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# Patent Wars and Their Impact on Innovation

A study on Technology and Mobile patent litigation

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# Patent Wars and Their Impact on Innovation

## A study on Technology and Mobile patent litigation

*“Alongside the impressive technological advances of the last two decades, they argue, a pall has descended: the marketplace for new ideas has been corrupted by software patents used as destructive weapons”*

*- Charles Duhigg and Steve Lohr, The New York Times*

This paper answers the question: “Has the current patent system become a barrier to innovation?”

To understand the answer to this question, one must evaluate three important topics:

- Recent developments in patent litigation and cross-lawsuits over the last years in the technology and mobile industries.
- The role of patents as weapons for large corporations and the surge in patent trolls (Non-Practicing Entities).
- The costs of the current patent system: litigation, patent trolls and other hurdles in new product development.

By the end of this section, the reader will understand that, if left unchanged, the current system presents severe flaws that allowed players to exploit the system, either for pure profit or as means of curbing competition and forcing innovators out of large markets.

The second section of the paper addresses some of these flaws and their implications.

The third and final section provides recommendations for improvement to the U.S. patent system.

## 1. The Patent System: A Barrier to Innovation?

### Recent development involving the Patent System

According to PwC's 2012 study, 2011 "marked the most significant change to the US patent system in almost 60 years" when President Obama signed the Leahy-Smith America Invents Act (AIA) into law. The law changes the patent system from a 'first to invent' to a 'first inventor to file' system. Nonetheless, AIA does not address calculation of damages after patent infringement (PwC 2012). By applying AIA, Congress gives the judicial system the ability to settle charges and thus shape the application of patent law. To highlight the importance of the judicial system to this issue, in 2010 alone, 3,260 patent lawsuits were filled in US district courts, a threefold increase from two decades ago (Duhigg 2012).

This change in the system came following the significant increase in both patent cases filled and patents granted:

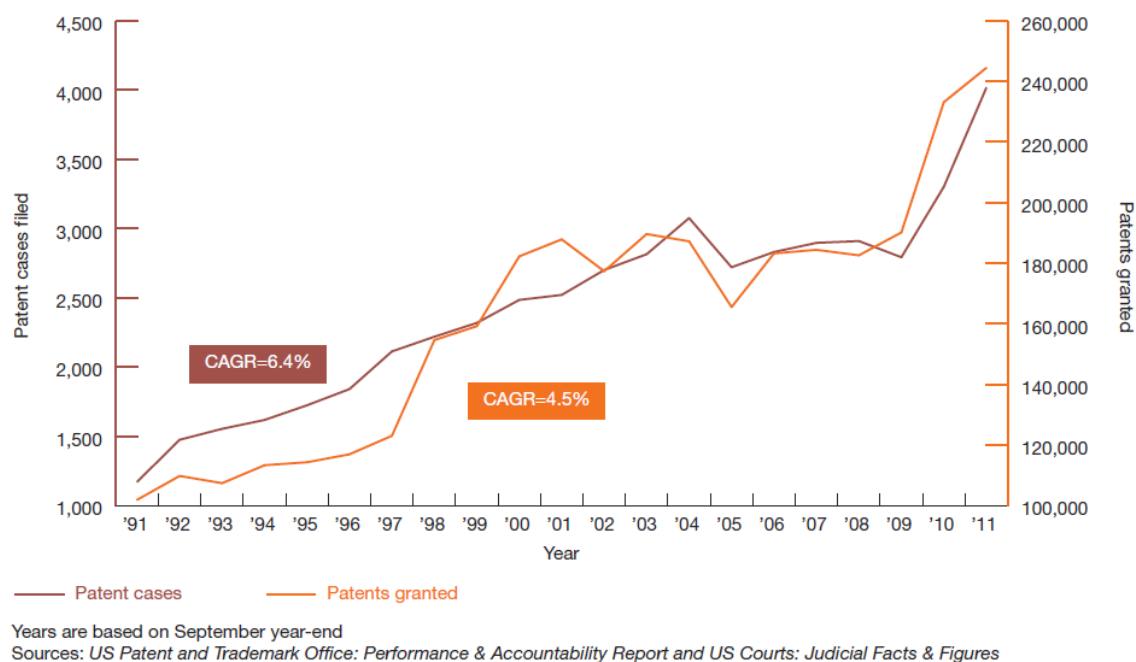


Figure 1 - Patent case filings and grants (PwC 2012)

### The Patent War among the tech giants – The smartphones battlefield

Apple's iconic victory against Samsung marked an escalation in the Patent War. Before the ruling, large tech companies had only a handful of small litigation cases against each other. These court cases mostly produced ambiguous decisions by juries or were settled before

the cases went to trial. Between 2005 and October, 2012, Apple was involved in 148 patent lawsuits (The New York Times 2012), some leading to substantial outcomes. Below are some significant litigations involving the Tech/Mobile giants:

- **Nokia and Apple:** in 2011, several lawsuits and counter lawsuits were settled with Apple agreeing to pay \$600mm and future royalties to Nokia.
- **Nokia and Research In Motion:** On November 2012, 3 months before the launch of the new Blackberry, Nokia asked courts in US, UK and Canada to block sales of RIM's device (BBC 2012) – charges regarding WLAN technology (internet connectivity), used in all of Blackberry devices.
- **RIM and Motorola -** RIM sued Motorola Mobility over instant communication patents (before its acquisition by Google) (BBC 2012).
- **Apple against Android (Google)** – a proxy war: several lawsuits filled against the largest manufacturers (Samsung, HTC, Motorola) in a attempt to curb Android's expansion.
- **Vs. HTC:** Apple filled an important lawsuit using HTC as a proxy to Google allowing it to block the import of several HTC models to the US. The lawsuit was filled without any prior talks with HTC; negotiations were not part of the strategy. According to a former Apple executive: "Google was the enemy, the real target" (Duhigg 2012).
- **Vs. Samsung:** California jury awarded Apple \$1 billion over several design and usability features of the iPhone. Worth noting, in the very same day, a court in Korea delivered a mixed verdict favoring Samsung. A week later, Samsung came out as the winner in a court in Japan (The New York Times 2012).

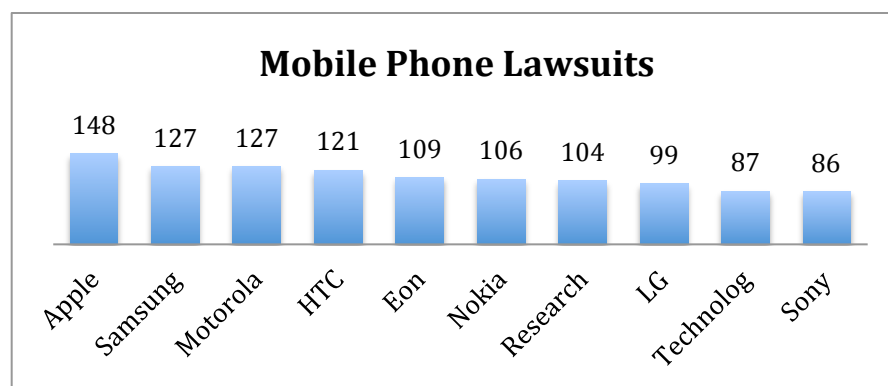


Figure 2 - Number of Lawsuits filled against each company (The New York Times 2012)

### Patent as weapons of attack and defense and the rise of patent trolls

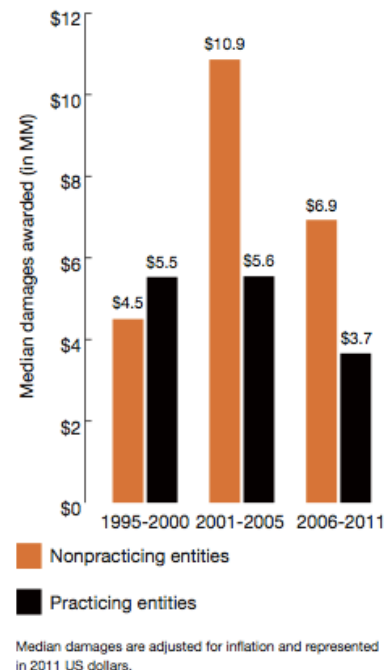
Over the last five years, large companies have strategically acquired patent portfolios and companies to defend themselves from future litigation. Some key examples include(PwC 2012):

- In July 2011, a consortium, 'Rockstar Group' (including Apple, Microsoft, Research in Motion, and Sony) acquired Nortel Networks' 6,000-patent portfolio for \$4.5 billion.
- In August 2011, in what appeared to be a largely defensive move, Google acquired Motorola Mobility for \$12.5 billion to protect the Android platform.

Concurrently, Non Practicing Entities, specifically Patent Trolls, sought to acquire smaller companies/patents with the sole intention of extracting large settlements/trial results from large players. This race escalated and contributed heavily to the costs of patent litigation. It is worth noting that, NPEs and trolls have been able to secure higher median damages through litigation, self-feeding this trend.

Part of the “higher awarded damages situation” can be explained by the legal means sought by NPEs, which are discussed in the next section.

All NPEs are not created equal. While university and other non-profit NPEs have the highest success rate among NPE litigants, their median damages award is considerably lower than the median award of company NPEs (PwC 2012).



### The cost of the current patent system

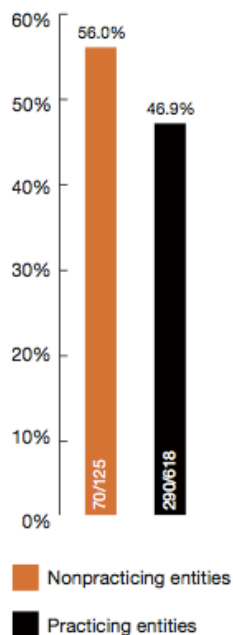
The patent war is heavily burdening companies. A Stanford University study estimates that, in the smartphone industry alone, over \$20 billion was spent on litigation and patent acquisition between 2011 and 2012. More importantly, this number represents more than all investment in research and development of new products (Duhigg 2012).

Part of this cost can be explained by the surge in litigation cases, where one of the parties seeks juries to decide upon the damages awarded. According to PwC (PwC 2012):

*“The disparity between jury and bench awards continues to widen as the median jury award amounted to more than 20 times the median bench award between 2006 and 2011.”*

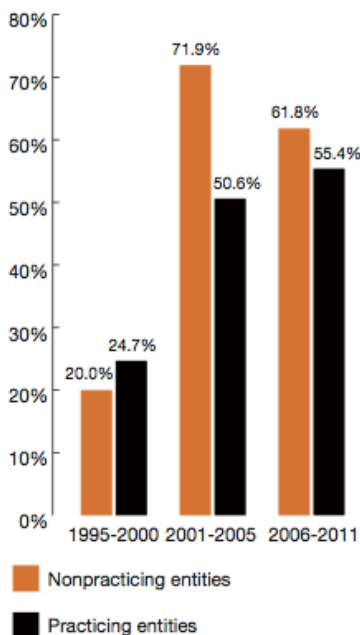
NPEs have led the search for trials as a way of solving disputes: NPEs are, on average, successful in litigation 23% of the time versus 34% for practicing entities at summary judgments. But, for cases that go to trial, NPEs and PEs success rates are roughly the same, around two-thirds (PwC 2012). From the PwC study:

**Chart 3c. Use of jury trials by type of entity: 1995 to 2011**

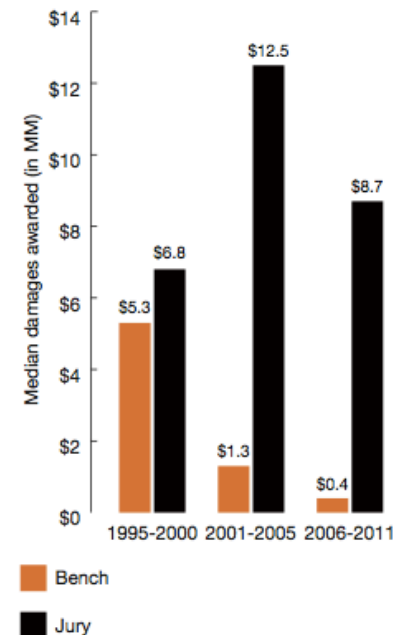


The number of cases is indicated within the respective column.

**Chart 3d. Use of jury trials by type of entity**



**Chart 3e. Bench vs. jury trials: median damages awarded by period**



Median damages are adjusted for inflation and represented in 2011 US dollars.

Besides the clear financial costs, the current situation burdens companies and their executives with additional highly expensive processes, bureaucracy and at times a “fear to innovate” as companies might unwarily trespass into competitors Intellectual Property domain.

More importantly, the “patent mess” diverts efforts and investments, both time and financial, from innovation and growth strategy to meager short-terms goals, as companies sometimes live from lawsuit to lawsuit.

## 2. Problems with the Current Patent System

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After a careful review of several papers and news articles we found four common recurring themes regarding the problems with today's patent registration system:

- Patent system is too universal, does not take industrial differences into account. For example in pharmaceuticals and technology industries, the cost of R&D can amount to several billion or several million respectively.
- Companies spend money on patent wars rather than R&D and consumers pay the cost by higher prices.
- The high litigation costs caused by patent trolls and large players kill innovation.
- The patent registration office cannot keep up with the increased number of patent filings and makes ambiguous decisions when granting them.

In this chapter we examine the problems. The next chapter provides several possible solutions to these problems.

The lifetime of patents is too long and does not take industrial differences or the cost of developing the patented entity into account

The current patent system grants patents for 20 years, regardless of industry. While for some products, such as pharmaceuticals, this timeframe ensures enough profits to make up for the cost of research, it is too long for other industries, such as the IT industry. In the pharmaceutical industry typical drug development and FDA approval can cost several billion dollars and take a decade to generate a return on investment. In the IT industry, where Apple is daily making millions of dollars on iPhone sales, patent development costs get reimbursed in several weeks, rendering the 20 year exclusivity provided by the patent economically nonsensical. In a recent case, a European judge ruled that Samsung must halt the sales of its Galaxy S series of mobile phones infringing on another party's patent with the swipe activation technology. The profit Samsung lost as a result of the ruling clearly outweighed the investment Apple needed to develop the swipe patent (LOHR 2012). Another study points out that software-related patent disputes represented 62% of all patent lawsuits, while drug or chemical related patent disputes only accounted for an insignificant 2% of all patent lawsuits. (Lee 2011) This further suggests that the current system works well for some industries, while it may be abused by others.



### When companies spend money on patent wars rather than R&D, consumers pay higher prices

Patent warfare, especially in the IT sector, has become part of corporate strategy, both as a defense against and attack on competitors. Critiques of today's practice claim, that patent trolls and patent litigation cost companies somewhere between \$29 (Mullin 2012) and \$88 (Lee 2011) billion each year. To illustrate how corporations spend money on lawsuits rather than R&D, we can look at Apple's business strategy evolution in the last decade (LOHR 2012). While the strategy might boost Apple's profits on the short term, it is also forcing customers to pay higher prices worldwide.

Apple's new strategy to patent everything began in 2006, when the company had to settle a \$100 million dollar lawsuit against Creative Technology, a Singapore based company, which claimed to have invented the "digital portable music playback device". This was decades after the Walkman and the Discman were invented, both of which would also easily qualify for the above definition. After the lawsuit Steve Jobs famously commented:

"Creative is very fortunate to have been granted this early patent (Pinsent Masons 2006)"

This court decision changed Apple's approach to patents. Before the court decision Apple filed very few patents and mostly relied on superior products to win market share and the customer trust. After the decision the company began to hire patent lawyers. Engineers were asked to participate in "invention disclosure sessions" (LOHR 2012) with these newly hired patent lawyers, where everything Apple's engineers produced was patented. To illustrate how important patents have become in Apple's strategy, it is enough to consider the fact that the number of patent applications Apple has submitted in the last decade has risen tenfold (LOHR 2012). Apple has patented such seemingly obvious processes and product attributes as:

- Rectangular shape of iPhone
- Glass staircases in Apple stores
- Using magnets to affix a cover to a tablet computer
- Pinching a screen to zoom in

Some of these patents did not make it through the patenting process at first, while others were filed 10 times before they were granted approval, but in the end all these features, along with many others, received a patent for 20 years. Based on the armada of patents, such as the ones mentioned above, Apple recently managed to keep Samsung's Galaxy Tab

and Galaxy S smartphones off the shelves in Germany, and forced Samsung to pay \$1.05 billion (Dignan 2012) in damages in the US for patent infringement. While Apple's strategy is highly profitable and lucrative for Apple's shareholders, the flawed and outdated patent system is costing consumers billions of dollars each year.

#### Killing of small business and innovation – the case of Vlingo

In the last three decades, the number of patent cases taken to court increased four-fold, from 800 in 1980 to over 3200 in 2010 (Quinn 2011). Many of these cases were used to stop small companies from developing their innovative ideas. We next examine how current patent rules and regulations affect small businesses and kill innovation through the case of Vlingo, a small startup which was focusing on voice recognition and was forced to go out of business by its competitor simply because it could not afford the cost of lawyers to defend itself in court. Vlingo was a small startup that partnered with Apple and Google to develop voice recognition software. Vlingo was sued by Nuance Communications in 2008 for allegedly infringing on six patents held by the company. The outcome: Vlingo spent 3 million dollars over the next two years, which it had previously slated for R&D, to defending its case in court. All its partners backed out from working with Vlingo, due to the uncertainty these legal disputes caused. Although the court ruled that Vlingo had not breached any patent rights Nuance Communications held, loss of business partners forced the owners of Vlingo to sell their company to Nuance Communications (Duhigg 2012).

#### The patent registration office cannot keep up with the increased number of patent filings and makes ambiguous decisions

Some companies abuse the patent system as much as they can. It is common practice, to continuously re-file general patent applications with minor modifications until a patent is granted. Of course only large corporations can afford this practice, which tips the whole system against small companies that are trying to drive innovation. To illustrate this flaw, let's look at Apple's Siri. Apple has filed and re-filed a patent for "a theoretical universal interface" that would allow users to conduct a search across various mediums, like the Internet, corporate databases and computer hard drives, without having to use multiple search engines." (LOHR 2012). The patent was rejected 9 times for being too general and obvious, but was approved after the tenth submission, demonstrating that even patents with apparently no merit and "too vague" can eventually be granted and used as weapons.

### 3. Proposed Solutions

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To fix the issues of the patent registration system, we propose the following actions:

- Introduce different lifetimes for different type of patents. One alternative would be that different industries would have different patent lifetimes. The pharmaceutical industry would have 20-year patents; whereas the software industry would have 2-5 year long ones. Another alternative would be to take R&D costs and future profits into consideration and grant patents based on economic calculations.
- Increase objectivity of patent judges. The definition of what can be patented and what is obvious should be explicit in the law to make patent decisions less open to interpretation.
- Force technology patents to be more specific in their scope and more detailed in their implementation. Current patents filled by tech have become increasingly vague and give rights to a huge spectrum of applications, damaging innovation (Duhigg 2012).
- Only Practicing Entities - real producers of products - and University/Research centers should be allowed to file patent infringement lawsuits. This would limit the effectiveness of patent trolls attempts to sue corporations actively engaged in R&D.
- Application of sections of the “Innovators Patent Agreement”, proposed by Twitter. The agreement suggest that software engineers are given more control over their creations and, more importantly, it calls companies to pledge that patents can only be used for defensive purposes (Adam Messinger 2012) (Duhigg 2012). This is an interesting development, which might help repair the patent system. An increasing number of companies are joining the movement of having a corporate level “Innovator’s patent agreement” (LOHR 2012).

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