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EXPERT OPINION

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Framing the patent troll debate

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The patent troll debate has reached a fevered pitch in the USA. This editorial seeks to frame the debate by pointing out the lack of clarity in defining patent trolls and their allegedly harmful actions. It then frames the debate by asking currently unanswered questions: Where do troll patents come from? What are the effects of troll assertions? Will policy changes improve the system?

Keywords: licensing, litigation, monetization, NPE, patent assertion entities, patents, privateer, trolls

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1. Introduction

According to popular media accounts, patent trolls are the new bogeymen. They hide under the bridge to innovation, surprising all passersby while exacting tolls that drive up development and ultimately consumer costs. As with most stories designed to frighten, the patent troll story begins with a kernel of truth but has been embellished so much over time that rigorous analysis has given way to hype. To be fair, most academics studying the phenomenon acknowledge that the practice is legal, and merely designate certain activities as harmful or costly. But studies, especially those that haphazardly lump various patent owners into the troll category, are uncritically used by media and advocates imparting a moral judgment.

The 'patent troll' moniker has been used as a catch-all term that means 'any patent holder that asserts patents against someone who complains about it' [1]. Most often, the troll moniker includes companies that make no products and offer no services – so-called non-practicing entities (NPEs). Or, it might include only those that purchase patents and assert them – patent assertion entities. Or, it might include *anyone* who attempts to make money from patents without making a product, including individuals – patent monetization entities. Or, it might include companies that enforce patents on behalf of product making companies – privateers. Or, it might include companies that enforce patents they are not using – like Microsoft has been accused of by Barnes & Noble [2]. Or, it might even include companies that purchase patents, *make a product* and assert patents against competitors – as 1-800-CONTACTS has been accused of [3]. The only patent owner generally immune to the term is a manufacturing company that practices its own patents created by its own employees.

This definitional morass is a symptom of a bigger problem in the patent troll debate: a lack of analytical rigor that leads interested parties to talk past each other [4]. Systemic changes designed to eradicate harm will surely fail or cause more harm if no one can agree on who is harmful, why they are harmful or how much they are harmful. A lack of rigor will hamper changes in the system if they are targeted at who owns the patent rather than the behavior of the patent holder [5,6].

This editorial focuses on three issues to help frame the debate: i) Where do asserted patents come from? ii) What is the effect of patent assertion? iii) Will proposed system reforms be beneficial?

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2. Where do troll patents come from?

Virtually all economic analyses focus on who owns patents now (and why they do so), rather than who owned them when they were granted. There are a few exceptions. Fischer & Henkel found that NPE patents came from firms of various sizes, from small to very large [7]. My study of the most litigious NPEs found that a large percentage of patents came from individuals, some came from failed businesses, some came from small businesses and some came from large enterprises [8]. Other than analysis of patent privateers – which enforce patents of specific operating companies – further discussion or study of patent sourcing is virtually nonexistent.

But when patent policy and incentives to invest in research and development (R&D) are at stake, it matters where patents come from. If, for example, patents come from individuals, then we might need to take a hard look at how much we value individual patenting. If patents come from large product companies, we might consider why transferring the patent to a specialist should change the underlying nature of the patent right simply because cross-licensing is no longer available. If patents come from failed companies, we should consider whether payments back to those companies support incentives to invest and invent.

For example, some economic analysis assumes that once a company fails, any money obtained for that company's patents serves no purpose [9]. On the contrary, even if the potential for such returns did not affect R&D incentives in the first place (an untested claim), at least some funds get returned to investors and founders who can reinvest them in new inventive efforts. Furthermore, this theory argues that returns to inventors are low because the NPE retains most funds; but that study cites data that rely on the fuzzy NPE definition, lumping individual inventors (and their companies), research companies and even universities in with other NPEs that buy their patents [9]. These are parties inconsistent with the theory being tested. In reality, about 10% of patent plaintiffs (and about 20% of nonmanufacturing plaintiffs) are individuals and research companies that keep 100% of their after-cost returns [10]. Of course, there are many other types of nonmanufacturing plaintiffs to consider, but acknowledging the evidence would better frame the debate.

The studies of NPE costs do nothing to consider what would happen if companies who enforce patents without making a product were unable to do so. No one knows how much effect future patent enforcement has on investments and incentives. Even measuring after the fact returns to inventors – which has not been comprehensively or rigorously done – only tells part of the story, because it is the inventors' expectations, not what they actually receive, that makes a difference.

Where patents come from also affects policy considerations. Most patents asserted by those that do not manufacture (NPEs), for example, relate to software and other high-tech inventions [11]. There are few medical procedure and almost no pharmaceutical and biotechnological patents [8,10]. In other words, patent assertion affects different industries differently. Even IBM, large as it is, rarely gets sued by patent trolls. To be sure, software patents will be asserted against healthcare providers, and others might sue the occasional device manufacturer [12].

Pharmaceutical and biotech companies see relatively few such suits [10]. This means we should consider who files suit when they do. The prime NPE candidates in therapeutics, for example, are failed companies, individuals and pre-product university licensees, though there are also several patent buyer suits [10]. Understanding these sources may lead to different considerations of patent assertion in therapeutics than in other technology areas.

For example, a common belief is that NPE patent assertion is caused by too many and too unclear patents in computer software. This may be true: as the number of patents grows, so does the amount of litigation [13]. But the rate of litigation per capita has remained relatively stable over the last 200 years, with peaks at various times, including now [13]. More important, the current spike in litigation may be explained by new technologies rather than faulty patents. Lawsuits tend to peak with disruptive, widespread technology [13]. Furthermore, shifts in who brings patents may be explained by changes in large industrial R&D trends [14].

I do not mean to minimize the need to improve the patent system, eliminate bad patents, make patents more clear and so forth. But in framing the debate, we should consider how much of the current activities are based on growth in population and shifts in R&D spending versus how much is caused by problems in the system, to ensure that attempts to decrease the number of patents do not also decrease investment in invention and innovation.

3. What is the effect of patent troll assertion?

Given the somewhat unclear status of where troll patents come from, more analytical rigor is needed to determine the effect of patent assertion. Quite frankly, this is difficult in practice; no study has yet looked at – or even attempted to look at – all of the moving pieces [15]. This leads to an information shortage in the debate, because the effects can be both positive and negative [16]. For example, one study purports to calculate the cost of all troll litigations [17]. This study uses an expansive definition; it starts with the presumption that all NPE activities – including research companies like Qualcomm and InterDigital that spend millions of dollars on R&D each year – are harmful [18]. Further, the study does not provide the cost of litigation by manufacturing companies. Thus, this and similar studies ask that we do not consider the costs of litigation among competitors, like the nearly billion dollar judgment Apple secured against Samsung. What if it turns out that NPE litigation costs much less than competitive litigation? Would this imply we should to shift *more* activity to NPEs, rather than less?

I suspect the answer to that question is no. A leading theory is that NPEs obtain remedies that far exceed the value of the patents by suing inadvertent infringers who are locked in and face high design around costs, which may also reduce *ex ante* incentives to invest [19,20]. Indeed, some consider waiting until others infringe the defining feature of patent trolls [4,21].

Holdup as a harm theory is attractive, but there are real drawbacks. Theoretically, holdup models underestimate the amount of leverage that potential infringers have in a transaction, even after lock-in [22-25]. Empirically, studies have not confirmed bargaining power or pricing differentials [26,27]. Proscriptively, it gives incentives to manufacturers to hold out. The optimal allocation of companies seeking out patents and patentees seeking out licensees is unknown [21]. Further, current data cannot determine whether failure to license is due to inventors hiding the ball or infringers holding out. The truth is likely somewhere in between, and policy changes may affect that balance in unforeseen ways. Litigation is just the tip of the iceberg; if research firms could not enforce their patents, then it would likely be much more difficult to license them in a beneficial way [4,6].

My point is not that the holdup theory is wrong and that there is no harm. To be sure, there are many horror stories about patent trolls taking advantage of the unsuspecting to extract money beyond their due. My point is rather that the theory remains completely unchallenged by any rigorous analysis in policy debates; the opposing studies are simply not mentioned by anyone other than academics. My further point is that the litigation cost and holdup problems, to the extent they exist, are not limited to NPEs. There are plenty of similar horror stories of practicing companies doing the same thing, sometimes on an even greater scale. Attempts to tweak policy without considering the shortcomings of opposing research will continue to flail.

4. Will proposed system reforms be beneficial?

The previous two questions bear on the most important question: will proposed reforms be beneficial? The answer remains to be seen. On the one hand, anti-troll fervor has reached deafening levels, and threatened reforms might weaken the entire patent system. This is a problem for development areas that are much more sensitive to patent incentives and much less touched by patent trolls, like chemicals, pharmaceuticals and biotechnology. In other words, reforms meant to save the system might well harm it if policymakers are not careful.

For example, some proposals would allow any party with enough money to stop a litigation to challenge a patent in 'post grant review' whether or not there is any new basis to do so. With millions of dollars on the line, a few hundred thousand dollars to delay the inevitable is a rational expenditure. But such a plan would surely encourage game-playing and favor only the rich. It would mean that large companies would be entitled to a benefit that smaller competitors would not. More generally, the concern is that patent 'reform' is for incumbents, who are only too happy to squeeze out small competitors along with patent owners.

On the other hand, many proposed reforms are facially neutral, even if motivated by an anti-troll sentiment. For example, loser-always-pays mutual attorney fee shifting proposals (as opposed to fee shifting for NPEs only) have seen less opposition than might be expected. On the one hand, product makers want an opportunity to recover in frivolous cases. On the other hand, patent owners want an additional stick to use against infringers who refuse to license a valid patent. Mutual risk may increase the likelihood of reasonable settlements, though some theorists argue otherwise.

The problem of patent enforcement in the twenty-first century is a difficult one. The answers will never fit in the confines of this editorial space. Be skeptical of any account that claims they will.

Declaration of interest

The author states no conflict of interest and has received no payment in preparation of this manuscript

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