PATENT ASSERTION AND U.S. INNOVATION

Executive Office of the President

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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.*
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> - *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[1] 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

[1] 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 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.

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."

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,

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