Judge Posner meant to require a more general working requirement.

7. Mark A. Lemley & A. Douglas Melamed, Missing the Forest for the Trolls, 113 Colum. L. Rev. 2117 (2013).

Melamed's discussion of mass patent aggregators, which are profiled in their typology of NPEs.

Academics have argued that cross-licenses or nonenforcement of patents between competitors is preferred, especially relative to cash settlements or judgments. More particularly, some argue that an assertion by an NPE, seeking money instead of a royalty-free cross-license, is somehow worse than an assertion by a competitor. The implicit rationale is that competitor suits resulting in cross-licensing arrangements are essentially free.[8] Lemley and Melamed respond that suits by both practicing and non-practicing entities may be equally costly. First, they explain that the distinction between cash payments via assertions and cross-licenses is almost entirely illusory.[9] Cross-licenses by competitors are not free; instead, there are costs of acquiring and maintaining the patents to be cross-licensed.[10] Furthermore, even if no money changes hands in a cross-license, both parties provide something of value.[11] In other words, if the patents had not been cross-licensed, then they could have been freely asserted and provided money to the owner. Thus, cross-licenses are not costless, and are not inherently superior to a monetary payment for a license.

To be sure, NPEs may be more aggressive in asserting their patents because they do not contemplate a long-term business relationship with the targets. Because NPEs have different reputational concerns and do not have a fear of a countersuit for infringement, they may assert a patent when an operating or manufacturing company would not.[12] Thus, on balance, NPEs may be more litigious—suing more parties and pursuing those parties in the litigation process more aggressively.

Lemley and Melamed are also right to attempt to distinguish between various types of NPEs. They identify three different NPE business models, which they refer to as "lottery-ticket" trolls, "bottom-feeder" trolls, and patent aggregators.[13] According to Lemley and Melamed, lottery-ticket trolls seek a huge judgment or settlement against an entrenched player in an industry with large sales, with the understanding that

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8. There seems to be no empirical evidence on the value of the cross-licenses. In fact, there is a dearth of empirical evidence about how frequently counterclaims for patent infringement arise in competitor litigation.

9. Lemley & Melamed, supra note 7, at 2130.

10. Id. ("In the first place, acquiring and maintaining patents to use in barter is costly, and it can be especially costly if the patents are purchased from others." (footnote omitted)).

11. Id. at 2132 ("[T]he analysis . . . is the same, even though the exchange of value among the parties includes something other than cash and patent rights.").

12. See id. at 2129 (noting "most common" complaint "is that patent assertions by trolls cannot be resolved or deterred by the prospect of counterassertions or business dealings").

13. Id. at 2126. Lemley and Melamed's NPE categories include only these three categories, and the use of somewhat inflammatory and negative language like "lottery-ticket" and "bottom-feeder" evinces some hostility toward NPEs in general.

the odds are usually stacked against the patent holder in litigation.[14] Bottom-feeder trolls seek quick settlements far below the expensive cost of patent litigation, which typically costs millions of dollars.[15] Aggregators assemble together many patents, often in the thousands, and license the patents as a portfolio.[16] Lemley and Melamed's typology is a useful start, and contains a subset of a typology this author previously set forth about patent contingent fee lawyers.[17]

But Lemley and Melamed's description of the ecosystem is incomplete. Basically, they argue that NPEs are either asserting long-shot patents (lottery-ticket),[18] bringing frivolous and extortionary claims (bottom-feeder), or have aggregated large numbers of patents together (mass aggregators). In reality, many NPE suits must fall somewhere in between their first two categories. There likely is a decent chunk, perhaps even a substantial majority, of NPE suits that have some legal merit. Furthermore, Lemley and Melamed's typology apparently combines all original owners of the patents (including failed startups and individual inventors) with speculators who acquire patents from others.[19] One needed refinement is to separate these disparate groups. This would allow evaluation of complaints made by some that NPEs do not return

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14. See id. (claiming lottery-ticket trolls are those "playing an uncertain shot at a big payout").

15. See id. (defining bottom-feeder trolls as those "interested in quick, low-value settlements for a variety of patents"); see also Am. Intellectual Prop. Law Ass'n, Report of the Economic Survey 34 (2013) (reporting median litigation costs of cases with more than $25 million at risk is $5.5 million).

16. See Lemley & Melamed, supra note 7, at 2126–27 (describing how patent aggregators "collect many patents" and then "demand royalties to license the portfolio and threaten to sue those that do not pay"). For an excellent discussion of aggregation, see generally Gideon Parchomovsky & R. Polk Wagner, Patent Portfolios, 154 U. Pa. L. Rev. 1 (2005).

17. David L. Schwartz, The Rise of Contingent Fee Representation in Patent Litigation, 64 Ala. L. Rev. 335, 357–64, 369–71, 374–76 (2012) [hereinafter Schwartz, Contingent Fee Representation] (referring to "'top' of the market" and "'bottom' of the market" lawyers who compete with patent aggregators).

18. Mark Lemley read a draft of this Essay. After reading it, he explained that the use of the phrase "lottery-ticket trolls" in their Article was not intended to refer to entities bringing cases with a small chance at succeeding on the merits. Rather, Lemley and Melamed intended that lottery-ticket trolls refer to NPEs seeking compensation from the jury beyond the fair value of the invention.

19. See Lemley & Melamed, supra note 7, at 2167–68 (determining while "[t]roll patents were usually once startup . . . patents," "[i]t is not the companies themselves that the law should care about, but rather their patents"); see also Michael Risch, Licensing Acquired Patents, Geo. Mason L. Rev. (forthcoming 2014) (manuscript at 1) [hereinafter Risch, Licensing Acquired Patents], available at http://ssrn.com/abstract=2366064 (on file with the *Columbia Law Review*) (arguing acquired patents are distinct from patents held by original inventor). But admittedly, separating original inventors from speculators is complicated. See, e.g., Michael Risch, Scratching My Head over the SHIELD Act, Madisonian.net (Mar. 10, 2013), http://madisonian.net/2013/03/10/scratching-my-head/ (on file with the *Columbia Law Review*) (noting, for instance, "many NPE patents are assigned to the NPE as the initial assignee").

sufficient money to the original inventors. The different types of suits and parties have differential impacts on the patent system.[20] For instance, NPE suits brought by original inventors may be quite dissimilar from lawsuits brought by speculators.

Lemley and Melamed correctly note that the line between operating companies and NPEs has diminished over time.[21] Patents have increasingly been seen as an asset capable of generating money. Lemley and Melamed believe that monetizing patents is not inherently wrong.[22] Over time, more and more entities have become interested in extracting value from their patents. Lemley and Melamed cite to evidence that practicing entities are ever more frequently entering into "privateering" transactions.[23] In such an arrangement, the operating company assigns some of its patents to an NPE, such as a mass aggregator, which then attempts to monetize them. A portion of the proceeds from the NPE's enforcement is returned to the operating company. The privateering arrangement permits the operating company to reap money from their patents' exploitation, without the financial and reputational costs from direct enforcement. Thus, NPEs, including mass aggregators, may in some cases be doing the bidding of practicing entities.

The most provocative contribution by Lemley and Melamed is about mass aggregators. These entities, which typically acquire numerous patents from discrete sources, have been heavily criticized, including in the popular press.[24] Lemley and Melamed note several reasons why aggrega-

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20. To be clear, this Essay concurs with Lemley and Melamed that nuisance suits—seeking damages far below the cost of defense and asserting patents that are likely invalid or have weak assertions of infringement—are unquestionably bad. The difficulty is in determining how often nuisance-value litigation occurs, in both NPE patent litigation and operating company patent litigation. Furthermore, policymakers must balance the benefits from substantial elimination of nuisance suits with concerns of dampening legitimate, meritorious lawsuits.

21. See Lemley & Melamed, supra note 7, at 2120–21 ("[P]racticing entities are increasingly engaging in 'patent privateering' . . . .").

22. See id. at 2150 ("[I]t is not clear that monetizing otherwise-ignored patents is itself a bad thing.").

23. See id. at 2137–38 (describing privateering as process whereby "product-producing companies . . . spin off patents or ally with trolls to target other firms with lawsuits"); see also Tom Ewing, Indirect Exploitation of Intellectual Property Rights by Corporations and Investors: IP Privateering and Modern Letters of Marque and Reprisal, 4 Hastings Sci. & Tech. L.J. 1, 5 (2012) (defining intellectual property privateering as assertion of those rights "by an entity (the privateer), typically in the form of an NPE, against a target company for the direct benefit of the privateer and the consequential benefit of a sponsor, where the consequential benefits are significantly greater than the direct benefits").

24. For example, National Public Radio aired a pair of hour-long stories on the popular show *This American Life*. This American Life: When Patents Attack!, NPR (July 22, 2011), available at http://www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack (transcript on file with the *Columbia Law Review*); This American Life: When Patents Attack . . . Part Two!, NPR (May 31, 2013), available at http://www.thisamericanlife.org/radio-archives/episode/496/when-patents-attack-part-two (transcript on file with

tion may be bad, but find a significant benefit. Aggregation reduces the number of entities with which a practicing entity must negotiate in order to properly clear a product it is manufacturing.[25] Lemley and Melamed argue that reducing the number of negotiations reduces the extent of royalty stacking.[26] In other words, the total payment by those needing licenses would be lower when negotiating with one large patent holder than when negotiating with numerous smaller patent holders. This argument, namely that mass aggregators have a large potential benefit, is contrary to the prevailing view among the press and commentators.[27]

II. ADDITIONAL COMPLEXITIES OF MASS AGGREGATORS

The role of mass aggregators in the patent system is more complex than as described in Lemley and Melamed's Article. Mass aggregators conduct business with owners of patents on the one hand, and potential licensees on the other. For both potential business partners, the considerable patent portfolios held by aggregators raise concerns. In addition, the size of the patent portfolio, its numerosity, causes distinct issues relevant in considering mass aggregators. Before jumping into a full discussion of aggregators, note that there is considerable heterogeneity among the various mass patent aggregators in the present marketplace. For instance, Intellectual Ventures frequently purchases patents outright.[28] Intellectual Ventures appears to be an exemplar of Lemley and Melamed's theoretical model because it purchases patents outright, then consolidates them in groups of similar technologies and attempts to monetize similar patents together.[29]

However, not all mass aggregators fit this model. Acacia Research Corporation, another mass aggregator specifically identified in Lemley and Melamed's Article,[30] is a publicly traded company that buys or exclu-

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the *Columbia Law Review*). The apparent "bad guy" on both shows was Intellectual Ventures, the largest patent aggregator.

25. Lemley & Melamed, supra note 7, at 2157.

26. Id. Royalty stacking refers to instances in which a product infringes on multiple patents. The manufacturer of the product must pay a royalty to each patent holder. These royalties add together or stack together, and in theory the stacked royalties are more than a manufacturer can afford to pay. See generally Mark A. Lemley & Carl Shapiro, Patent Holdup and Royalty Stacking, 85 Tex. L. Rev. 1991, 1993 (2007). This Essay takes no position on whether there is solid empirical support for the royalty stacking theory.

27. Cf. Michael Risch, Patent Portfolios as Securities, 63 Duke L.J. 89, 96 (2013) (arguing popular criticism of patent aggregation has shortcomings).

28. For an in-depth account of Intellectual Ventures, see generally Tom Ewing & Robin Feldman, The Giants Among Us, Stan. Tech. L. Rev., Jan. 9, 2012, at 1, http://stlr.stanford.edu/pdf/feldman-giants-among-us.pdf (on file with the *Columbia Law Review*).

29. Intellectual Ventures permits some licensees to invest in its portfolio of patents, with the ability to share in future licensing revenues obtained from others. Cf. id. at 8 (noting Intellectual Ventures allows universities to invest in exchange for licenses). This Essay does not consider the ramifications of this investment option.

30. Lemley & Melamed, supra note 7, at 2154.

sively licenses patents from inventors and patent owners.[31] Acacia accepts responsibility for licensing and enforcement of the patent portfolio, and frequently splits profits (after deduction of costs, including attorney fees) fifty-fifty with the original inventors.[32] Patent portfolios are segregated into separate corporate entities according to the original owner. The patents of each entity are licensed separately. Acacia's model is different from Lemley and Melamed's "one-stop shopping" view of a mass patent aggregator. Differences among the various aggregators may matter for Lemley and Melamed's arguments. For instance, if the aggregator separately licenses patent portfolios based on the original owner, the reduction in transaction costs is unlikely to occur. For the purposes of this Essay, the hypothetical aggregator discussed below owns a large number of patents and is driven entirely by maximizing the monetary rewards from its patents.[33]

Even if Lemley and Melamed's assertion that a single negotiation is likely to lead to a more efficient transaction than a series of transactions is true, the role of mass patent aggregators is complex and should be carefully considered on several different layers or interfaces. One interface exists between would-be licensees on the one hand, and aggregators on the other hand. A second interface operates between the original patent owners and the mass aggregators. For each interface, there are special concerns implicated by mass patent aggregators related to the sheer number of patents held by these entities. It is unclear which of these interfaces should be focused on—perhaps both—and how to measure the potential benefits and costs of these complexities. The costs and benefits of these complexities must be weighed, in addition to the theoretical benefit of mass patent aggregators that Lemley and Melamed posit.

A. *Interface Between Mass Patent Aggregators and Potential Licensees*

There is heterogeneity among those with whom mass patent aggregators conduct business. Mass patent aggregators directly interact with potential licensees. Lemley and Melamed assume that aggregators approach very sizable companies.[34] The aggregator requests payment of a large fee in exchange for licensing the rights to use its patents. The

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31. See About Us, Acacia Research Corp., http://acaciaresearch.com/about-us/ (on file with the *Columbia Law Review*) (last visited Feb. 9, 2014) (explaining role as intermediary in patent market).

32. Jack Ellis, A Game of Scale, Intell. Asset Mag., July/Aug. 2012, at 5 (noting Acacia's fifty-fifty revenue share model).

33. In the world of NPEs, there are currently many different forms. Under economic theory, if one form of organization is more efficient than all others, then it likely will succeed in the marketplace. Thus, it is unclear whether the market will have such diversity in the long term.

34. Lemley & Melamed, supra note 7, at 2161 (using Apple, Microsoft, Android, and Blackberry in hypothetical).

approached large companies are frequently the major players in an industry. The proposed fee for licensing the entire portfolio of patents may be quite large, but it is important to remember that the companies sought out are large as well. For these large companies, one-stop shopping of most necessary patent rights may have some benefits. While the costs of the license may be high, the accompanying reduction in the transaction costs may be equally important.

The calculus becomes perhaps less favorable to the licensee if the aggregator approaches smaller members of the industry, which Lemley and Melamed do not address. Anecdotally, it appears that aggregators currently focus on the biggest companies. However, as the market matures, there are reasons to think that mass patent aggregators will naturally expand to eventually reach smaller companies. Indeed, large incumbents may insist that the patents be enforced broadly against everyone else in the market as a condition of accepting a license.[35] Aggregators have not yet asserted their patents against smaller companies as common practice, but the market may not have fully matured. Broader enforcement means licensing demands against smaller companies. Even putting aside this pressure from licensees, aggregators will desire to maximize revenues by licensing all players in an industry, at least once the industry respects the relevant patents. But what will happen if aggregators move down the hierarchy of companies and eventually attempt to license new entrants into an established market?

New entrants would be particularly disadvantaged by mass patent aggregators. For new entrants, the aggregated licensing fee may be prohibitive and any reduction in transaction fees would be less important than the possibility of a large licensing fee.[36] The new entrant may not need a license to the full portfolio—because the new entrant does not offer as wide a range of products—yet the complete portfolio may only be licensed as a whole. Thus, mass patent aggregators may be vehicles that favor established players over upstarts. The aggregators may also hold a sufficiently diverse set of patents to foreclose reasonable alternative designs to new entrants. Currently, the concern regarding new entrants is only hypothetical, since the market has not yet matured. It is possible that aggregators will offer entrants lower licensing prices or the ability to license only a subset of the portfolio. These concerns also should be balanced with the concern that large industry incumbents may directly sue new entrants for infringement, as discussed in Part II.C below.

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35. Risch, Licensing Acquired Patents**,** supra note 19 (manuscript at 32) ("[I]ndustry incumbents might create new and better standards for the future.").

36. Admittedly, new entrants often cannot devote their scarce resources to defending a case. They often become very emotionally involved in the lawsuit, making it difficult to approach settlement rationally.

Moving on from the distinction between new entrants and established players, there are reasons beyond those proffered by Lemley and Melamed that support the view that mass patent aggregators are beneficial for the industry to be licensed. To take one example, mass patent aggregators are likely to be better at valuing portfolios and negotiating transactions. Their substantial experience valuing thousands of patents has improved their sophisticated methods. Aggregators may have quantitative and computerized methods of determining the appropriate value of a patent or a patent portfolio. Moreover, there are several different mass aggregators competing for patent portfolios; these competitors separately value the assets.[37] This competition should serve as a useful check on the accuracy of the valuations. Further, aggregators have substantial experience and skills in negotiating agreements relating to purchasing and licensing patents. Accordingly, they may be desirable licensors and good potential business partners, at least from the perspective of the ability to successfully close a deal.

For a moment, consider an alternative to aggregation. Take an individual inventor patent holder. Individual inventors are highly likely to be inexperienced with negotiating license agreements. In some circumstances, individual inventors may be more likely to be irrational or unreasonably optimistic in their view of the value of their invention.[38] Part of this may be due to the creativity effect, a theory that contends that creators of intellectual property irrationally overvalue their own work.[39] Individual inventors who fail at commercializing the patent may also just be different; the reason that they do not have a job with a company may be because they have idiosyncratic views and deficient interpersonal skills.[40]

Thus, aggregators may be preferable if the choice is between an aggregator and an individual inventor. The reason is that the aggregator may be a more professional and rational negotiator, at least on average.[41]

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37. See Alberto Galasso et al., Trading and Enforcing Patent Rights, 44 RAND J. Econ. 275, 305 (2013) (concluding patent transactions "promote the emergence of efficient market structures"); cf. Risch, Licensing Acquired Patents, supra note 19 (manuscript at 29–32) (describing competition in acquired patent licensing market).

38. See, e.g., Michael J. Mazzeo, Jonathan Hillel & Samantha Zyontz, Excessive or Unpredictable? An Empirical Analysis of Patent Infringement Awards 41 (June 17, 2011) (unpublished manuscript), available at http://ssrn.com/abstract=1765891 (on file with the *Columbia Law Review*) (reporting individual inventors' win rate at trial is lowest of any group of patentees, suggesting individual inventors settle weak cases less often than other patent holders or initiate lawsuits with weaker claims).

39. See generally Christopher Buccafusco & Christopher Jon Sprigman, The Creativity Effect, 78 U. Chi. L. Rev. 31, 40 (2011) (studying painters and finding "creators seem to value their works substantially more than do potential buyers or mere owners").

40. A counterargument is that an individual inventor may find licensing or selling her patent to be more profitable than enforcing it via litigation. The license or sale may be a better deal for the individual inventor because of the high litigation transaction costs, which may swallow any value of the patent.

41. Obviously, there are more and less rational players in all types of entities. This Essay does not mean to say that all or even most individual inventors are irrational. Some

But this leads to the question: Where does the aggregator obtain its patents? Here, Lemley and Melamed correctly note that the market is rapidly evolving.[42] To be sure, aggregators purchase many patents from individual inventors and failed companies. However, it appears that many types of entities are considering selling patents to an aggregator or otherwise permitting an aggregator to enforce their patents.[43] For instance, some universities have recently sold patents to Intellectual Ventures.[44] Furthermore, many operating companies have or are actively considering selling patents to an NPE including a mass aggregator. These companies frequently receive a "back-end" deal, in which a percentage of any enforcement campaign is returned to the original patent holder.[45]

If aggregators are purchasing patents from otherwise less rational, one-off enforcers, then aggregators' potential benefits are highest, at least from the perspective of potential licensees (accused infringers). In other words, if aggregators are purchasing patents from individual inventors or failed startups that otherwise would enforce the patents less rationally, then aggregators may be good because aggregators may be more rational.[46] If, however, aggregators are purchasing and consolidating patents from a variety of sources, including from operating companies, then the benefits are less clear. But even if the patents were acquired from less economically rational parties, one must balance this fact against the possibility that these patents may have been worthless and unenforced if held by the individual inventor or failed startup.[47] Determining the net effect is difficult.

Furthermore, with respect to the aggregator-licensee interface, licensees may prefer aggregators to one-off NPEs because aggregators may behave better. To understand this more fully, one must consider that an NPE may be established solely for the purposes of enforcing a patent or small portfolio. The holding company is willing to be extremely aggressive because its only purpose is to maximize the monies recovered. The

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of the most important innovations in history have arisen from individual inventors, and this Essay does not mean to denigrate all of them.

42. Lemley & Melamed, supra note 7, at 2126–27 (describing development of new business models in patent market).

43. For a survey of where the most litigious patent holders obtained their patents, see Michael Risch, Patent Troll Myths, 42 Seton Hall L. Rev. 457, 484–90 (2012) [hereinafter Risch, Patent Troll Myths] (studying sources of patents enforced by NPEs).

44. Heidi Ledford, Universities Struggle to Make Patents Pay, 501 Nature 471, 471 (2013). One study found that Intellectual Ventures purchased patents from various sources, including 36.5% from small and medium enterprises and 25.7% from individual inventors. Ewing & Feldman, supra note 28, at 7 n.33.

45. Ewing, supra note 23, at 54.

46. See, e.g., Risch, Patent Troll Myths, supra note 43, at 495–96 tbl.6 (reporting 29.68% of patents from most litigious NPEs were acquired from individual inventors and 14.70% from companies started by individual inventors).

47. To be sure, these patents may be just tag-along assets in an aggregator license that do not drive value or affect price.

holding company may be tempted to overreach, enforcing against entities that have strong noninfringement positions with the hope for a marginal settlement. Holding companies may even find it economically rational to settle for nuisance value settlements as long as the total settlement amounts received from all alleged infringers exceeds the cost of litigation to the holding company and the cost to acquire the patents. Patent mass aggregators, in contrast, have reputational concerns that would dampen overaggressive enforcement. While aggregators are interested in maximizing their return on a patent, they also have another desire: to potentially license other patents or portfolios to the same party later. By enforcing weaker patents, the target may view the aggregator's patent portfolio as a whole to be weak. Hence, because the aggregator is a repeat player in the market, it is more affected by reputational concerns than other NPEs, notwithstanding anecdotal stories to the contrary.

In sum, aggregators may benefit large company licensees, especially when the aggregated patents were from individual inventors who may be less rational in negotiations. On the other hand, these benefits may not extend if the enforcement is expanded to cover new entrants, or if the original owner would efficiently and rationally negotiate a fair license agreement for the patent. Lemley and Melamed's Article does not distinguish between the various sources for aggregator patents nor the various targets of aggregator assertion.

B. *Interface Between Mass Patent Aggregators and Original Inventors*

The role of mass patent aggregators should also be considered in relation to how they compensate the original inventors of the patents. This concern is distinct from efficiency for accused infringers (which is covered by the first interface described in Part II.A). Almost by definition, mass patent aggregators acquire all of their patents rather than invent anything themselves. As previously discussed, mass patent aggregators buy patents from a variety of sources. Society may have particular concerns about the way in which mass patent aggregators interact with some of those sources, more particularly, those inventors who are shut out of the market and receive no direct compensation from commercialization.[48] For instance, society may be concerned with whether these interactions are fair and whether they lead to proper incentives on the part of both parties.

In fact, some have expressed the concern that NPEs are bad because they do not return sufficient capital to the inventor. While hard data are lacking, if the assertion is true, then one possible inference is that the patent incentive is failing. Under this view, the patent incentive is supposed to reward the inventor, not the middleman. If the inventor receives what amounts to pennies on the dollar while the aggregator

48. Aggregators acquire some of their patents from operating companies too.

receives the majority of the return, then the patent incentives would be underfunded or improperly distributed.[49] To be sure, there is substantial diversity in how aggregators arrange for patent acquisition, which leads to differences in how inventors are paid. Some aggregators primarily purchase the patents outright, while others license the patents and split returns fifty-fifty with the inventor. Splitting returns with the original inventor is most likely to ensure that there is not a huge surplus to the aggregator, as long as the portion of the returns provided to the original inventor is reasonable. But it also makes the return to the original inventor dependent upon the success of future licensing efforts. Also, if the patent is combined into a larger portfolio, there is the always-sticky question of allocating licensing fees among various patents, which may require accountants or other financial professionals.

Against this concern that the inventor is not adequately compensated, one must consider what baseline to use for comparison. One logical baseline is what the world looked like for inventors in the pre-NPE era. Until recently, individual inventors and small companies were largely excluded from the patent system.[50] The only way to enforce a patent was to pay a law firm hundreds of thousands or millions of dollars in legal fees, in addition to having to incur expert fees. This made patent enforcement unaffordable for all but the richest of companies. Thus, small inventors were largely uncompensated for their inventions.

Recently, small companies and individual inventors have gained options to enforce their patents. Importantly, lawyers are willing to represent patent holders on a contingent fee basis.[51] Instead of having to pay upfront for legal fees, the lawyers are willing to work in exchange for a percentage of the recovery. This has permitted smaller players to directly monetize their own patents.[52] Separately, a nascent market for alternative litigation finance—loans tied to the outcome of a lawsuit—is developing,

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49. This analysis would not hold if one believes the prospect theory of patenting, or some other view that incentives aid distribution. See generally Edmund W. Kitch, The Nature and Function of the Patent System, 20 J.L. & Econ. 265, 265–66 (1977) (explaining prospect theory).

50. Hearsay Culture: Show #188, Ctr. for Internet & Soc'y 26:00 (July 10, 2013), http://cyberlaw.stanford.edu/podcasts/20130708-Levin-188-Epstein.mp3 (on file with the *Columbia Law Review*) (noting in 1980s patents held by small companies were worth nothing because operating companies would never license).

51. Schwartz, Contingent Fee Representation, supra note 17, at 337–40 (discussing emergence of contingent fee litigation in patents).

52. One remaining issue is how to finance the costs (as distinguished from the fees) of litigation. Many contingent lawyers will not cover the costs, requiring the small company or individual inventor to have several hundred thousand dollars on hand, or to borrow this money. Id. at 360 & n.138. Because of the cost issue, there is still an impediment preventing individuals and small businesses from having full access to the patent litigation system.

offering small patent holders another opportunity to litigate themselves.[53]

With that background, one should ask: How much is the small inventor receiving from the aggregator in exchange for her patents? Obviously it is more than nothing, which is how much the individual had before. It also is frequently an upfront payment, removing the uncertainty and the delay present in litigation. The inventor also has the option of declining the offer. But is the payment sufficient? And should society even care? Perhaps it should not care. In other contexts, such as in employment relationships, society is content to let the market decide the fairness of compensation for inventions.[54] But perhaps in this context society should care, because if the aggregator pockets all of the money, then the policy of promoting innovation is arguably not met. Whether accused infringers can more easily clear rights is beside the point. If the goal is to maximize the returns to the small inventors, then perhaps society should encourage them to shop around, evaluating whether to enforce their patents on their own, via contingent fee relationships or otherwise, or sell to an aggregator. In some situations, not all options will be viable. And, of course, there is the threshold question of whether small inventors can rationally make such a choice.[55] But even if it is difficult for many small inventors to correctly choose the best option, there are few market-based solutions. Risk preferences should also not be overlooked. Some small inventors would prefer less money with less risk, while others would enjoy more risk with a higher potential reward.

Finally, turning back to the negotiations for accused infringers, consider the patents that aggregators elect to purchase. The aggregators' goal, like any for-profit business, is to buy low and sell high. When a small inventor is willing to sell a patent or portfolio for far below its actual value, then the aggregator will purchase the patent. However, when the small inventor overvalues its patents, no deal will be consummated. Lemley and Melamed argue that aggregation of patents may reduce the alleged royalty stacking problem. But since aggregators likely hold only a

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53. Steven Garber, Alternative Litigation Financing in the United States: Issues, Knowns, and Unknowns 37 (2010) ("[Alternative litigation financing] can be a fairly close substitute for selling the patent to an NPE.").

54. Other countries, such as Germany, France, the United Kingdom, and Japan, override the market by recognizing statutory rights for remuneration for employee inventions. See, e.g., Christopher Heath, Harmonizing Scope and Allocation of Patent Rights in Europe—Towards a New European Patent Law, 6 Marq. Intell. Prop. L. Rev. 11, 18–26 (2002) (discussing allocation of rights for employee invention across Europe). In the United States, there is no similar policy or statute.

55. Individual inventors still make up a distinct portion of patent infringement litigation. See Christopher A. Cotropia, Jay P. Kesan & David L. Schwartz, Unpacking Patent Assertion Entities (PAEs), 99 Minn. L. Rev. (forthcoming 2014) (manuscript at 20), available at http://ssrn.com/abstract=2346381 (on file with the *Columbia Law Review*) (observing individual inventors brought approximately 30.4% of the unique non-practicing entity patent holders who litigated cases in 2012).

subset of patents, namely those that the original inventor undervalued (or accurately valued), then it will not hold all of the potentially troublesome patents needed by a manufacturer. And the missing patents from the aggregators' stable may be precisely the ones that cause the alleged royalty stacking problem in the first instance.[56]

C. *The Potential Numerosity Problem*

Another concern caused by mass patent aggregators is what this Essay terms the "numerosity problem," which Lemley and Melamed do not expressly identify.[57] The numerosity problem is that owning a huge patent portfolio may automatically transform aggregators into giants who are perceived as (and may operate as) bullies.[58] More precisely, whenever an entity owns a large number of patents in a given field, it creates special problems because of the expense for would-be licensees to investigate.[59] This is particularly true when a single patent portfolio includes all of the patents relevant to a given industry, rather than discrete portfolios limited to patents obtained from a single source. Obviously one cannot place a precise threshold on the number of patents held by one entity before that entity becomes a "giant." However, once that uncertain threshold number of patents is passed, it is financially impossible for potential licensees to meaningfully evaluate the entire portfolio before deciding whether to license. It would cost millions of dollars to have an attorney read and analyze the patents. The sheer number of patents also makes it next to impossible for an accused infringer to challenge the portfolio.

There are reasons to think that the patent portfolio held by mass aggregators is strong. They have sophisticated managers that evaluate

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56. A reasonable counterargument is that, despite some missing patents, the royalty stacking issue is substantially diminished. At this point, there is no empirical data on whether the argument or counterargument is correct.

57. Lemley and Melamed, in a section of their paper on why operating companies are similar to NPEs, briefly mention the concern that large numbers of patents held by one entity may "overwhelm" alleged infringers. Lemley & Melamed, supra note 7, at 2153. A substantially more in-depth discussion is warranted.

58. Aggregators are not the only potential bullies. Large operating companies can use their patent portfolios to be bullies. See generally Ted Sichelman, The Vonage Trilogy: A Case Study in "Patent Bullying," Notre Dame L. Rev. (forthcoming 2014), available at http://ssrn.com/abstract=1856703 (on file with the *Columbia Law Review*) (examining patent infringement suits filed by three large companies against Vonage). For instance, Barnes & Noble has complained about Microsoft's patent assertions. Jay Greene, Barnes & Noble Wants DOJ Probe into Microsoft Patent Tactics, CNET (Nov. 8, 2011, 12:04 PM), http://news.cnet.com/8301-10805_3-57320800-75/barnes-noble-wants-doj-probe-into-microsoft-patent-tactics/ (on file with the *Columbia Law Review*).

59. For a discussion of a similar concern in patent cross-licenses, see Colleen V. Chien, From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System, 62 Hastings L.J. 297, 307–08 (2010) [hereinafter Chien, Arms Race].

and purchase patents.[60] Even if the patents in the portfolio are strong, aggregators and would-be licensees will always disagree over their value. The value of a patent is based upon the likelihood a patent is valid, infringed, and enforceable, as well as the quantum of recoverable damages and the likelihood of meaningful injunctive relief. It is too expensive to litigate all of the patents, and it is probably too expensive to investigate and determine the validity, infringement, and damages (if any) of the patents.[61] Because of this, the aggregator and accused infringer in theory evaluate a subset of the portfolio and use this as a proxy for the value of the entire portfolio. Courts theoretically can use this proxy method too.[62]

If, on the other hand, many of the patents held by aggregators are weak,[63] then the numerosity problem could shield portfolios held by large aggregators from appropriate scrutiny. Take for instance a portfolio of 5,000 patents of which ninety-five percent of the patents are likely invalid. To have a patent lawyer read the 5,000 patents would cost millions of dollars and potentially require years of time. It would be nearly impossible for anyone to determine which patents have any legitimate value. Instead, a rational company would, of course, settle just to avoid the investigative costs. There are no obvious solutions to the numerosity problem.

Now, to be fair, aggregators can make the job of evaluating patents easier. They can provide information such as claim charts to accused infringers.[64] And aggregator litigation is not necessarily bad. Aggregators must occasionally enforce at least their strong patents against holdouts. Indeed, if an aggregator licensed much of an industry but one participant refused to take a license, all of the licensed parties would be at a

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60. Some may contend that sophistication of management could cut another way; it could mean that the managers are sophisticated enough to aggregate a slew of worthless patents that are impossible to evaluate due to the bulk of the portfolio. Most likely mass aggregators attempt to combine strong patents, but the alternative argument cannot be ruled out.

61. The concern about numerosity does not apply to all types of patent aggregators. Companies like Acacia that have small subsidiaries with a few patents are quite different from Intellectual Ventures, with a huge portfolio within a certain technology.

62. For a further discussion of proxy patent litigation, see David Schwartz, Proxy Patent Litigation, Concurring Opinions (May 27, 2013), http://www.concurringopinions.com/archives/2013/05/proxy-patent-litigation.html (on file with the *Columbia Law Review*); David Schwartz, Proxy Patent Litigation II, Concurring Opinions (May 29, 2013), http://www.concurringopinions.com/archives/2013/05/proxy-patent-litigation-ii.html (on file with the *Columbia Law Review*).

63. It is unclear whether the patents held by an aggregator are weak, although some contend they are. See, e.g., Schwartz, Contingent Fee Representation, supra note 17, at 375 (quoting contingent lawyer as saying aggregators buy "cheap patents that are worth money solely because of the litigation cost extortion" (internal quotation marks omitted)).

64. Since the aggregator is in the business of encouraging companies to agree to take a license, there is a market incentive for the aggregator to demonstrate the portfolio's value to sophisticated parties. Providing a detailed claim chart is one way to do so.

competitive disadvantage. That is because they would have paid for a license, while the holdout would not have. Thus, aggregators, like all patent holders, sometimes must litigate.

But the question is whether the patents the aggregator licenses or enforces are patents that otherwise would have been enforced. If these patents have no value outside of a large portfolio, then society may be better off without their enforcement. The patents may have languished elsewhere; thus, an aggregator can make money from an otherwise worthless patent. Lemley and Melamed mention this concern in passing, but it should be more carefully considered.

III. ON INCREASED PATENT ENFORCEMENT MORE GENERALLY

This Essay now turns to a theoretical issue about NPEs and increased patent enforcement more generally. Lemley and Melamed's Article assumes that the enforcement of patents, both by mass aggregators and other NPEs, has recently increased. Their Article, however, does not directly confront whether increased enforcement in general is desirable. It has been previously argued that instead of focusing on the identity of the patent holder, namely whether or not the patent holder is an NPE, the focus should be on the merits of the underlying lawsuit.[65] But a question worth considering is, on a theoretical level, whether all patent enforcement is socially good when the case is meritorious. There is a perception that patents have clearly become more valuable in the last twenty years. Many businesses and individuals today are seeking to monetize their patents, including, if necessary, via enforcement.[66] This enforcement includes patents that years ago would have died on the vine.[67] Causes include the availability of contingent litigation counsel, high-profile news reports relating to patent values, and the emergence of NPEs.[68] The raw number of patent infringement lawsuits substantially increased, from around 1,250 in 1990 to around 2,750 in the mid-2000s.[69] For all these reasons, it seems more likely that a patent will be enforced

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65. See, e.g., David L. Schwartz & Jay P. Kesan, Analyzing the Role of Non-Practicing Entities in the Patent System, 99 Cornell L. Rev. 425, 456 (2014) (arguing patent scholars should focus on whether patent claims are valid, enforceable, and infringed).

66. See Schwartz, Contingent Fee Representation, supra note 17, at 378–81 ("The demand from patent owners to extract value from their patents likely will continue to increase over time.").

67. Lemley & Melamed, supra note 7, at 2150 (referring in passing to these patents as "otherwise-ignored").

68. See Schwartz, Contingent Fee Representation, supra note 17, at 352–56 (explaining numerous changes to patent ecosystem following Federal Circuit's formation in 1982); see also Chien, Arms Race, supra note 59, at 322–31 (examining increase in offensive use of patents by practicing companies and non-practicing entities).

69. Jason Rantanen, Patent Suit Filings for 2010 Show a Slight Rise, Patently-O (Jan. 27, 2011), http://patentlyo.com/patent/2011/01/patent-suit-filings-for-2010-show-a-slight-raise.html (on file with the *Columbia Law Review*).

today than in previous decades. To be clear, there is no strong empirical evidence that this is true, and recent claims of an explosion of NPE litigation between 2010 and 2012 appear unfounded.[70] By some measures, the ratio of patent litigation to issued patents is within historical norms.[71] And it may be the case that more frequent assertion of patents is in fact due to infringement occurring more frequently today. But for purposes of discussion, this Essay—instead of evaluating whether enforcement has, in fact, increased—will assume (only for purposes of discussion) that patents are enforced more today than they were a decade or two ago. Lemley and Melamed say the increased enforcement is not clearly bad.[72]

At the margins, increased enforcement may be good. It may enhance the respect paid to intellectual property rights by companies. Without the specter of a court-ordered payment, very little voluntary licensing would occur. Thus, litigation is not inherently bad. But focusing only on the merits of the lawsuits has limits. This approach will not result in the proper societal level of litigation unless the patent laws are optimally calibrated. In other words, by falling back to the laws of infringement, validity, and enforceability, the approach assumes that the laws are properly tuned to result in innovation. One cannot say with certainty that they are.[73]

Separately, there are concerns about maximum enforcement of all valid and enforceable patent rights. Professor Rob Merges, in his important book *Justifying Intellectual Property*, talks about what he calls a "rights

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70. See Cotropia, Kesan & Schwartz, supra note 55 (manuscript at 28) ("Based on our data, there is no major difference in both the number of unique patentees and the number of alleged infringers from 2010 to 2012.").

71. See Brad Pedersen & Justin Woo, Patent Litigation: Too Much as Compared to What?, IPWatchdog (July 8, 2013, 9:25 AM), http://www.ipwatchdog.com/2013/07/08/patent-litigation-too-much-as-compared-to-what/id=42868/ (on file with the *Columbia Law Review*) ("Over the last 40 years the number of patent lawsuits filed in the US has stayed relatively constant as a percentage of patents issued."); see also B. Zorina Khan, Trolls and Other Patent Inventions: Economic History and the Patent Controversy in the Twenty-First Century 16 (Stanford Univ. Hoover Inst., Working Paper No. 13001, 2013), available at http://ssrn.com/abstract=2344853 (on file with the *Columbia Law Review*) (explaining "historical trend in litigation rates relative to patents granted clearly does not support claims that litigation in the past decade has 'exploded' above the long term norm" and stating patent litigation increase at end of twentieth century merely "comprised a return toward the long-term norm").

72. Lemley & Melamed, supra note 7, at 2121–22 (distinguishing classical model of patent system, designed to encourage innovation, from practical reality).

73. Many academics argue that the patent laws are defective. See generally James Bessen & Michael J. Meurer, Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk (2009) (examining problems including hidden patent claims, changes in scope over time, and high costs of searching); Dan L. Burk & Mark A. Lemley, Patent Crisis and How the Courts Can Solve It (2009) (arguing catch-all standards in current patent system create barriers to innovation).

cushion."[74] Professor Merges explains the cushion, or underenforcement zone, in terms of digital copyright. He says that copyright law works because of differences between the copyright laws on the books and the copyright laws as experienced by users of copyrighted works. In other words, rights holders do not pursue every single act of infringement; instead, they permit some minor copying, some remixes, etc., without suing.[75] And according to Professor Merges, this zone of underenforcement is part of the oil that keeps the copyright system properly lubricated and working.

Professor Merges's theory is not cleanly extendable to patents. Patents and copyrights are different in important ways relative to Professor Merges's analogy. To take a few, copyrights attach automatically to creative and original works fixed in a tangible medium. Patents are only intentionally obtained via the patent prosecution process. Furthermore, there is a fair use defense to copyright use, while patent law does not permit independent invention. Statutory damages also exist in copyright law and permit potentially large damages for seemingly small acts of infringement, while patent law has no analog. Without diminishing these concerns, this Essay puts them aside here to engage in an academic thought process.

Extending Professor Merges's zone theory to patents, it appears that the zone has substantially decreased in the last twenty years. More patents are being enforced. While the optimal level of patent enforcement is unclear, it is noteworthy that the zone appears to have shrunk. And, importantly, the shrinkage of underenforcement has been focused in a small number of industries. The information technology (IT) and consumer electronics industries have been hit hard by NPEs[76] and contingent cases, and the costs are borne by a discrete subpopulation in patent cases.[77]

There is, however, an alternative way to characterize the shrinkage of the zone of underenforcement in the IT and consumer electronics industries. It may be that the pre-NPE zone of underenforcement was largest in these industries. Despite the lack of solid empirical evidence, the zone of underenforcement may have been largely involuntary on the part of patent owners. While admittedly anecdotal, according to lore,

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74. Robert P. Merges, Justifying Intellectual Property 256–59 (2011).

75. Id. at 256–57.

76. See Colleen V. Chien, Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents, 87 N.C. L. Rev. 1571, 1608 (2009) (indicating data suggest "NPEs have focused more on high-tech than other inventions"); Schwartz, Contingent Fee Representation, supra note 17, at 359 (explaining "consumer electronics, online businesses, and medical devices were mentioned as industries well-suited to patent contingent practice" by interviewed attorneys).

77. See Cotropia, Kesan & Schwartz, supra note 55 (manuscript at 25–26) (finding operating companies file over 80% of cases in drugs and medical technology and under 30% of cases in computers and communications technology).

these industries intentionally ignored patents of others during their development of products, avoided patent searches and prelaunch patent clearance, and generally refused to license patents.[78] Thus, the zone was large in these industries—maybe too large. Perhaps the reduction in the zone is merely a correction that brings the industry more in line with others, such as the chemical industry and other mechanical industries. But is the current zone of underenforcement at the optimal level? It is hard to determine the optimal level. But changing the zone of underenforcement in a short time frame has, not surprisingly, generated a backlash against the patent system.[79] Now, the lore about the pre-NPE behavior in the IT industry may or may not be true. Regardless of one's beliefs, however, thinking about the zone may provide useful insights into the patent litigation system.

CONCLUSION

Lemley and Melamed's piece offers numerous insightful and important contributions. However, mass patent aggregators are much more complicated than Lemley and Melamed describe. The benefits and costs of these companies are both very important and worthy of careful consideration.

Lemley and Melamed are absolutely right about one more thing: The genie is out of the bottle on NPEs and increased patent enforcement. Many different companies are considering ways to monetize their patents. The discussion here and in academic articles may be just that: an academic discussion. The trend toward greater monetization of patents may occur regardless.

Preferred Citation: David L. Schwartz, *On Mass Patent Aggregators*, 114 COLUM. L. REV. SIDEBAR 51 (2014), http://www.columbialawreview.org/On-mass-patent-aggregators_Schwartz.

78. See Bharat N. Anand & Tarun Khanna, The Structure of Licensing Contracts, 48 J. Indus. Econ. 103, 114 (2000) ("[F]ewer than 6% of contracts in Computers and Electronics involve ex-ante technology transfers.").

79. For instance, many members of the IT industry recently wrote a letter urging Congress to provide relief from "patent abuse." Letter from Airlines for Am. et al. to Sen. Patrick J. Leahy, Chairman, Comm. on the Judiciary, et al. (Oct. 28, 2013), available at http://www.ccianet.org/wp-content/uploads/2013/10/Orgs-Letter-to-Congress-on-CBM.pdf (on file with the *Columbia Law Review*).