



Dipartimento: Impresa e Management

Cattedra: Intellectual Property Rights and Technology Transfer

The Net Macroeconomic Cost of Patent Trolls

Relatore Prof. Massimiliano Granieri

Correlatore Prof. Andrea Renda

Candidato Valerio Poce

Matricola 636771

Anno Accademico 2011/2012

ABSTRACT

In recent decades the international patent system has seen the creation and diffusion of a new phenomenon, Patent Trolls, entities that, without undertaking any productive or R&D activities make the acquisition and protection of patents their core business. This thesis aims at investigating on the nature of such entities and their specific business model, in order to understand, also with the support of evidence that has emerged from several empirical research works, if their action represents, as claimed by a part of the literature, an obstacle to innovation and a high cost for the community, or if, as believed by a second group, Patent Trolls actually facilitate technological progress and improve the efficiency of the intellectual property market.

INDEX

CHAPTER ONE

THE PATENT TROLLS

- 1.1 Introduction
- 1.2 Origin and etymology of the term "Patent Trolls"
 - 1.2.1 TechSearch vs Intel
- 1.3 The main features of Non-Practicing Entities

CHAPTER TWO

ECONOMIC AND LEGAL BACKGROUND OF PATENT TROLLING

- 2.1 Economic Background of Patent Trolls
- 2.2 Business model of Non-Practicing Entities and patent trolling strategies
- 2.3 Defence strategies
- 2.4 Patent trolling activities between legal sustainability and perceived unsustainability: some exemplar cases
 - 2.4.1 NTP Inc. vs. Research In Motion Ltd
 - 2.4.2 Eolas Technologies Inc. vs. Microsoft Corp
 - 2.4.3 MercExchange L.L.C. vs. eBay

CHAPTER THREE

COMPARATIVE ANALYSIS OF DRAWBACKS AND BENEFITS OF PATENT TROLLING

- 3.1 Introduction
- 3.2 Patent Trolls as distorting elements
 - 3.2.1 Trolling as a brake on innovation
 - 3.2.2 NPEs disputes and Start-ups
- 3.3 The benefits of trolling activities
- 3.4 Conclusion

BIBLIOGRAPHY

CAPITOLO PRIMO

THE PATENT TROLLS

1.1 Introduction

This research aims at analysing the so-called Patent Trolls or Patent Pirate phenomenon: companies that, even if they do not undertake any research, development or sale activities, have made the acquisition and protection of patents their core business.

As opposite to the majority of other businesses, for which intellectual property and its protection mechanisms represent an interconnected activity with the more traditional ones of production and sale, in the eyes of Patent Trolls the patent value does not lie so much in the exclusive right to its exploitation, but in what could be defined as an indirect and consequent right, namely the probability that, in case of violation of the aforementioned exclusive right, the owner could resort to legal action to seek financial compensation from the person charged with the violation.

Thus Patent Trolls do not hold patents to utilize them according to the most traditional practices, that is to develop and sell a product that was made thanks to the idea registered

in the patent. They set up, through acquisition, portfolios of patents with the aim of taking legal action every time they foresee margins could derive from reclaiming the unlawful use of what was patented and therefore to obtain, by court order or simply through the pressure exercised on the subjects who were found guilty of breach, substantial compensation.

1.2 Origin and etymology of the term "Patent Trolls"

To better understand the main features of Patent Trolls it is useful to go back and analyse the origin and genesis of its curious denomination. History tells that the term Patent Trolls was first coined by Peter Detkin in 1999, that is during the period in which, in quality of legal consultant of the high tech colossus Intel, he found himself having to manage numerous compensation claims made against the company in relation to infringements of certain patents.

This is not though what actually happened in reality and, although a slight contribution from Detkin to the process of Patent Trolls denomination cannot be denied, the paternity of the term must be recognized to Anne Gundelfinger (Vice President and Associate General Counsel Intel) or, more precisely, to her family.

It was Anne Gundelfinger herself who clarified the issue, in an interview in 2008¹: towards the end of the 90s, she narrates, Intel was at the centre of numerous expensive litigations concerning patent infringements. Peter Detkin, at the time Vice President & Assistant General Counsel of the Santa Clara company, noticed a strange coincidence, namely that behind many of the different lawsuits were not companies that were claiming their right to certain patents for products they created based on them, but companies that would buy and hold on patents for the sole purpose of taking legal actions against violators and obtain substantial compensation for it.

Wanting to raise awareness of the situation to the company and, at the same, avoid a risky linguistic drift, Detkin, who at the time was dealing with the lawsuit initiated by Techsearch against Intel, decided to encourage his team to come up with a new name with which they could easily identify these weird companies and to reward whoever invented the best name with a dinner for two. Among the group members was Anne Gundelfinger who, talking to her family about the competition, involved her daughter and her husband Mark Davis, at the time an engineer employed at Google, in a sort of brainstorming at the end of which he, inspired by medieval literature, had the idea to suggest the term “troll”, referring to a character which, in his opinion, was well suited to represent what Intel was going through.

¹ See Wild J., *The real inventors of the term "patent troll" revealed*, in IAM Magazine, 22 August 2008.

Trolls are, in fact, fantastic creatures belonging to the North-European mythology, similar to gnomes, but much more mischievous and malicious, who presided, and sometimes built, bridges to request toll payments to people who wanted to cross them. To some extents, thus, Trolls acted as collectors, using a business model that is very similar to the one used, in fact, by Patent Trolls.

The definition was well received by Detkin, who started to use it both internally at Intel and externally, contributing extensively to its diffusion.

The first medium to give public visibility to the very effective and immediate term was the press, through an article published in July 2001 by the legal magazine *The Recorder*². The piece, titled “Trolling for Dollars” and accompanied by a picture in which Peter Detkin was holding a small troll doll, tells, in a sort of fairy-tale way, about the lawsuit filed against Intel by Chicago Telesearch and the law firm Niro, Scavone, Haller & Niro. The article went on describing how the Santa Clara company was now besieged by a “band of evil trolls” and their threats to sue for millions if their blackmailing economic demands failed to be met.

It was right at that point that the judicial case became more complicated. Niro law firm, in fact, sued Intel, not only for the patent infringement, but also for defamation,

² See Sandburg B., *Trolling for Dollars: Patent Enforcers are Scaring Corporate America, and They're Getting Rich – Very Rich – Doing It*, in *The Recorder*, 30 July 2001.

considering worthwhile to defend its client from the accusations made by Intel of acting like patent extortionists³.

Detkin, however, immediately understood the importance of not making the company vulnerable by its enemies using inappropriate and offensive terms. For this reason, he was one of the main promoters of the “competition” that led to the creation of the term Patent Trolls.

The interesting aspect of this story, which demonstrates how difficult it is to grasp, also linguistically, such elusive and changeable terms like “Patent Trolls”, is that in recent years, ironically, the same company from which this term originated, Intel, which, as we shall see later, is not without blame in the controversy with Techsearch, has decided to remove the term from its vocabulary, considering it no longer adequate to describe all the different forms taken on by the phenomenon.

1.2.1 TechSearch vs Intel

The main reasons that pushed Detkin to create a new term with which to identify the companies who were only interested in claiming financial compensation for patent infringement, even if they were not using such patents themselves for production purposes, are, as seen before,

³ See Niro Raymond P., *Who is Really Undermining the Patent System – “Patent Trolls” or Congress?*, in J. Marshall Review of Intellectual Property Law, n. 6, 185, 2007, p. 188.

closely linked to the lawsuit filed in 1998 from the Chicago firm TechSearch against Intel.

The court case revolves around IMS 3250, a microprocessor designed by Henry L. Scatlin and developed by International Meta Systems Inc. (IMS), which can emulate the behaviour of other processors such as Intel 80X86 and Motorola 680X0.

In March 1994, in fact, IMS submitted a patent application for its processor. The request was accepted in November 1997, when IMS became effectively the owner of patent no. 927 called "Architecture RISC Computer Configured for Emulation of the instruction set of a Target Computer", where the acronym RISC stands for "Reduced Instruction Set Computer".

All these efforts, however, did not produce the expected results. After several failed attempts to produce IMS 3250, International Meta System abandoned the project and, in January 1998, by then in bankruptcy, sold patent no. 927 to TechSearch who, in September 1998, thus only after 8 months from the deal, pressed charges against Intel with reference to their P6 processor and the infringement of their patent⁴.

Intel was certainly not intimidated by such behaviour and, after refusing to sign a licencing agreement with them⁵, reported that its products were actually using patents submitted

⁴ See *Techsearch v. Intel Corporation*, in FindLaw for Legal Professionals, URL.: <http://caselaw.findlaw.com/us-federal-circuit/1303145.html>.

⁵ See Haller T.J. - Wiggins S., *The patent troll myth*, in Ip Value 2006, URL: www.buildingipvalue.com/06homeindex.html.

before the IMS one and therefore they were not infringing anyone else's property rights.

Actually, although presented as a victim of TechSearch's attacks, Intel cannot be said to have nothing to do with what was happening. The Santa Clara company, in fact, after having boycotted IMS' activities and having partly contributed to its bankruptcy⁶, tried in vain, in the same period in which TechSearch was negotiating the acquisition of IMS's 927 patent and while claiming the patent had a significantly higher value than the one agreed between TechSearch and IMS, to obtain from the bankruptcy court, through a subsidiary conveniently set up in the Cayman Islands, Maelen, the annulment of the sale⁷.

Beside these implications, however, the compensation claim made against Intel by Techsearch, based on the latter being the owner of a patent that allowed legitimate production of microprocessors that were a "copy" of Pentium's, was not decided on. On 21 December 1999, in fact, Intel won the case and Techsearch had to back off⁸.

The story, however, had contributed to open the doors for the phenomenon of Patent Trolls, which, from that moment on, progressively became more widespread. Not surprisingly, the same Detkin, who had tried so hard to stop the activities of

⁶ *Ibidem.*

⁷ *Ibidem.*

⁸ See Kanellos M., *Intel scores a victory in TeachSearch suit*, in CNET News, 21 December 1999, URL: http://news.cnet.com/Intel-scores-a-victory-in-TechSearch-suit/2100-1001_3-234727.html.

Patent Trolls, defining them as distorting elements of the economic system, precisely as "*somebody who tries to make a lot of money off a patent That they are not practicing and have no intention of practicing and in most cases never practiced*"⁹, once released by Intel, took on the position of Managing Director at Intellectual Ventures, a company that specialized in the acquisition, holding and protection of patents, namely a Patent Troll, accused of "patent trolling" and of holding many companies hostage thanks to its patent portfolio¹⁰.

In that instance, it was the same company's founder, Nathan Myhrvolf, to make his company's mission very clear by stating: "*If giant corporations are making billions of dollars from my ideas, I want something for it*"¹¹.

1.4 The main features of Non-Practicing Entities

As logically expected, since their first appearance, Patent Trolls have been at the centre of a heated debate in which many observers have raised doubts about the legitimacy and value of their activity.

For some of them, in fact, Patent Trolls are like a sort of parasite in the economic system, responsible for preventing

⁹ Sandburg B., *Trolling for Dollars: Patent Enforcers are Scaring Corporate America, and They're Getting Rich – Very Rich – Doing It*, cit.

¹⁰ See Lerer L., *Going Once?*, in IP Law & Business, October 2006.

¹¹ Stone B., *Factory of the future?*, in Newsweek, 22 November 2004.

development¹², acting to the limits of the law, if not beyond, and making a profit through blackmail, leveraging on companies' fear to get involved in expensive legal litigations¹³.

A minority, but nonetheless worthy of attention, however, considers that the activities of patent trolling represent a healthy element within the entire system, because they can contribute to make the market for patents more fluid, they give value to innovations, even if made by small businesses¹⁴, and act as guardians to ensure compliance with the rules laid down for the protection of industrial property.

To better understand the reasons behind both positions it could really be useful to try and delimit in more detail what we mean by Patent Trolls and in what ways their activities differs from any other patent holder, or PPE (*Patent practicing entities*)¹⁵, determined to defend its legitimate right to an invention's exclusive use.

As well described through extensive literature, Patent Trolls are companies that fall under the wider category of *Non-practicing entities* (NPEs) because they do not develop any

¹² See Forsberg H., *Diminishing the attractiveness of trolling: the impacts of recent judicial activity on non-practicing entities*, in Pittsburgh Journal Of Technology Law And Policy, vol. 12, n. 4, Fall 2011, pp. 2-3.

¹³ See Chiang TJ., *What is a troll patent and why are they bad?*, in PatentLyo, 6 March 2009, URL: www.patentlyo.com/patent/2009/03/what-is-a-troll-patent-and-why-are-they-bad.html.

¹⁴ See Lueck M. - Oberts S - Miller K.G., *"Patent Troll": A Self-Serving Label That Should Be Abandoned*, Roberts, Kaplan, Miller e Ciresi LLP, 28 September 2005, URL: www.rkmc.com/Patent_Troll_A_Self-Serving_Label_that_Should_be_Abandoned.htm.

¹⁵ See D'Incelli G., *Has Ebay spelled the end of Patent Troll abuses? Paying the toll: the rise (and fall?) of the Patent Troll*, in University of Miami Business Law Journal, vol. 17, n. 2, Spring/Summer 2009, p. 348.

new technology, nor they use technologies to offer services and goods to the market¹⁶. Their business is then basically the only made up of the acquisition of patents from innovative businesses at low cost¹⁷ with the sole intention of using them to get a financial return from all those firms that, as part of their activities, may run into violations of such patents.

With the specific intent to capture the phenomenon as closely as possible and to highlight its critical features, some authors have tried to define Patent Trolls using as a benchmark their own behaviour within the market and, therefore, the fact that they are anomalous players that, unlike the majority of companies (PPE), do not hold any patents for production purposes, but only in order to exercise their intrinsic right of protection.

In most cases, in fact, the main aim of a Patent Troll is that of pushing or forcing, through specific behaviours that are often intimidating, other companies, whose products depend on a patent, partly or fully, to purchase licences from them¹⁸ or even to negotiate a legal truce only in case of “reasonable” financial compensation for damages, holding them hostage of long and expensive lawsuits¹⁹. Because of this, Patent Trolls

¹⁶ See Rantanen J., *Slaying the Troll: Litigation as an Effective Strategy against Patent Threats*, in Santa Clara Computer & High Technology Law Journal, vol. 23, issue 1, art. 5, 1 January 2006, p. 164.

¹⁷ *Ibidem*.

¹⁸ See Chan J. – Fawcett M., *Footsteps of the Patent Troll*, in Intellectual Property Law Bulletin, vol. 10, issue 1, Fall, 2005, p. 1 ss.

¹⁹ See Ghyo Sun Park - Seong Don Hwang, *The Rise of the NPE*, in Managing Intellectual Property, 1 December 2010, URL: www.managingip.com/Article/2740039/The-rise-of-the-NPE.html.

have been defined by many as "*disturbing trend*"²⁰, categorised as "*companies that do not produce products, but simply acquire patents to obtain licensing revenue*", or even compared to "*terrorists that threaten legitimate innovators and producers*"²¹. Others have instead concentrated their attention on the purely speculative nature of Patent Trolls' activities, highlighting how they end up shaping a sort of "*opportunistic licensing*"²².

Beyond all of these partial definitions, Patent Trolls are definitely related to the family of patent holders (patentees) in which, alongside innovators, who develop and patent new technologies without eventually or necessarily using them for production purposes (inventors, research centres, universities, companies, etc.), and producers, who instead use patents to protect their own products, we find the rent seekers, who hold patents to make profits through the sale of licencing agreements²³.

As it is evident, Patent Trolls can certainly be framed as a sort of evolution of the "*rent seekers*". They, however, do not entirely represent such category: among rent seekers, in

²⁰ Landers A., *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, in *Santa Clara Law Review*, vol. 46, 2006, pp. 307-375.

²¹ Schultz J., *When Dot-Com Patents Go Bad*, in *Salon.com*, 13 December 2004, URL: www.salon.com/tech/feature/2004/12/13/patent_reform.

²² Ferrill E.D., *Patent Investment Trusts: Let's Build a PIT to Catch the Patent Trolls*, in *North Carolina Journal of Law & Technology*, vol. 6, issue 2, Spring 2005, p. 375.

²³ See Rantanen J., *Slaying the Troll: Litigation as an Effective Strategy against Patent Threats*, cit., p. 165.

fact, we find companies that cannot be defined as trolls whatsoever. So what differentiates them?

In this respect, a first differentiating factor was initially identified as the mission that almost all Patent Trolls have, that is to exclusively obtain an economic return (*fee*) from the sale of licences for patents. This, however, cannot represent an adequate discriminating factor since, as discussed earlier, not all *rent seekers* can be classified as Patent Trolls.

For the same reason, the distinction between *Patent practicing entities* (PPE) and *Non-practicing entities* (NPE) seems not to be helpful in shaping the correct definition of Patent Trolls, as the latter includes entities like universities and research centres that, even if with no intention of starting any production activities, develop and patent new technologies continuously and have often to give up such production ideas as they do not have the necessary resources²⁴.

Therefore, to accurately define a Patent Troll it could be useful to analyse beyond their mission and focus our attention on their approach to the patents market and their *modus operandi*.

In reality, as a matter of fact, Patent Trolls are recognizable essentially by two key elements: on one side, the specific behaviour that is typically linked to their activities

²⁴ See Quinn G., *In Search of a Definition for the Term "Patent Troll"*, in IPWatchDog, 18 July 2010, p. 5, URL: <http://ipwatchdog.com/2010/07/18/definition-patent-troll/id=11700>.

and, on the other side, the tools they use to reach their final objectives.

From this point of view, by analysing the literature on the subject, it clearly emerges that one of the main characteristics of Patent Troll is the activity of buying and holding patents without having, from the beginning, any intention of using them for production purposes²⁵.

Another very important aspect, useful mostly to exclude from the category of Patent Trolls all the *Non-practicing entities*, like universities and research centres, that by nature do not contemplate in any way the productive use of the patents they develop and register, refers to how Patent Trolls exercise their patents ownership to claim their rights and, eventually, to reach the market.

The activity of patent trolling, in fact, goes well beyond the legitimate claims that a patent owner is entitled to bring forward against a potential violator. They normally take on a constrictive, intimidating and threatening value, as well as an opportunistic and speculative nature.

Patent Trolls act, in fact, in such a way to make their counterparts – usually companies that are innovative and entrepreneurial – hostage of their requests, forcing them to make a choice that is substantially piloted by them: either take on a long and expensive lawsuit with an uncertain turn out or,

²⁵ See *SlindFlor V.*, *Simon Says Intel's Chief Patent Counsel, David Simon, Has Some Tough Rules for Outside Counsel*, in *IP Law & Business*, vol. 4, issue 12, 10 December 2004.

alternatively, comply with the request (that some people define as pure blackmail) of paying a conspicuous fee or buying a licencing agreement at a price that is usually very disproportionate to their actual and effective value²⁶.

Thanks to such behaviours, Patent Trolls' profits can, de facto, be positive regardless of the outcome of their legal proceedings: indeed, it is the risk, the cost and the time involved in a lawsuit the most effective tool used by Patent Trolls to persuade the targeted victims not to choose the legal way, which, on top of being very expensive, could also jeopardise their entire business²⁷, and thus to choose the payment of a fee as financial compensation and/or a licensing agreement.

The speculative and opportunistic behaviour that characterizes how Patent Trolls operates emerges also when analysing one of their typical strategies, the so-called “*opportunistic licensing*”: namely, the acquisition of old patents to be held against new products²⁸.

A so to say “traditional” version of such activity entails the acquisition of patents that are now obsolete, with the expectation, or better said the hope, that in the future another

²⁶ See Rantanen J., *Slaying the Troll: Litigation as an Effective Strategy Against Patent Threats*, cit.

²⁷ See *Patent Quality Improvement: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Prop., Before the H. Comm. On the Judiciary, 108th Cong.* 54, 2003, URL: http://commdocs.house.gov/committees/judiciary/hju88545.000/hju88545_0.htm.

²⁸ See Ferrill E.D., *Patent Investment Trusts: Let's Build a PIT to Catch the Patent Trolls*, cit., pp. 375-376.

company will develop a product that will need to use the previously patented idea. A more aggressive version, instead, has the form of an acquisition of patents for which a potential infringement has already been verified, and thus the victim of trolling has already been identified.

The intimidating component of Patent Trolls' behaviour is clear also in the use of particular blackmailing tools, such as the constant mentioning of a potential lawsuit and the threat of every possible legal action, with the exact aim of pressuring its counterparts and pushing towards their preferred direction²⁹.

In conclusion, we can therefore say that Patent Trolls are characterized by a specific combination of tools and objectives that include the acquisition and holding of patents with the only aim of identifying potential violations and thus obtaining, from the person held responsible as the violator, an economic return in the form of financial compensation, licencing agreement or any other means.

So specialized and organized as well as unscrupulous, Patent Trolls draw strength from being aggressive, determined and uncompromising. They are not at all interested in signing cooperation agreements and *crosslicensing*³⁰, with which companies (especially in the manufacturing sector) typically resolve disputes concerning patents. Patent Trolls, unlike all other PPE and NPE, have no expensive properties, plants or

²⁹ *Ibidem*.

³⁰ See Magliocca G.N., *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, in Notre Dame Law review, n. 82, 2007, pp. 1809-1814.

equipment, they have lean structures, they have not made massive investments in product development and production processes, they do not have any interest in defending their reputation and, ultimately, enjoy the incomparable advantage of having nothing to lose³¹, except of course the patent in question, even if the actual value of this becomes null to Patent Trolls whenever it cannot be used for profit in a court litigation.

³¹ See Waldmeir P., *Patent Extortion Is the Cost of Business*, in Financial Times, 17 March 2005.

CHAPTER TWO
**ECONOMIC AND LEGAL BACKGROUND OF
PATENT TROLLING**

2.1 Economic Background of Patent Trolls

In today's competitive environment "patent litigations", i.e. those disputes concerning patents and licenses, and especially the ones involving an entity pertaining to the broader category of Non Practicing Entities (NPEs), are a phenomenon of growing relevance that brings about consequences that impact the dynamics as much as the efficiency of markets. For this reason, leaving any consideration about the usefulness or harmfulness of such realities aside for a moment, a topic which will anyhow be addressed later on in this research, it may be useful to assess the overall capacity of this phenomenon, outlining its contours as much as possible under both a qualitative and quantitative perspective.

As noted by some parts of the relevant literature, patent litigations usually take on the form of a typical conflict, or, better said, of a dispute in which two parties get confronted,

even if not always on an even footing, claiming an entitlement to a specific intellectual property.

This has led some authors to underline how such disputes may, depending on the size of the parties involved, represent a sort of "battle of the titans" and sometimes, when the players involved are clearly unequal, can even become similar to the legendary confrontation between David and Goliath³².

While pointing out that the aforementioned distinction does not allow us to investigate in detail whether a patent litigation was initiated within the traditional context of a Patent Practicing Entity acting to protect its patents or whether it all stemmed from the initiative of an entity that is not linked to the productive use of the patent – for example NPEs and Patent Trolls -, the litigation itself may represent, in a more articulate way, a useful discriminating factor to try and understand the scale of the phenomenon.

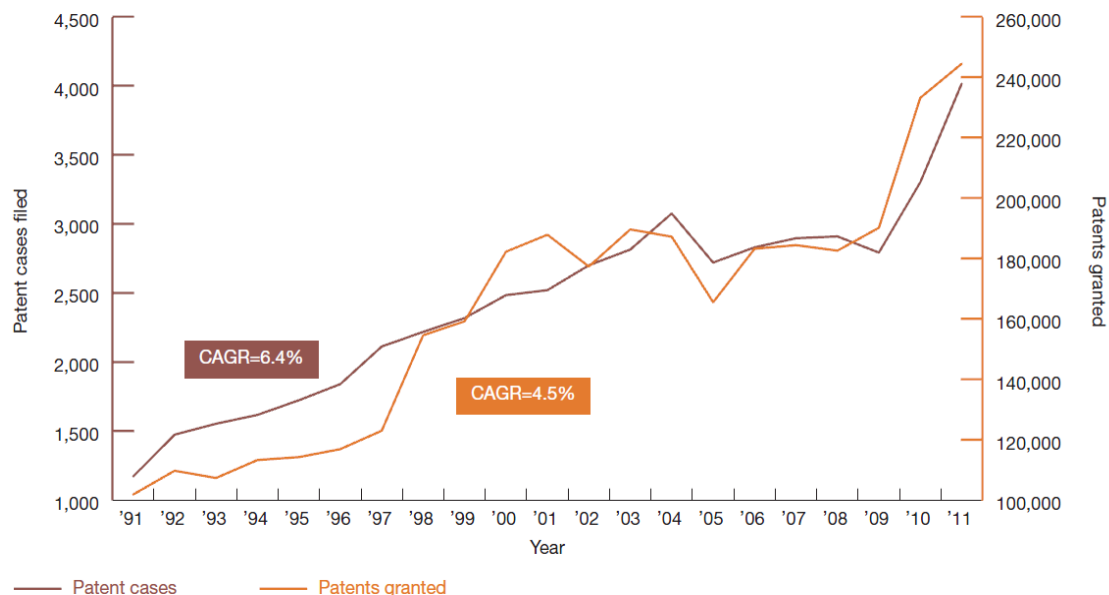
An initial picture, albeit not exhaustive, of the American context, which is definitely the most important on this front, clearly emerges from surveys conducted by the Intellectual

³² See Kline Douglas J., *Patent Litigation: The Sport of Kings*, in MIT Technology Review, 28 April 2004, URL: <http://www.technologyreview.com/news/402686/patent-litigation-the-sport-of-kings>, and see also Chien Colleen V., *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the litigation of high-tech Patents*, in North Carolina Law Review, 2009, vol. 87, URL: <http://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1003&context=facpubs>.

Property Litigation Clearinghouse (IPLC)³³ and the United States Patent and Trademark Office (USPTO).

Data show that between 1991 and 2011, the total number of patent lawsuits filed has gradually increased. From about 1,000 disputes in 1991, the total moved to almost 4,000 cases in 2011, with a Compounded Annual Growth Rate (CAGR) of 6,4%³⁴ (Fig. 1).

Figure 1 – Registered Patents and Litigations filed (1991-2011)



Source: Price Waterhouse Cooper, *op. cit.*

At a closer look, however, whilst in the first decade of the reference period the number of patent litigations has

³³ URL: <http://www.law.stanford.edu/program/centers/iplc>.

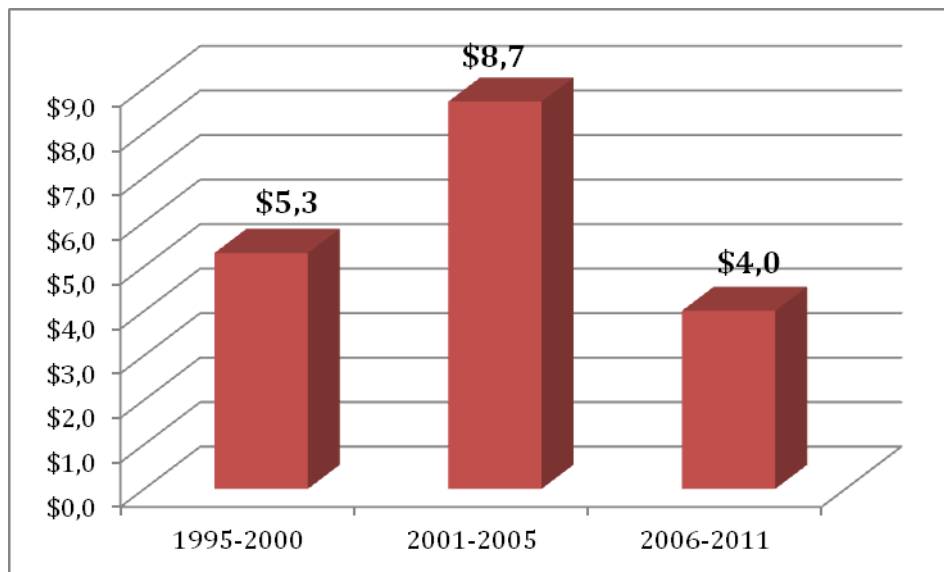
³⁴ See Price Waterhouse Cooper, 2012 - *Patent Litigation Study. Litigation continues to rise amid growing awareness of patent value*, 2012, URL: http://www.pwc.com/en_US/us/forensic-services/publications/assets/2012-patent-litigation-study.pdf.

always been above that of the total number of registered patents (whose growth rate was stable at 4.5%), since 1999 the two amounts have started to move hand in hand, following a substantially comparable trend.

Despite the aforementioned exponential growth, the economic impact of such litigations, namely the average compensation figures granted to patent holders (which with reference to the period from 1991 to 2011 amounted to about 5.3 million U.S. dollars), has been characterized over time by a not so linear trend.

If compared to the significant increase that impacted the period between 1995-2000 and 2001-2005, during which the average compensation rose from just over 5 to 8.7 million U.S. dollars (+64%), in fact the data in question suffered a sharp decline during the subsequent period, positioning at 4,000,000 U.S. dollars (Fig. 2).

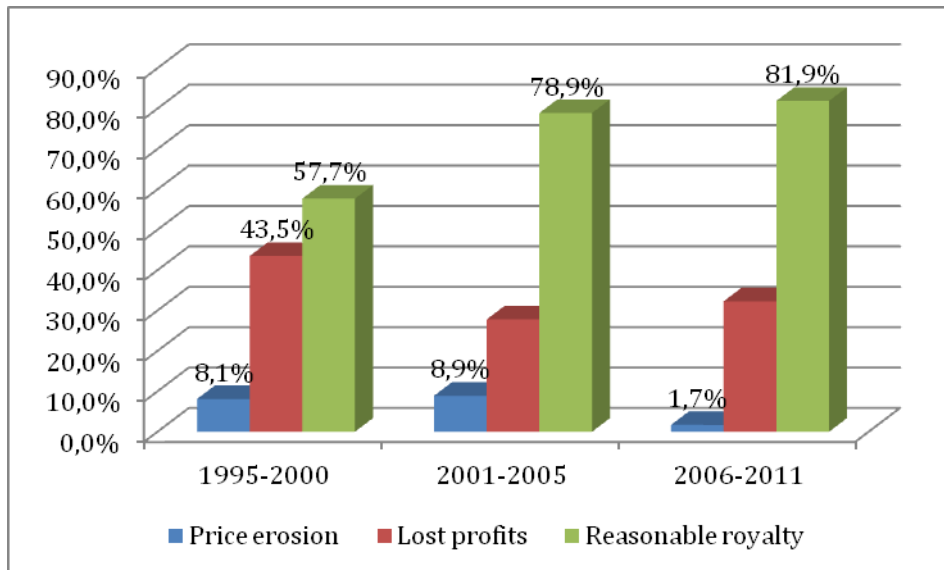
Figure 2 – Average compensation (1995-2011) (US dollars in millions)



Source: Price Waterhouse Cooper, *Op. cit.*

Changes in the composition of compensation given in case of loss in patent litigations are also noteworthy. Although in this respect the hierarchy of the different components' weight has remained unchanged, during the reference period the granted compensation charges to cover lost profits or sale prices erosion have gradually reduced, while those in reference to a reasonable royalty recognition have grown, reaching, in the 2006-2011 period, to cover more than 81% of the total value recognized by way of compensation to the patent holders (Fig. 3).

Figure 3 – Compensation charges composition (1995-2011)

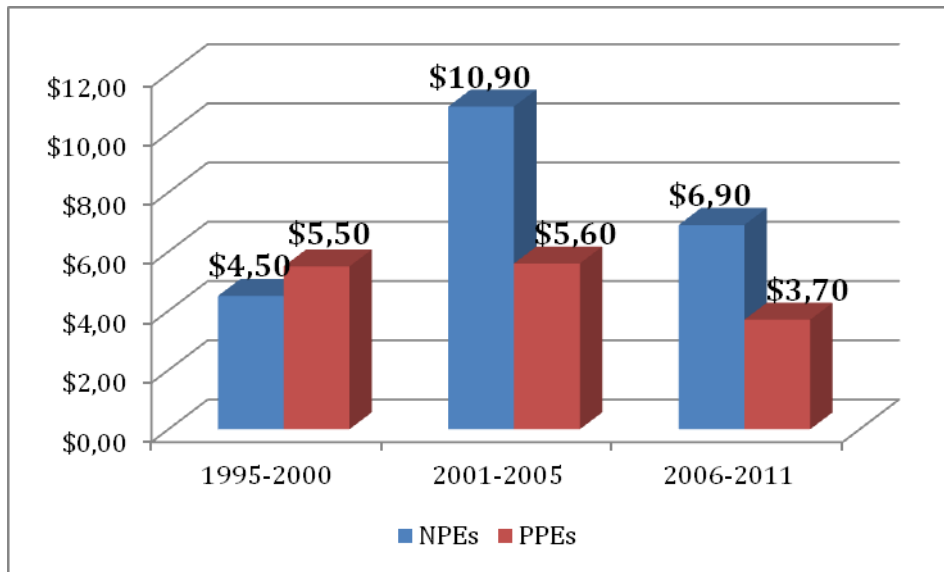


Source: Price Waterhouse Cooper, *Op. cit.*

Particularly useful for the purposes of this analysis, and also in order to assess whether, as believed by the majority, Non Practicing Entities hide behind all patent trolling activities, is the information we can get by splitting the data relative to the average compensation calculated with NPEs and Patent Practicing Entities' figures.

When analysing the trend for these two different types of entities, it is in fact very clear how the relative weight of Non Practicing Entities, whose compensation amounts, until 2000, were lower than those accorded to PPEs, went on to increase over time, and eventually stabilized above PPEs' amounts (Fig. 4).

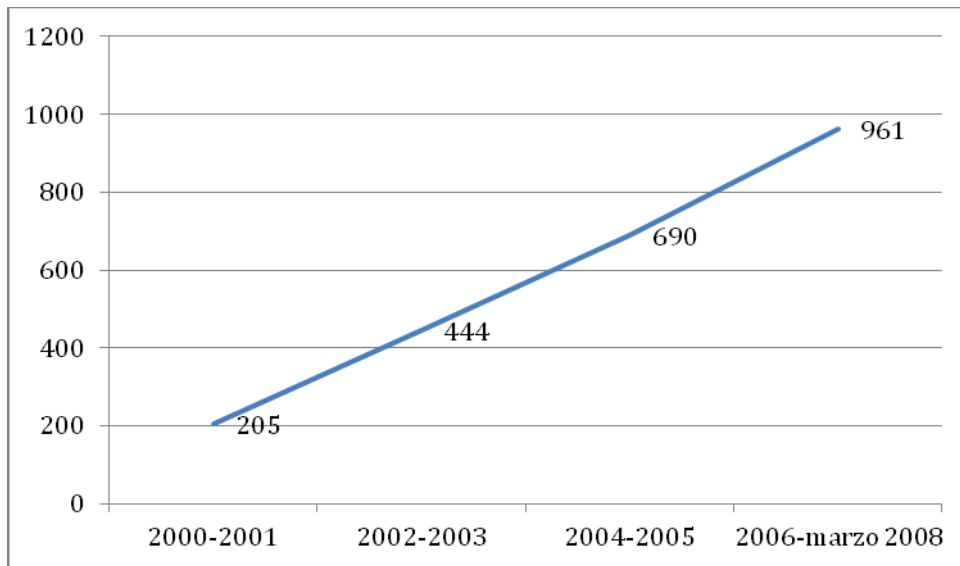
Figure 4 – Average compensation NPEs vs. PPEs (1995-2011)



Source: Price Waterhouse Cooper, *Op. cit.*

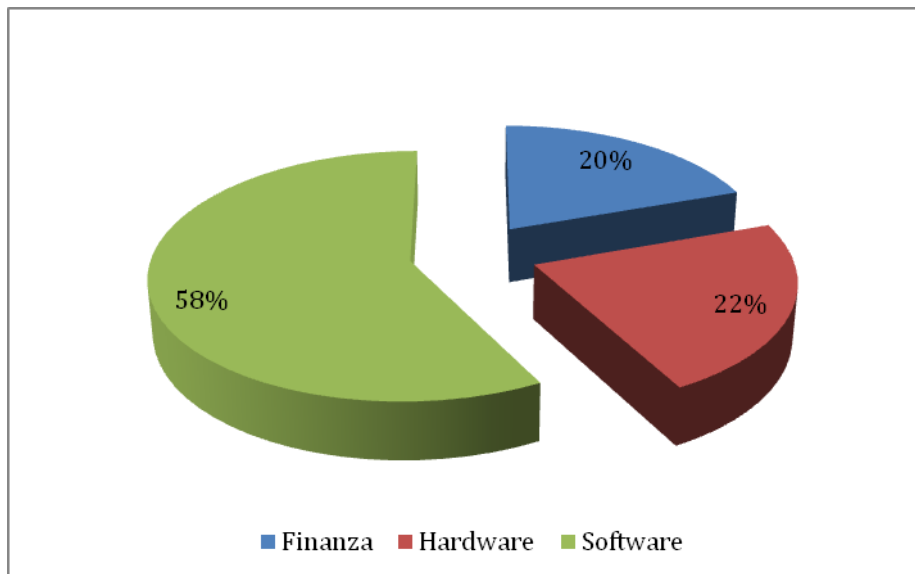
On another hand, taking into account the observations made by the Intellectual Property Litigation Clearinghouse (IPLC) with respect to the High Tech field alone, it is revealed how in the United States, between 2000 and 2008, the number of legal cases entailing patent protection has more than quadrupled, from just over 200 to over 950 (Fig. 5), with a clear majority of litigations concerning software technologies (Fig. 6).

Figure 5 – Number of litigations for high-tech patents (2000-2008)



Source: Elaboration on data reported in Chien Colleen V., *op. cit.*

Figure 6 – Litigations for high-tech patents³⁵ (2000-2008)



Source: Elaboration on data reported in Chien Colleen V., *Op. cit.*

However, the picture gets more complex and worthy of attention if one looks at the type of entities that normally have filed lawsuits within the realm of patent litigations.

³⁵ USPTO classification.

From this point of view, in fact, the survey shows that almost 80% of patent litigations is actually caused by activities carried out by both private and public companies or groups defined as non-NPEs, and not by real NPEs, as it was believed by the majority.

Although many believe that real NPEs are a destabilizing factor within the patent system³⁶, they are only involved in 17% of the number of total disputes, and even when considering those cases in which such entities, rather than becoming appellant of judicial action, were involved in mere declaratory judgments by other parties, their share of the total number patent protection litigations is still below 30% (Table 1).

Table 1 – Litigations by promoter type (% values on total number of litigations)

Authors	Hardware	Software	Financial	Total
NPE	8%	20%	23%	17%

³⁶ See Coletta C., *Red Hat Among Companies in Crosshairs of License Suit*, in Triangle Bus, 16 May 2008, p. 7, URL: <http://www.bizjournals.com/triangle/stories/2008/05/19/story13.html?page=all>; see also McCurdy D., *Patent Trolls Erode the Foundation of the U.S. Patent System*, in Sci Progress, autumn-winter 2008/2009, pp. 84-88.

Non-NPE Public Corporation	50%	41%	30%	39%
Non-NPE Private Corporation	34%	34%	41%	37%
- Large*	4%	3%	3%	3%
- Medium**	6%	4%	6%	5%
- Small***	13%	11%	10%	12%
Individual	6%	4%	5%	5%
Non-profit	2%	1%	1%	1%
Total	100%	100%	100%	100%

*: > \$ 100 million - **: \$ 10-100 million - ***: < \$ 10 million

Source: Chien Colleen V., *Op. cit.*

Similarly, when assessing the situation from the point of view of the party who is being sued, only 26% of disputes involve NPEs, against 65% that are attributable to public entities or very large private companies that are non-NPEs (Table 2).

Table 2 – Litigations by type of entity sued (% values on total numbers of litigations)

Authors	Hardware	Software	Financial	Total
NPE	13%	30%	40%	26%
Non-NPE Public Corporation	44%	31%	17%	30%
Non-NPE Private Corporation	31%	31%	36%	35%
Individual	9%	7%	6%	8%
Non-profit	3%	0%	0%	1%
Total	100%	100%	100%	100%

Source: Chien Colleen V., *Op. cit.*

Taking into consideration, instead, the size of the parties involved in the litigation as a discriminating factor, and thus referring the mythological dichotomy identified above, the context shows additional insights, especially useful to define

the specific phenomenology and to identify in which precise type of patent litigation Patent Trolls are most likely to focus their activities on (Table 3).

Table 3 – Legal actions by type of litigation

Type of litigation	Hardware	Software	Financial	Total
NPEs ³⁷	9%	21%	26%	19%
David vs. Goliath ³⁸	5%	3%	3%	4%
Small vs. Large ³⁹	15%	17%	18%	18%
Sport of King ⁴⁰	38%	36%	19%	28%
Limited Stakes ⁴¹	17%	11%	19%	16%
Predation Profile ⁴²	10%	7%	7%	8%
University/Non-profit ⁴³	2%	1%	3%	2%
Other ⁴⁴	4%	5%	5%	5%

Source: Chien Colleen V., *Op. cit.*

As it appears quite evident, in fact, the picture is dominated by litigations that involve two large entities (Sport of King - 28%), while the share attributable to Non Practicing

³⁷ This category includes legal actions promoted by NPEs or declaration judgments filed against NPEs.

³⁸ This category includes legal actions filed by single individuals against a public or very large private company, and also declaration judgments filed by public or very large private companies against a single individual.

³⁹ This category includes legal actions promoted by small private companies against public or very large private companies, and also declaration judgements filed by the latter against the former.

⁴⁰ This category includes legal actions that involve two public or two very large private companies.

⁴¹ This category includes legal actions that involve two small-medium companies.

⁴² This category includes non-declarative judgments promoted by a public or a very large private company against a small private company, and also declaration judgments promoted by the latter against the former.

⁴³ This category includes legal actions promoted by universities against non-profit entities.

⁴⁴ This category includes all legal actions that cannot fit in any other category.

Entities is still below 20%. Looking at the specific segment of disputes involving hardware patents, the difference between the big players' activism and the more moderate NPEs' hard work is even more substantial, with shares falling from a significant 38% to an irrelevant 9%.

In this case as well, therefore, the prevailing opinion seems to be far from the actual situation. The widespread perception that NPEs are entities that are always ready to take on patent litigations, as their business seems simply focused on asserting rights that are automatically stemming out of a patent ownership⁴⁵, does not in fact appear to be supported by data. This is just as untrue as the widespread belief that large high-tech companies, which are usually the main users of software and hardware patents⁴⁶, tend to avoid disputes and litigations and indeed, in that light, they build substantial patent portfolios with the sole purpose of expanding as much as possible the area of protection provided by intellectual property legislation.

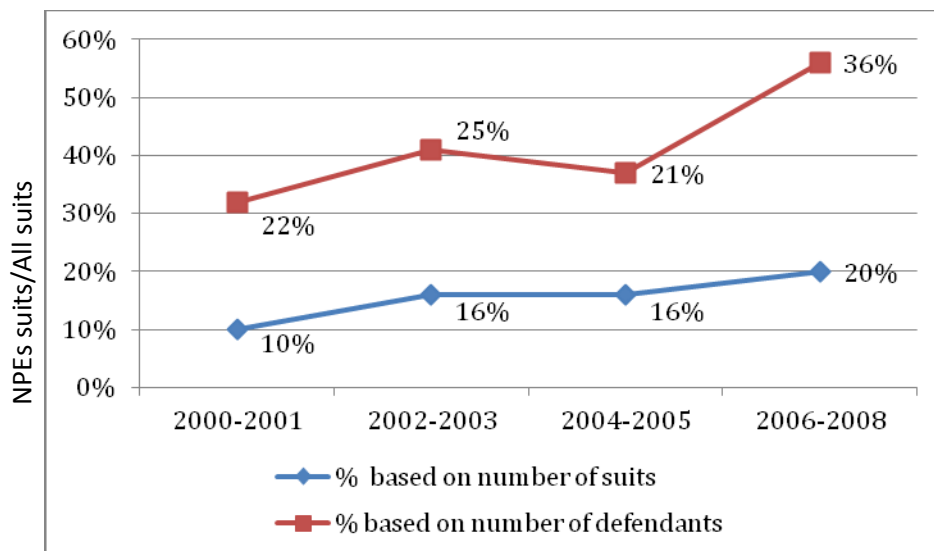
However, if on the one hand, reality tends not to meet the most common opinions in reference to NPEs responsibilities of increasing overall numbers of patent litigations, on the other hand certain emerging trends seem to confirm such perception.

⁴⁵ See Lerer L., *Meet the Original Patent Troll*, in Law.com, 20 July 2006, URL: <http://www.law.com/jsp/law/LawArticleFriendly.jsp?id=900005550324>.

⁴⁶ See Bessen J. – Hunt R.M., *An Empirical Look at Software Patents*, in Working Paper No. 03-17/R, 2004, Research on Innovation, Philadelphia, 2004, URL: <http://www.researchoninnovation.org/swpat.pdf>.

By analysing the data, in fact, it is clear how in the period between 2000 and 2008, as a consequence to the significant growth in the number of litigations related to patents, the share attributable to Non Practicing Entities was affected by significant increases, moving, in terms of number of undertaken litigations, from 10% in 2000-2001 to 20% in 2006-2008, and in terms disputes filed against them, from 22% to 36% (Fig. 7).

Figure 7 – Share of disputes having NPEs as appellant or defendant



Source: Elaboration of data found in Chien Colleen V., *Op. cit.*

This therefore leads to think that, despite NPEs cannot be held responsible for all the problems that have emerged in recent years within the patent system, they are playing a role that is worthy of attention, mainly because of the possibility, which cannot be verified on the sole basis of available data,

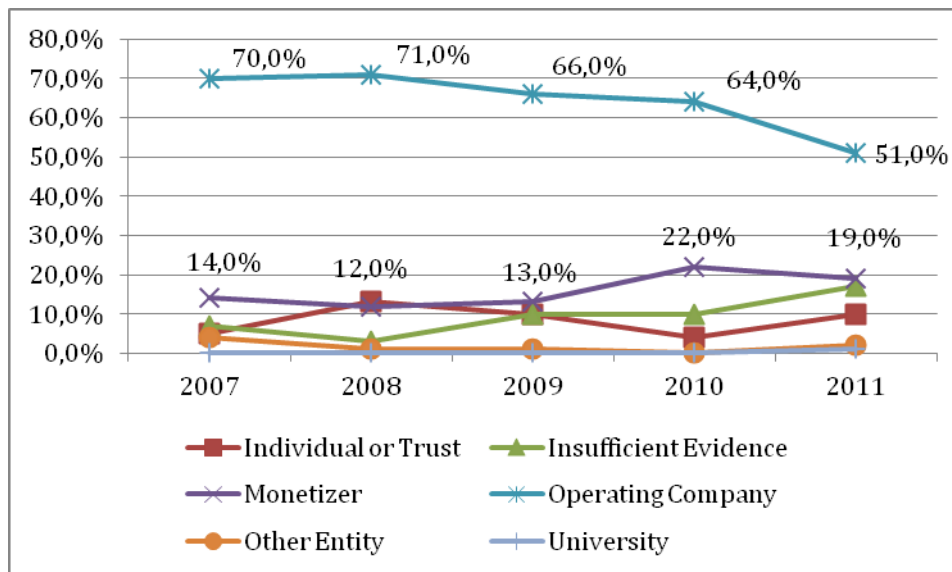
that within this category we could find very similar entities to those that are identified as Patent Trolls.

To overcome this controversial overlap, a study carried out between 2007 and 2011 tried to reorganize the data by introducing in the appellant category a different type of entity called "Patent Monetization Entities", which we identify as those subjects whose main source of income lies in patent litigations⁴⁷.

By doing so, when comparing figures related to this new type of entities with those of Operating Companies, i.e. companies whose core business is the sale of a product or the provision of a service, it became clear how, over the last few years, the effect of Operating Companies had been steadily declining, while that of Monetization Entities has grown significantly, demonstrating that a new predatory approach is characterizing more and more disputes related to intellectual property rights (Fig. 8).

Figure 8 – Patent litigations by appellant category (2007-2011)

⁴⁷ See Jeruss S. – Feldman R. – Walker J., *The America Invents Act 500: Effects Of Patent Monetization Entities On Us Litigation*, in *Duke Law & Technology Review*, 2012, vol. 11, pp. 357-389, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2158455.



Source: Elaboration of data from Jeruss S. – Feldman R. – Walker J., *The America Invents Act 500: Effects Of Patent Monetization Entities On Us Litigation*, in *Duke Law & Technology Review*, 2012, vol. 11, pp. 357-389, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2158455.

2.2 Business model of Non-Practicing Entities and patent trolling strategies

Beyond any possible semantic distinction, a significant part of the literature, perhaps on the basis of the picture outlined in the previous paragraph, tends not to recognize any distinction between Non Practicing Entities and Patent Trolls.

In light of this, in order to identify a correct discriminating factor it can therefore be useful to go beyond simple definitions and understand the structure and operational practices implemented by those who, with a clear predatory intent, build patent portfolios with the sole purpose of

exploiting the regulatory system designed to protect intellectual property for an economic return.

As it is clearly shown by reality, Patent Trolls can have many different structures⁴⁸. A typical form is that of companies that are not conducting any production or R&D activities and would buy patents for the sole purpose of enforcing them against any violators. This category naturally includes also all those companies that operate by providing support to inventors and small businesses in enforcing their own patents' rights.

An alternative form is that of companies that, even if never active in producing goods, have progressively moved their core business towards licence transfers and patent litigations⁴⁹.

Patent Trolls can finally be structured as agents working on behalf of companies that are holding patents whose protection has been outsourced, or as companies specializing in the management and defence of patents and licenses⁵⁰ or even as law firms involved in defending the rights of their clients.

⁴⁸ See Chan J. – Fawcett M., *Footsteps of the Patent Troll*, in Intellectual Property Law Bulletin, 2005, vol. 1, issue 7, n. 1-2, p. 1 ss.

⁴⁹ See Wahl A., *Cash your chips*, in Canadian Business, 8 January 2006, URL: <http://www.canadianbusiness.com/technology-news/cash-in-your-chips/>.

⁵⁰ See Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., *Patent Trolls in the US, Japan, Taiwan and Europe (Digest)*, in CASRIP Newsletter, spring/summer 2006, vol. 13, issue 2, URL: http://www.law.washington.edu/Casrip/Newsletter/default.aspx?year=2006&article=newsv13i2BrennanEtAl#_ftn73 or <http://www.tokugikon.jp/gikonshi/244kiko1e.pdf>.

The business model that usually characterizes Patent Trolls, instead, can be easily identified by analysing in detail their modus operandi. As already briefly explained, patent trolling activities tend in fact to be articulated on two main levels, the first focused on the creation of a patent portfolio through low-cost acquisitions from innovative companies, and the second centred on the identification of potential violations and the consequent enforcement activities towards responsible parties.

Leaving the analysis of the first level aside, which articulates through normal acquisition deals, either directly or indirectly, and does not exhibit clear specificities that are worth analysing in detail, it becomes inevitable to focus on the most critical, public and economically significant part of Patent Trolls' operational strategies, represented by the second level.

On this front, their actions stand far from those of a normal company that exercises rights that are stemming from the ownership of a patent to protect its products and services; and this is a first distinctive element.

In order to draw a sharp boundary, however, we must analyse in further detail the ways in which these entities usually act.

Firstly, it is important to notice that the action of a Patent Troll normally starts with a negotiation. Once it identifies a company whose products or services are produced

in violation of its patents, the Patent Troll invites the violator to correct the mistake by signing a licensing agreement that provides for a royalty payment on sales in its favour⁵¹. However, if the recipient of such transaction request is reluctant to accept the proposal, then the Patent Troll's attitude usually tends to become more intransigent and the initial availability to negotiate gives way to a more hostile and blackmailing approach, characterized by intimidation and threats to proceed via legal actions.

On this point, thus, it is worth highlighting how, for a Patent Troll, the recourse to a legal action in court would not be an optimal solution, but simply the last resort, or better said a blackmailing weapon. Its primary objective, in fact, is not so much that of having the user comply, one way or another, with their patents, but rather to get, in the simplest and less expensive way, an economic return from the operation.

For this reason, already in the first negotiation phase, Patent Trolls' approach is much different to that of any two Patent Practicing Entities during a dispute.

While in fact these latter, reasoning mainly in a business perspective, could, as it often happens, make agreements with the counterpart and resolve the dispute by signing a cross-licensing agreement⁵², which is basically a trade through

⁵¹ See Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., *Patent Trolls in the US, Japan, Taiwan and Europe (Digest)*, cit.

⁵² See Eswaran M., *Cross-Licensing of Competing Patents as a Facilitating Device*, in *The Canadian Journal of Economics*, 1994, vol. 27, n. 3, pp. 689-708.

which a company is authorized to use another company's patents and the latter is also entitled to use all the patents hold by the former, for Patent Trolls, which do not carry out any production activity and thus do not get any economic return from the productive exploitation of their patents, such negotiated solutions do not carry any value.

For all these reasons Patent Trolls' actions are never left to the case, and actually a fundamental passage in their *modus operandi* resides precisely in the choice of the right "victims".

Having essentially a speculative purpose, in fact, Patent Trolls usually focus their attention on very large companies. This on the basis of the simple assumption that, having a lot to lose from finding themselves tangled in a patent dispute that often brings about very unpredictable outcomes, and having great economic resources available, large companies will most likely be those more inclined to rapidly close litigations by adequately compensating the claimant.

If instead the infringement is carried out by small-medium companies or concerns widely used and popular technologies, Patent Trolls prefer not to direct their attacks on a single entity but to undertake a sort of "mass attack", turning their accusations against all companies in the field, sector or production chain in which the violation was identified, no matter whether they are producers, distributors or sellers.

If, finally, the violation concerns a patent that is at the basis of a particular technology whose economic exploitation

is still at an embryonic stage, the strategy of Patent Trolls becomes more defensive. In similar circumstances, in fact, along the lines of great predators, who wait around for the best moment to launch their attack, Patent Trolls limit themselves to remain in the shadows and observe how the situation evolves, so to act only once the technology developed through the patent in question becomes well established and the interests invested by one or more companies in the technology are more conspicuous⁵³.

As it is rather obvious, thus, in all aforementioned cases Patent Trolls' approach follows a specific path with the ultimate goal of putting all targeted companies in front of a forced choice between two quite costly options: either accepting a licensing agreement and thus start paying royalties, without for that matter having any juridical certainty over whether a breach of the patent had really occurred, or else strike back and continue with the litigation.

2.3 Defence strategies

The understanding of Patent Trolls way of pursuing their objectives represent a key passage in order to identify, in the

⁵³ See Garker D.G., *Troll or no Troll? Policing Patent Usage with an Open Post-Grant Review*, in *Duke Law & Technology Review*, 2005, vol. 9, issue 7.

range of all possible defence strategies, those that are most suitable and effective.

In general terms, counter actions and containment strategies against the threat represented by patent trolling activities can be set up by following two very different approaches, a reactive one and a proactive one⁵⁴.

The reactive approach presumes, obviously, that a company was attacked by a Patent Troll, which in turn files, usually through a written communication, the patent infringement.

A first possible answer to such a threat could easily be that of overlooking the request, with the hope that the appellant would give up or turn its attention somewhere else.

Alternatively, the company under attack can accept the Patent Troll proposal and thus sign a licensing agreement, maybe even trying to negotiate on the economic terms of the deal, or, if convinced it would have a chance at winning because of the clear inconsistency of the request or because of the evident weakness of the appellant, it could react to the threat and strike back fielding all organizational and legal resources at its disposal, accepting also all of the risks that can derive from such situation in terms of reputation and productivity.

With reference to this last possibility, moreover, it is worth highlighting how, unlike companies being accused of

⁵⁴ See Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., *Op. cit.*

producing, selling and thus profiting from patent violations, Patent Trolls operate, de facto, from an advantaged position. This is determined by their own nature, namely by their being totally free from productive exploitation of patents and thus immune to the consequences that could derive on this front from a patent dispute, not only following a possible unfavourable ruling in court, but also at an earlier stage, because of many legal mechanisms, such as the blocking of sales and/or production imposed by a court for the protection of those parties whose legitimate patent rights were allegedly being infringed.

Patent Trolls' lack of production consistency carries also, in some legal context such as that of the United States, additional advantages deriving from this situation, which are not all shared by the entire legal system⁵⁵, of being exclusively under the jurisdiction of the State they were registered in, obstructing de facto the chance of all the entities under attack of asserting their rights by asking for a non-violation ruling in a competent court⁵⁶.

On a more general note and with the precise objective of anticipating the moves of Patent Trolls outside a restricted reactive logic only set up on direct confrontation, companies can organize their activities following a more proactive vision, thus putting as a common factor all efforts and resources to

⁵⁵ See *Overstock.com Inc. v. Furnace Brook and OpenLCR.com Inc. v. Rates Technology Inc.*

⁵⁶ See *Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., Op. cit.*

become promoters of systemic initiatives, legal innovations or of the circulation of shared defence strategies.

In this last field, it is worth noting how in the recent past certain companies or PPEs, following a rather widespread trend, have believed, maybe neglecting a fundamental aspect, they could limit the threat of Patent Trolls by extending their patent portfolios⁵⁷ or by signing cross-licensing agreements.

As already highlighted before, in fact, the effectiveness of such solutions necessarily crashes with the non-productive nature of Patent Trolls, whose activities cannot in any case contemplate violations of other entities' patents⁵⁸ and thus find a limit within the extension of protection radius of others' patents.

In other terms, since Patent Trolls' business exclusively gravitates around its own patents, and specifically takes the form of filing litigations in the guise of a party damaged by others' violations, it comes natural that the size of the patent portfolio held by potential victims is almost irrelevant and that the very reason for such business to exist remains basically unchanged even in the face of significant patent portfolios.

2.4 Patent trolling activities between legal sustainability and perceived unsustainability: some exemplar cases

⁵⁷ See Garretson R., *Intellectual Security: Patent Everything You Do, Before Someone Else Does*, in CIO Insight, 5 December 2005, URL: <http://www.ciointer.com/article2/0,1397,1902227,00.asp>.

⁵⁸ See Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., *Op. cit.*

As further proof of what ascertained before, and also with the intent of highlighting how Patent Trolls' business model and strategies, in spite of a quite widespread opinion, do not represent or prefigure potential legal violations of the norms set to protect intellectual property rights, but actually represent in substance the exercise, strictly speaking, of these same rights, it is useful to review some cases of patent litigations that are considered exemplar by literature on the theme we are currently analysing.

2.4.1 NTP Inc. vs. Research In Motion Ltd

One of the most significant cases among those quoted in the literature with reference to Patent Trolls is certainly that which saw as main character NTP, an American company founded in 1992 by Thomas J. Campana Jr. (inventor) and the patent attorney Donald E. Stout and which owns a portfolio made up of about fifty patents that cover everything from wireless email transmission to RF antennas' design⁵⁹.

Claiming the ownership of some patents, linked, particularly to wireless email, in November 2011 NPT reported Research in Motion (RIM), Canadian company, headquartered in Ontario and specialized in the development

⁵⁹ See Hughlett M., *Blurry on Blackberry*, in Chicago Tribune, 19 February 2006; Eisler K.I., *BlackBerry Blues*, in Washingtonian, 1 September 2005.

and sale of the popular BlackBerry devices, with the accusation of having illegally used in the aforementioned smartphones technologies that were covered by 5 of their patents⁶⁰.

The long litigation that for five years involved the two companies in court started when NTP pressed charges and requested that RIM, while waiting for a court ruling, would stop the smartphones' sales and relative services immediately. With respect to such request, the counterpart, denying having infringed any laws and leveraging on the "public" utility of the services they offered through BlackBerry devices – very often used in the working environment from health operators and assistance and national security agents, including the staff of President Bush – claimed that the suspension would be premature.

Two years later, in 2003, NPT's initiative found the court consensus. The judges, in fact, ordered RIM to pay 53.7 million US dollars as compensation for damages. While waiting for the appeal resolution, nonetheless, the payment order was suspended, letting the BlackBerry company keep on with its activities⁶¹.

After a long litigation period, in March 2005, the two companies seemed to have found an agreement, with the offer, extended by RIM, to pay NTP 450 million US dollar for the

⁶⁰ See Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., *Patent Trolls in the US, Japan, Taiwan and Europe (Digest)*, cit., p. 74.

⁶¹ NTP Inc. v. Research in Motion Ltd, No. Civ.A. 3:01CV767, 2003 WL 23100881 (E.D.Va. Aug. 5, 2003) (final order).

use of one of the patents in question⁶². In the following months, though, NTP decided to backtrack claiming that the agreement terms were too “vague and ambiguous” and thus requesting again for BlackBerry services to be suspended⁶³.

At that point, in order to overcome the deadlock and try to regain the enforcement of the agreement previously signed by the counterpart, in December 2005 RIM decided to turn to the courts, asking judges to force NTP to accept their offer and withdraw the charges. To support their request RIM brought to the court’s attention the fact that they were always undertaking negotiations in good faith, noticing instead the counterpart’s reluctance to finalize documents and accusing them of having unjustifiably prevented a peaceful resolution of the conflict in course. The same RIM also asked Richmond’s Federal Court to postpone its decision on the trial while waiting for the US Patent and Trademark Office (PTO) response. Such request was denied by the regional Court on the ground that the examination of all other patents involved could take years.

The decision then became binding and, acknowledging there was no “valid” agreement between the parts, the Federal Court annulled the 450 million US dollar agreement, intimating RIM not to continue with the undertaken approach

⁶² See Simon E., *Maker of BlackBerry settles patent-infringement suit*, in Seattle Times, 17 March 2005.

⁶³ See Avery S., *Collapse of RIM's patent deal with NTP stuns investors*, in Toronto Globe and Mail, 11 June 2005.

and thus to desist from asking the court to impose NTP the acceptance of their claims⁶⁴.

A few months later, in February 2006, while waiting for the final judge decision on NTP's request of blocking BlackBerry sales worldwide and the suspension of RIM's services in the US, the US Patent and Trademark Office started evaluating the validity of the 5 questioned patents that NTP had claimed as its own, eventually rejecting one of them.

Despite the US Patent Office decision, which however had still not ruled on the remaining four licences, NTP decided not to give up, claiming that the patents' validity could not be simply ruled out through the PTO's preliminary actions and actually claiming that it was ready to closely follow the entire re-examination trial, even if that meant waiting for years, and even if they could simply oppose the decision by recurring to legal action.

RIM, on its hand, in case the Federal Court was to pronounce an unfavourable ruling, was risking to be sentenced to pay a very big sum of money as compensation for damages – the estimate was around 1 billion US dollars – and, if the controversy had not been resolved and NTP had not decided to give up on the reimbursement, RIM could still have experienced the suspension of BlackBerry sales in the US, a key market for the company generating more than 70% of all revenues.

⁶⁴ See Brockman J., *Judge defers ruling on BlackBerry case*, in International Herald Tribune, 25 February 2006.

Considering the potential damages they were incurring, RIM agreed, before the Federal Court ruled its decision, to pay NTP 612,5 million US dollars in exchange for a continuous licence on their technologies and thus be able to rightfully use them on their smartphones. The Canadian company, folding to its counterpart's requests, defined the decision as an "owed act, but not shared in substance".

International press was greatly interested in the litigation, looking at it with a critical eye and «controversially commenting on how NTP was a company with no employees and most of all with no production activities. It had never even tried to make a deal out of the patents it owned, for example by selling them. Luck showed up at the company's door under the guise of RIM. The Canadian company, mother to BlackBerries, gave them the key to success, opening up the world of email services. NTP only had to come forward when everything had already been done. When BlackBerry already counted millions of users. And the business was definitely interesting»⁶⁵.

The dispute against RIM that closed so favourably for NTP was nonetheless not the only one undertaken by the American company: after having received more than 612 million US dollars to close the patent litigation concerning BlackBerry, in fact, the same NTP, which as previously mentioned owned a large number of patents concerning new

⁶⁵ See Mei A., *La guerra dei brevetti non si ferma al Blackberry*, in *Il Giornale*, 8 March 2006.

technologies used by all the biggest players in the industry, sued – after having tried in vain, according to declarations by NTP co-founder Donald Stout, to try and solve the controversy in a “friendly” way – also Palm, Treo smartphones producer, accusing it for the violation of some of their patents concerning wireless email services.

The same thing happened then with a series of different American telecommunications operators (AT&T, Sprint Nextel, T-Mobile e Verizon Wireless) and, more recently, with giants like Apple, Google, HTC, LG Electronics, Microsoft and Motorola, being sued as well from NTP for the alleged violation of 8 patents concerning mobile email services. Some other companies, like Nokia, HP and Samsung, in order to avoid any litigation, have signed licensing agreements with NTP.

NTP’s position is anyway very clear: as claimed by Stout, in fact, «Use of NTP's intellectual property without a license is just plain unfair to NTP and its licensees. Unfortunately, litigation is our only means of ensuring the inventor of the fundamental technology on which wireless email is based, Tom Campana, and NTP shareholders are recognized, and are fairly and reasonably compensated for their innovative work and investment. We took the necessary action to protect our intellectual property»⁶⁶.

⁶⁶ See *NTP Sues Apple, Google, HTC, LG, Microsoft and Motorola for Infringement of Wireless Email Patents*, URL: <http://www.prnewswire.com/news-releases/ntp-sues-apple-google-htc-lg-microsoft-and-motorola-for-infringement-of-wireless-email-patents-98101629.html>.

NTP has anyhow come forward as available to evaluate, together with its counterparts, any further negotiating solutions with the aim of signing licensing agreements with favourable conditions for all parties involved.

Beyond this small opening, nonetheless, the case that we just analysed shows how actually, mostly from a mere legal point of view, Patent Trolls act in compliance with the normative context of reference and very often find in such legal frameworks more of an enabling factor than a limit.

2.4.2 Eolas Technologies Inc. vs. Microsoft Corp

A potential case of patent trolling that raised considerable interest because of the great repercussions it could have generated on the world of the web is the litigation which took place between Eolas Technologies (an Illinois company specialized in the development of web surfing technologies) and The University of California against Microsoft⁶⁷.

The accusation which sustained such dispute, initiated in 1999 against the world's greatest software producer, was that the Redmond (WA, USA) company had used within their Internet Explorer program a web browsing technology (specifically, the mechanism used by browsers to allow the use

⁶⁷ See Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., *Patent Trolls in the US, Japan, Taiwan and Europe*, cit., p. 74.

of plug-ins and add-ons) in violation of a patent owned by Eolas with reference to a specific technology used to integrate additional functionalities offered by external software into browsers.

In August 2003, an inferior court held Microsoft responsible for having wrongfully exploited the third party technology without asserting their right as patent owners and thus sentenced Bill Gates' company to pay 520,6 million US dollars as compensation for damages (75% to Eolas and 25% to California University).

Microsoft, certain to be able to get the sentence overturn in appeal and in order to finally convince everyone of its correct behaviour, decided to file a claim, succeeding in march 2005 at achieving a much better result: the Court of Appeal, in fact, rejecting the inferior court's first decision, ruled for the restitution of the total amount granted as compensation for damages plus any interest accrued.

The appeal judges particularly, by accommodating Microsoft's requests, recognized, in its defence, some previous evidence with reference to the patent in question, ruling that a browser named Viola, developed in 1993 by a researcher at Berkeley University (Perry Pei-Yuan Wei) was already using the technology at issue before Eolas registered the patent and thus was to be considered potentially as "prior art" opening the road to a possible patent invalidation declaration for Eolas. The logical consequence to finding an application that was

existing before the patent registration (prior art) is in fact that of having to consider the new patent as null and void.

Invested with the re-examination of the legal case on the basis of new evidence that emerged during the appeal, the Supreme Court of the United States, in November 2005, refused to proceed to examine the case, thus enabling Microsoft, as it was decided in appeal, to submit the case again to the district court.

The dispute, anyhow, was far from being resolved. In the meantime, in fact, Eolas managed to get considerable support from the US Patent and Trademark Office, which, after deep and careful analysis, claimed that it believed Eolas' patent was fully valid.

At that point, in order to avoid conflicts and to prevent the risk of having to pay compensation for damages to its counterpart, Microsoft, even if still professing its innocence in the court, decided to modify its browser to adapt it in a way it would not violate Eolas' patents.

In this case as well, therefore, it is quite clear how, beyond any moral judgment against patent trolling activities, these do not violate any laws or norms and they build their stability and their economic value precisely on the assumption of complying with legal systems.

2.4.3 MercExchange L.L.C. vs. eBay

An exemplary case of how patent litigations can, even in spite of certain limits imposed by court rulings, be profitable for appellants, concerns the online auctions website eBay, accused of patent violation by MercExchange for the improper use of a patented technology registered in 1995 by Thomas Woolston, founder of MercExchange, for their “buy it now” service⁶⁸.

The legal battle between the two companies started in 2001 when MercExchange, at the time also in the business of online auctions, pressed charges and asked for a payment order against eBay in order to make it stop using the service that was wrongfully exploiting the patent in question⁶⁹. In that same year, the jury ruled against eBay, sentencing the payment of 35 million US dollars, without however requesting to stop the provision of the contested services.

MercExchange reasons were accommodated once more by a trial court two years later, when the judges confirmed a verdict of guilt, even if the compensation amount was reduced to 29 million US dollars and again the request for eBay to stop

⁶⁸ See Forsberg H., *Diminishing the attractiveness of trolling: the impacts of recent judicial activity on Non-Practicing Entities*, in PGH. J. TECH. L. & POL'Y, 2011, Vol. 12, No. 4, Fall, p. 1 ss. ; McCarthy E., *Waiting Out A Patent Fight With EBay*, in Washington Post, 6 January 2005.

⁶⁹ See CASRIP (Center for Advanced Study & Research on Intellectual Property), Newsletter, Spring/Summer 2006, Vol. 13, Issue 2, URL: <http://www.law.washington.edu/casrip/Newsletter>.

service provision with reference to the violating functionalities was rejected.

During the appeal, though, MercExchange was able to finally get the Court to order eBay to pay on the basis that «We therefore see no reason to depart from the general rule that courts will issue permanent injunctions against patent infringement absent exceptional circumstances»⁷⁰.

The situation, however, faced a complete overturn with the verdict ruled in May 2006 by the Supreme Court of the United States, which, by rejecting both the original court decision and the appeal resolution, de facto re-opened all games, sending the dispute back to the lower courts. The Supreme Court moreover ruled that the patent infringement in question did not constitute sufficient reason for imposing an injunction⁷¹, as this required to verify whether all four factors considered essential to be met in order to issue an injunction were in fact met, namely:

1. that it has suffered an irreparable injury;
2. that remedies available at law are inadequate to compensate for that injury;
3. that considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted;

⁷⁰ MercExchange, L.L.C., v. eBay, Inc., 401 F.3d 1323, 1326 (2005), at 1339.

⁷¹ See Davis R.M., *Failed attempts to dwarf the Patent Trolls: permanent injunctions in patent infringement cases under the proposed Patent Reform Act of 2005 and eBay v. MercExchange*, in Cornell Journal of Law and Public Policy, 2008, Vol. 17, p. 446 ss., URL: <http://www.lawschool.cornell.edu/research/JLPP/upload/Davis.pdf>.

4. that the public interest would not be disserved by a permanent injunction⁷².

In the case in question, therefore, the judges' ruling has de facto imposed a significant legal limit to the activities of Patent Trolls, having the Supreme Court highlighted that for NPEs, who «use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees», «an injunction, and the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent».

On the basis of such considerations judges have additionally ruled that «when the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest».

As it may be noted, therefore, the scope for innovation within the legal decision lies in two main aspects: on the one hand having identified the business model used by the owners of patents and license rights, and having established that in many cases, as in this one, the issuance of an injunction is not only unnecessary, but can even prove to be contrary to the public interest⁷³ on the other.

⁷² See *eBay Inc. v. MercExchange LLC*, 547 U.S. 388 (2006).

⁷³ See Forsberg H., *Diminishing the attractiveness of trolling: the impacts of recent judicial activity on Non-Practicing Entities*, cit., p. 16.

The legal dispute went on around the central issue of patent infringement: after eBay, in December 2007, was convicted and ordered to pay 30 million US dollar to the counterpart by a federal judge in Virginia, the two companies finally agreed, at the beginning of 2008, to sign an arrangement whose financial terms have not been revealed yet. Basically though, both parties agreed to waive any future legal action, while eBay committed itself to the acquisition of all the disputed patents. In the end, therefore, even if incurring in the disapproval of the judges, the alleged patent trolling activities have had their intended effects and generated a significant economic return for the patent holder.

CHAPTER THREE
COMPARATIVE ANALYSIS OF DRAWBACKS AND
BENEFITS OF PATENT TROLLING

3.1 Introduction

On the basis of the findings highlighted in the previous sections, it is quite clear how the phenomenology of Patent Trolls represents for companies, and thus for the overall economic system, a substantially heavy element bringing about consequences that are far from negligible.

While this represents a valuable feedback on its own, such a finding is not sufficient in itself to clearly outline the nature of some controversial players like Patent Trolls in the competitive environment, let alone to establish with certainty whether they should be necessarily seen as a harmful abnormality, to be fought or controlled as they bring costs and disadvantages that inevitably harm the system and the community, or whether they can be viewed as a positive and encouraging development of the market, because of their ability to allocate resources more efficiently and effectively.

To try and give an answer to this dilemma, which is in fact the ultimate goal of this analysis, it is necessary to investigate further and browse through the literature to find the

most reliable opinions and the latest evidence on the subject, in order to seek confirmation and feedback in one direction or the other.

All this will enable us to highlight how, in spite of the wide-ranging debate and the numerous different standpoints, as of today the literature on the subject has not yet overcome the many differences of opinions and agreed upon a definite and shared opinion, not only on the positive or negative valence of Patent Trolls to the market and consumers, but also on basic issues such as their precise identification or even their very existence.

To be fair, the long doctrinal dispute around trolling activities has seen a partial evolution over time. If at the beginning the wide majority was more inclined to give a strictly negative connotation to the phenomenon, recently there has been a slight change and a new broad and precise opinion has come to life, which even if not totally disregarding all the evidence brought in support of the most recent criticisms, suggests a more positive view of Patent Trolls and claims that their role within the entire economic system is not only legitimate and compliant with the law, but also useful and beneficial.

Although such evolution does not yet determines the necessary final and unique doctrinal position on the subject of Patent Trolls, it is essential to frame a proper regulatory environment and at the same time it is certainly an interesting

development, which on top of anticipating a possible future legitimization of the phenomenon, rejects for the most part the mythology that surrounds their activities and, most importantly, it reveals how the costs they carry could be more than offset by a large number of benefits in the sector of patents. This turns out to be important as the growth and development prospects of any economic system are, and will continue to be, based on the existence of intellectual property law.

3.2 Patent Trolls as distorting elements

The contributions that in the literature are supportive of the thesis on the dangerousness of Patent Trolls all stem from a fundamental assumption, namely that the objective of the legal frameworks established to protect intellectual property is primarily, and mainly, that of facilitating innovation and promote technological progress through the development and diffusion of new inventions, while achieving a system that is able to guarantee the rights of those who own such inventions or have made them possible in any way⁷⁴.

In this view, which seems to be laying its foundations on the traditional subordination of the individual interest to the

⁷⁴ See Forsberg, H., *Diminishing The Attractiveness Of Trolling: The Impacts Of Recent Judicial Activity On Non-Practicing Entities*, in Pittsburgh Journal of Technology Law and Policy, 12 April 2012, p. 2, URL: <http://www.commonlii.org/in/journals/INJIPLaw/2008/3.html>.

wider public one, Patent Trolls and their exclusively “non-productive” use of patents they own are clearly identified as a foreign body to the system, like a sort of virus that, by its nature, hinders technological progress and therefore slows down economic growth and affects social development.

In other words, according to negative opinions the most critical aspect of trolling activities resides actually in the separation from the patent ownership and its productive use or, to be even more precise, from the patent and what is, according to them, its *raison d'être*.

As seen above, in fact, Patent Trolls are characterised by a rather unusual use of intellectual property rights. In contrast to the traditional approach, which sees the patents regulations as an effective and fundamental tool to protect the legitimate interests of new inventors that want to profit from their inventions through their productive use, thus favouring social progress, Patent Trolls acquire and accumulate patents not with the aim of creating innovative goods and services, but only to monetize a specific part of the rights they are entitled to, and in particular the one relating to the compensation component provided in case of patent infringement by third parties. All this, moreover, is usually carried out by operating outside of the usual investigation and sanction process for patent infringement and by utilizing the legal framework with all its implications and difficulties, not with its intended final objective in mind, but as a blackmailing weapon with almost

“extortive” purposes, thus to get an economic return from alleged violators, possibly even before a proper court ruling.

In this role, then, as pointed out by the most critical observers, Patent Trolls would represent a double threat, since, on one hand, they would act as distorting elements to the development dynamics that could even prevent a successful use of intellectual property and therefore of the full intrinsic potential of human mind, and on the other they would contribute to form a distorted standard of use and hinder the defensive function of laws and procedures set to protect intellectual property rights, burdening the judicial system and generating both direct and indirect costs to institutions, companies and, in general, society.

This, of course, on the basis of an additional belief, namely that all patent litigations that ended with an agreement reached between the parties and in the absence of a judge’s ruling do not represent the result of a combined action of free markets’ dynamics and, thus, are not the best possible compromise between two or more conflicting parties, rather they represent the exact opposite, namely the result of a sort of extortion carried out in the open, and as such they nurture the inability of regulatory institutions, whose work is seen as essential, to promote innovation and govern the market preventing drifts that could be adverse to the public interest.

Let’s now try to understand better and in more detail which motivations drive an important part of the literature to

classify, still today, Patent Trolls as a danger and to consider necessary an intervention to limit their actions as much as possible.

3.2.1 Trolling as a brake on innovation

The main reasons cited by the doctrine for its hostility against Patent Trolls refer to innovation. Several authors are in fact in agreement that trolling activities represent a brake on scientific progress because of their impact on transaction costs related to technological development and intellectual property rights affirmation processes⁷⁵.

According to observers, in fact, where Patent Trolls exist, research and development activities must be necessarily anticipated by a preventive activity aimed at identifying any previously registered patents that could in some way conflict with the result intended by the aforementioned activities, be it a microprocessor, a new technological tool, a new software or else.

Moreover, precisely because of the existence of Patent Trolls, such action could never be limited to the sole determination of any overlaps, but should also be extended to the identifications of all those patents that, although feebly

⁷⁵ Cfr. Rajkumar V., *The Effect of Patent Trolls on Innovation: A Multi-Jurisdictional Analysis*, in *Indian Journal of Intellectual Property Law*, vol. 1, 26 December 2008, p. 3 ss.

connected, could be used as a pretext to open a dispute for suspected patent infringement.

Such wide and varied research, which has become to be essential to reduce the risk of Patent Trolls' attacks, according to the most hostile literature, would bring with it the need to bear an additional amount of costs which would then result in an increase in the overall costs associated with development processes and, therefore, in a reduction in the number of initiatives with an innovative vocation, i.e. the probability that the system as a whole is receptive to the development of new technologies and solutions⁷⁶.

In addition to these costs, those that arise from the involvement in an infringement case would add up, because of the legal costs and expenses relating to individuals employed in the management of litigations, whose weight would be a burden, not only on the stock of financial means available for development and innovation processes, but also on the quantity and quality of human resources destined to them⁷⁷.

Finally we cannot neglect any possible cost that, under an operational and economic point of view, would come up in the event of an adverse conclusion to the litigation, whether

⁷⁶ Cfr. Harkins C., *Fending Off Paper Patents and Patent Trolls: A Novel "Cold Fusion" Defense Because Changing Times Demand It*, in Albany Law Journal of Science and Technology, 2007, vol. 17, pp. 407-434.

⁷⁷ See. Kobylarz Xenia P., *Extreme Makeover: from Patent Troll to the Belle of the Ball*, in IP Law & Business, 15 February 2007, URL: http://www.law.com/jsp/article.jsp?id=900005553554&Extreme_Makeover_From_Patent_Troll_to_the_Belle_of_the_Ball&slreturn=20130017095442 (last visit January 2013).

they would be related to a court ruling or simply resulting from negotiations between the parties.

On this point, in fact, some findings show how in most cases the companies involved in a patent litigation are basically forced to come to terms with the applicant and recognize him the right to license. On one hand, the costs that should be paid in order to avoid any disputes by redesigning the product so as to avoid the patent being infringed⁷⁸ are substantial. On the other hand, if the choice was to oppose the request and thus to take a long legal battle, it would take form as operational risk, which, besides being economically burdensome, would also entail an exposure to the dangerous possibility of a stop in production and sales by means of a permanent injunction⁷⁹.

Beyond such positions that are taken on the basis of considerations which, although acceptable, cannot be considered more than a mere dissertation based on theoretical principles, certain authors wanted to verify data in hand, namely if Patent Trolls' actions actually cause negative repercussions on the level of innovation and progress, or if instead, as claimed by a part of the literature that we will

⁷⁸ See D'Incelli G., *Has Ebay spelled the end of Patent Troll abuses? Paying the toll: the rise (and fall?) of the Patent Troll*, in *Miami Business Law Review*, University of Miami, 2008-20009, vol 17, p. 347. See also Radack D.V., *Patent Trolls: pay up or fight?*, in *Law Journal*, 4 August 2006, p. 3: «Manufacturers often have to choose between the risk of being sued for infringement after they sink costs into invention or production, or dropping innovative or productive efforts altogether. Either option can injure economic welfare».

⁷⁹ See Kahaulelio Gregory J., *The Troll next door*, in *John Marshall Review of Intellectual Property Law*, vol. 6, fasc. 92, 2007, p. 293, URL: <http://www.jmripl.com.php5-10.dfw1-2.websitetestlink.com/articles/Gregory.pdf>.

analysed later, the activities of trolling exert a beneficial effect on the processes of R&D and are able, in fact, to unlock the market for patents and to facilitate internal negotiations, while at the same time also providing greater protection for small innovators and inventors, otherwise unable to defend their creations in a context driven by large multinational players hardly threatened by small companies that lack resources and experience.

In this context, a recent study⁸⁰ is particularly useful as it was conducted with the sole purpose of investigating the role played by Patent Trolls and detecting whether their activities, which usually end up subtracting a portion of the value generated by the productive use of a patented innovation, would actually result in the protection of helpless developers, also through the inflow, for them, of a portion of the value that was taken from the alleged violators.

In particular, the analysis takes into consideration two separate dimensions: once concerning the values of companies involved in a specific patent litigation, and a second one more focused on the ability of patent Trolls to transfer part of the gathered financial resources to those who develop new applications and solutions, namely inventors. This is ultimately to assess whether the disincentive to innovate brought about by trolling activities against companies that are then called upon

⁸⁰ See Bessen J.E. - Meurer M.J. - Ford J.L., *The Private and Social Costs of Patent Trolls*, in Law and Economics Research Paper No. 11-45, Boston University School of Law, 19 September 2011, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1930272.

negotiating a truce in the alleged patent infringement battle, would then transform, on the opposite side, into an incentive for small developers to innovate and thus into a benefit for the whole community.

To understand the generated impact on the value of a company that is called to defend itself in a patent litigation, the research has taken into consideration specific stock prices of a sample population of companies between 1990 and 2010, registering any stock price fluctuation during the days immediately after the beginning of a patent infringement dispute.

All this started on the basic assumption that, on one side, the company stock price would reflect investors' expectations on future profits and, on the other side, that the announcement of its involvement in a patent litigation would determine a contraction of such expectations and, thus, a reduction in the stock value. The causal link that explains how events in the judicial field have repercussions on the economic and financial one is straightforward: having full knowledge of the significant costs that the company will be called to bear for the management of the patent litigation and the impact that these will generate on profits, investors will be inevitably pushed to re-evaluate their expectations on the profitability of the company and this will of course influence their investment choices and the general sentiment within the market, negatively influencing the stock price.

Obviously a lot will also depend on how investors believe the judicial dispute will evolve and therefore if they foresee that the alleged violator not only will have to bear all the inevitable legal expenses, but will also have to sign a licencing agreement or even renounce/postpone any possible future opportunities⁸¹.

It should finally be noted that all conducted surveys have the advantage of taking into account the fact that possible stock price fluctuations of companies that are involved in a patent litigation could also not be totally related to such event, but could be due to other market events or to specific conditions of the company. With this in mind, the numerous fluctuations registered following the beginning of a patent trial have been taken into consideration without the normal stock price volatility, enabling researchers to try and isolate as precisely as possible the actual changes that are due to the company's involvement in a patent dispute and to estimate in this way the loss in value determined on average by this event.

Turning to the results, the research shows how, by aggregating data on stock fluctuations during more than two decades, it appears that the overall total losses experienced by companies that had to defend themselves in a litigation for patent infringement amount to more than 500 billion US dollars and that, in the four years preceding the period

⁸¹ See Bessen J.E. - Meurer M.J. - Ford J.L., *The Private and Social Costs of Patent Trolls*, cit., p. 4.

considered by the survey, such loss of wealth has exceeded 83 billion US dollars per year.

The aforementioned amounts, nonetheless, do not quantify yet the net loss incurred by society as a whole and this because of a simple reason, i.e. the amounts are simply accounting for the overall loss registered within a specific scope, namely within the market capitalization levels of the companies involved in a patent litigation, without taking into account any possible benefits that society as a whole could have obtained in other contexts, like for example the increase in the propensity to innovate of small companies and inventors.

In order to correctly evaluate the overall social costs connected to the litigation, the analysis first suggests to clearly distinguish between what is defined as the “static effect” and what is instead defined as the “dynamic effect”.

The first essentially relates to the impact caused by patent litigations on social welfare at present and takes into account the net balance between the value lost on one side and the possible value gained on another side. If, in fact, the patent litigation’s effect on society as a whole was to substantiate in a wealth transfer from a certain category of subjects (for example big companies suspected of acting in infringement of others’ intellectual property) to another class of individuals that are involved in socially useful activities (for example independent inventors), this would not have any impact on

society's wellbeing. On the contrary, society as a whole would face a loss in the event of a patent litigation stealing company's resources from innovation and production or hindering socially useful processes without at the same time generating equally valuable benefits in another field.

The dynamic effect arises instead from a different perspective and takes into account the impact that patent infringement disputes can have on the different levels of willingness to innovate that companies have and, through this, on the future welfare of society.

With these appropriate assumptions in place and considering that losses incurred by companies involved in patent infringement cases could certainly constitute a valid reason to reduce their commitment to the development of new products or services, but at the same time could also entail a flux of funds directed to smaller inventors big enough to compensate for the weight of the disincentive experienced by the formers, it is evident how the dynamic effect, in the same way as the static effect, could bring on a decrease as well as an increase in the total incitement to innovate.

For these reasons, although we can find in literature different confirmations on how the loss of wealth experienced by the companies that are involved in a patent litigation usually also represents a net loss for society as a whole⁸² and

⁸² See Bhagat S. – Romano R., *Event Studies and the Law: Part I: Technique and Corporate Litigation*, in *American Law and Economics Review*, 2002, vol. 4, pp. 141-167.

rarely would give rise to consistent transfers in favour of other individuals that are involved in socially useful activities, the research was also aimed at estimating the total amount of any such transfers of wealth, analysing the financial statements of the NPEs involved in the patent litigations.

The picture that emerged from such evaluations is rather exhaustive. Findings have in fact allowed the researchers to clarify some essential aspects, and in particular that in reality only a small part of wealth lost by companies involved in a patent infringement dispute ends up in the hands of who claims to be the victim of such violation, and that, moreover, only a minimum share of what obtained by the alleged victim is then transferred to independent inventors.

All this allows us to derive some important conclusions, namely that if, on one hand, patent litigations are clearly able to generate large wealth losses for companies that are accused to be using stolen intellectual property, on the other hand, the same can be seen to be ineffective in conveying funds from the hands of big players to those of small innovators, and this not because of the selfishness of NPEs, often accused to be holding to themselves an excessive share of the total amount obtained as a mean of compensation, but because of other unspecified factors that are probably linked to the several events and players involved in a patent infringement controversy.

On the basis of this and of hard data it is thus possible to state, albeit with a certain degree of approximation, that it is not so much the NPEs that negatively affect the disposition to innovation and, through this, on the overall social welfare, but rather patent litigations per se.

In practice, patent controversies can be seen as a sort of viscous cycle or, recalling the concepts explained by Porter⁸³, as a “non-value chain” that is able to generate many costs and almost no benefits. In fact the companies see their value as being compromised when they take part in patent litigations, NPEs and the so-called Patent Trolls benefit from the small share of economic value stemming from their efforts and claims, the small independent innovators receive little of what NPEs manage to obtain and, finally, society as a whole witnesses a deterioration of its own wealth because of a generalized decrease in the propensity to innovate and thus in the prospects of growth and technological and social progress.

In numerical terms, in fact, the context can be summarized as follows.

The loss of wealth imputable to legal trials initiated by NPEs because of alleged intellectual property violation between 1990 and 2010 has exceeded the figure of 500 billion US dollars, while only between 2007 and 2010 it was of approximately 83 billion US dollars a year, namely more than what the entire US industry invests annually in Research and

⁸³ See Porter M.E., *Il vantaggio competitivo*, Einaudi, Torino, 2011.

Development activities. This amount, moreover, is limited to companies that are listed on the stock exchange and thus is to be interpreted as merely a prudential estimate and not as truly representative of the real impact of such phenomenon.

But in what percentage such overall loss was translated in monetary transfers in favour of NPEs and, subsequently, of small innovators?

Taking as a reference more than 570 legal actions promoted by Non Practicing Entities for intellectual property violations, and comparing what was cashed by them (approximately 7,6 million dollars) to the overall generated loss, amounting to approximately 90 billion a year, it emerges how NPEs were able to take possession of only a small share, equal to about 8,7% of the total wealth subtracted to companies that were dragged in patent litigations. To be precise, since NPEs' profits do not stem exclusively from the companies involved in patent infringement disputes, it is logical to expect that the aforementioned percentage is actually overestimating reality and that therefore the total share of losses incurred by private companies from which NPEs then benefit is even lower.

A conceivable hypothesis, even if not supported by numerical evidence, is that to benefit from the involvement of a company in a patent litigation, and thus to benefit from a share of the wealth subsequently subtracted from it, could well

be its competitors, whenever they are not already involved, as it usually happens, in the same legal trial.

The news of the initiation of a legal dispute for an alleged intellectual property violation, in fact, could affect not only investors' behaviours, but also customers' actions, which could easily modify their buying habits and favour, instead of the products made by the company accused of infringing other companies' intellectual property, those of its competitors. Should this really happen and the wealth transfer in favour of competitors should be of significant size, it is clear that the overall loss generated by the patent litigation would be higher to the one that could have been produced in the case of the patent litigation being extended to a plurality of companies that were competing against each other's and therefore customers would not have had reasons to modify their buying behaviours.

Even if it seems logical, such mechanism did not find confirmation in the research findings, and on the contrary the available data presents an opposite situation, which therefore does not give any objective proof on the presence, following the initiation of a patent litigation, of consistent transfers in favour of the competition.

Another possible cause for the significant difference between the wealth loss originated to the detriment of a company involved in an intellectual property infringement trial and the benefit obtained by the NPE who claims the violation

of its own property, could reside, as previously seen, in the combination of legal or other type of expenses that the alleged violator is called upon paying in order to defend itself from the accusations. Also in this instance, gathered evidence clearly shows how wealth transfers in favour of lawyers, legal experts, etc. are only a small portion of the overall loss generated by the patent litigation.

Finally, even when evaluating the fluctuation in value experienced by NPEs in conjunction with a patent infringement action, no evidence emerged that could justify the huge amount of value lost as a consequence of a patent litigation.

Being thus unable to justify the size of the loss with the transfers made to NPEs, competition, legal advisors or NPEs shareholders, that proved to be, as seen before, quite small, and not having successfully identified other possible transfers made in favour of other subjects, it is fair to believe that the biggest share of wealth subtracted to companies involved in a patent controversy, failing to be compensated by a similarly valuable benefit in a socially valuable field, would translate in a loss for the overall community.

As seen before, nonetheless, the trials initiated by NPEs can also generate benefits to companies when they manage to direct more or less significant shares of the experienced loss towards the small inventors and developers, increasing in this way incentives to innovation.

Taking though into account the item that in NPEs' financial statements includes any possible transfer towards independent inventors (net cash flow to investing activities), and also assuming, in spite of reality, that no other amounts flows into such item, numbers clearly show how financial flow between NPEs and small innovators is equal to about 2% of the overall loss and thus they cannot justify whatsoever the scope and size of such item.

Ultimately, while not underestimating the importance of even minimal transfers in favour of small inventors, it is clear that the biggest part of the loss caused by the patent litigation against companies does not find any other compensation or beneficiary and that it therefore becomes a large disincentive to innovation, especially for firms that are most active in research and development activities. As revealed by some contributions, in fact, the chance that a company is involved in a patent dispute is directly proportional to the amount of financial resources that it devotes to R&D activities⁸⁴.

In order to fully capture the total social costs generated by a patent litigation to the detriment of the general community, it is necessary to take into consideration not only the "present" loss, but also the risk of future losses to which companies know they expose themselves as, by devoting themselves to the development of a new product or a new

⁸⁴ See Bessen J. – Meurer M., *Lessons for patent policy from empirical research on patent litigations*, in Lewis and Clark Law Review, 2005, vol. 9, URL: <http://www.researchoninnovation.org/lclr.pdf>.

technology, they are also aware that they may be involved in a dispute initiated by a NPEs.

The awareness of the risk of being dragged into pretentious patent litigations, perhaps caused by involuntary violations, when not entirely without foundation, is forcing companies to take on a number of different precautions that, in fact, add up to the their total cost of R&D activities and, therefore, discourage the firm from undertaking any further innovation strategies.

All this, however, also affects individual inventors and the value of their creations as recognized by the market. Like companies that value the opportunity to undertake the development of a new solution or a new product, in fact, even those firms that are only interested in acquiring a patent from an independent developer, when negotiating the purchase price or license fee, will necessarily account for the risk of future losses and inevitably this will impact on their willingness to spend, or on the amount of compensation paid to the same inventor.

The conclusions that derive from the framework that we just outlined are therefore quite clear: patent litigations are configured as substantially inefficient processes that are characterized by high costs both for the companies involved and their clients, and by meagre profits for patent holders, NPEs and their shareholder. In the way they are shaped, patent litigations represents a “negative-sum game”, a process in

which the majority of players incurs in huge losses, while only a few others get negligible benefits.

3.2.2 NPEs disputes and Start-ups

Having established that patent litigations initiated by NPEs negatively affect incentives to innovation, what is left to clarify is what all of this means in reality and who are the subjects that most suffer because of this.

As seen before, the community propensity to innovate and to nurture scientific progress takes form through the initiative of a multitude of subjects that differ in nature and size. Taking this last discriminating factor as a reference, is nonetheless possible to identify within this combination of manifold entities two specific types of subjects: on one hand those that have enough resources to develop, patent, protect and economically exploit a new invention – namely big corporations and universities – and, on the other hand, those that instead can only count on their ability to develop something new but without the necessary resources to go beyond this.

Given our initial assumption, in order to identify which innovative component within society is mostly affected by the disincentive to innovate generated by patent litigations and therefore how it is that the result of events that mainly occur in

the legal and social field can generate repercussions at a social level, our attention will now have to turn to the second category identified.

In this view, a first essential step is that of going beyond the generic denomination of “small inventors” or “independent developers” utilized so far to identify the most vulnerable players involved in NPEs disputes, and understand in detail who is included in this particular segment of society.

On this point, in fact, we must consider that when we talk about small entities that are dedicated to the development of new products and services, we do not simply refer to the popular and a little romantic image of an inventor locked up in his laboratory, but also to another type of subjects that are particularly important within modern economic systems, the so-called start-ups.

This term, in fact, encompasses all those companies, recently born or still at an embryonic stage, that are characterized as being small, having scarce resources and, most importantly, that are usually built around a new development or an innovation.

In this respect, therefore, unlike independent inventors, who are normally not interested or anyway unable to transform their creations into real and viable businesses, start-ups play a vital role within the context of economic environment. They represent in fact that fundamental element of novelty that calls into question the balance of powers, the technological

progress, increases employment levels and promotes a generation change within the entire industry⁸⁵.

For this reason, and within the aim of this analysis, some extensive research conducted in the recent past turns out to be particularly useful. This was carried out with the precise aim of investigating in depth on the impact that patent litigations initiated by NPEs can generate against this specific category of small innovators⁸⁶.

The most recent of this analysis, focused on the specific context of the US and carried out in the period following the approval of the American Invents Act of September 16 2011⁸⁷, which was defined by many as the most significant reform of the US patent system in over sixty years, has concentrated its attention on a sample of about 220 start-ups that were active in the technological sector, analysing their intellectual property controversies between 2006 and 2012 and suggesting among other things a new and more appropriate denomination to identify those entities that were referred to so far as NPEs or, alternatively and more critically, as Patent Trolls.

Referring to certain contributions on the subject, in fact, the analysis holds as primary reference, instead of the most

⁸⁵ See Haltiwanger J.C. - Jarmin R.S. - Miranda J., *Who Creates Jobs? Small vs. Large vs. Young*, NBER Working Paper No. 16300, August 2010, URL: http://goe.ier.hit-u.ac.jp/CAED/papers/id038_Haltiwanger_Jarmin_Miranda.pdf.

⁸⁶ See Chien C.V., *Startups and Patent Trolls*, in Santa Clara University Legal Studies Research Paper, n. 9, 28 September 2012, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2146251. See also Risch M., *Patent Troll Myths*, in Villanova University School of Law Public Law and Legal Theory Working Paper No. 2012-2011, or in Seton Hall Law Review, 2012, vol. 42, p. 4567 ss., URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1792442.

⁸⁷ Available at URL: <http://www.gpo.gov/fdsys/pkg/BILLS-112hr1249enr/pdf/BILLS-112hr1249enr.pdf>.

famous NPEs, the so-called Patent-assertion Entities (PAEs), namely those entities that «are focused on the enforcement, rather than the active development or commercialization of their patents» and «whose business model primarily focuses on purchasing and asserting patents»⁸⁸, thus excluding from the survey the «patent owners, that primarily seek to develop and transfer technology, such as universities and semiconductor design houses»⁸⁹.

Alternatively, PAEs have been defined also as companies that are focused «not on developing or commercializing patented inventions but on buying and asserting patents, often against firms that have already begun using the claimed technology after developing it independently, unaware of the PAE patent. PAEs include not only freestanding businesses but patent holding subsidiaries, affiliates, and shells of operating companies that want to participate in the PAE industry and/or a new means of countering competitors»⁹⁰.

Beyond such definitional issues, however, it is the survey results that provide the most interesting findings.

The first is provided with reference to the size of companies that are involved in patent litigations as the sole

⁸⁸ See Chien C.V., *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, in *Hastings Law Journal*, 2010, vol. 62, p. 328, URL: http://www.hastingslawjournal.org/wp-content/uploads/2011/02/Chien_62-HLJ-297.pdf.

⁸⁹ See Federal Trade Commission, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, March 2011, n. 5, p. 8, URL: <http://www.ftc.gov/os/2011/03/110307patentreport.pdf>.

⁹⁰ See Yeh B.T., *An Overview of the "Patent Trolls" Debate*, Congressional Research Service, 20 August 2012, R42668, URL: <http://www.fas.org/sgp/crs/misc/R42668.pdf>.

defendant. In 66% of cases, in fact, these are entities that make less than 100 million US dollar revenues per year, and among these the 55% even makes less than 10 million US dollars per year⁹¹.

As further confirmation of the fact that the favourite victims of patent litigations initiated by PAEs are small companies, an interesting figure is shown in the research: operating companies appear to have sued companies with a profit lower than 10 million US dollar a year only in 16% on cases.

A second finding that is worth noting refers to the type of patent that is usually claimed by PAEs (60% protects software and high-tech products/solutions) and the nature of the litigations initiated by them, that result having no foundation in 40% of cases, or anyway they referred to technologies that are already readily-available on the market.

However, the framework outlined with reference to the consequences claimed by small companies following their involvement in patent litigations by PAEs is much more articulated. 40% of the interviewed sample⁹², in fact, claimed to have been deeply impacted at an operational level (Graph 1).

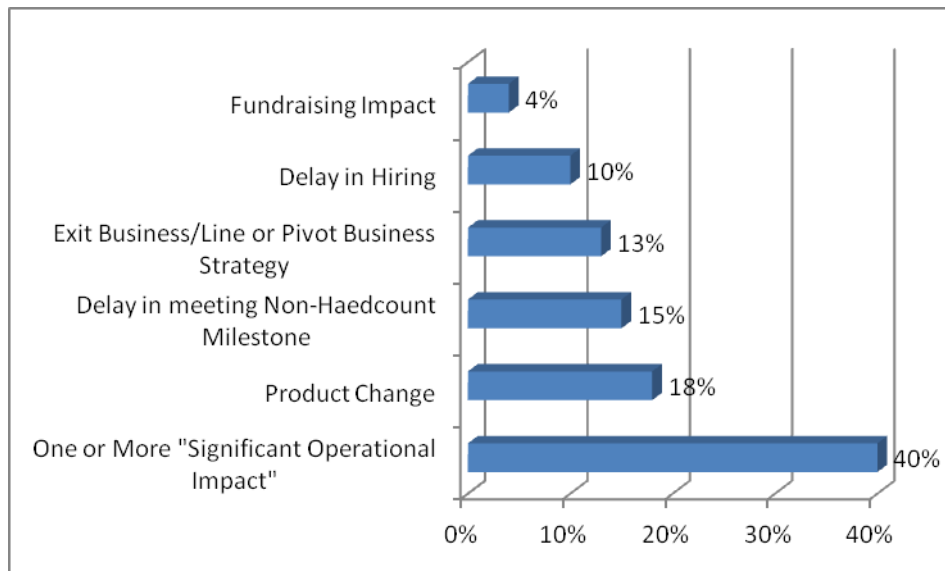
⁹¹ See Bessen J. – Meurer M., *The Direct Costs from NPE Disputes*, in Law and Economics Research Paper No. 12-34, Boston University School of Law, 28 June 2012, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2091210.

⁹² 79 companies out of 223 have been asked to complete a survey.

Among the effects suffered following the initiation of a patent infringement dispute the following items are however also cited:

- the postponement or archiving of certain company objectives;
- the need to modify one or more product, even more strategic ones;
- the exit of certain businesses or the amendment of strategic directions;
- the desertion or interruption of certain activities in a specific branch of the company or of the entire firm;
- the registration of loss in company value.

Graph 1 – Impact on start-ups resulting from a PAEs action



Source: See Chien C.V., *Start-ups and Patent Trolls*, cit.

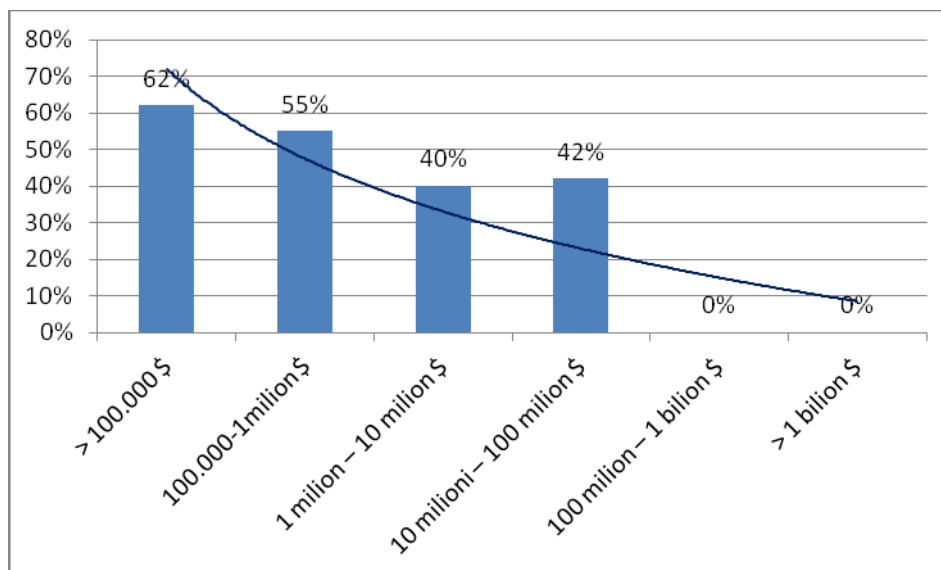
At a closer inspection, moreover, within the considered sample it is mostly small companies that claim to have had a significant impact resulting from their involvement in a patent litigation (Table1), and on the contrary, by thoroughly analysing the data, we can clearly understand how such effect is perceived as less important than the increase in the company size, and thus in the available resources (Graph 2).

Table 1 - Impact of PAE actions on Small Companies

Companies by profit levels	Number of respondents	Val. %*
> 100.000 \$	13	62%
100.000-1million \$	20	55%
1 million – 10 million \$	20	40%
10 millions – 100 millions \$	12	42%
100 millions – 1 billion \$	6	0%
> 1 billion \$	6	0%
TOTAL	79	41%

* Percentage of Respondents that declares a “Significant Operational Impact”
 Source: See Chien C.V., *Start-ups and Patent Trolls*, cit.

Graph 2 - Impact of PAE actions on Small Companies



Source: See Chien C.V., *Start-ups and Patent Trolls*, cit.

Significant food for thought is also derivable from the picture outlined with regards to the reaction strategies implemented and the amount of costs incurred in such implementation.

Data show in fact that the most widespread reaction strategy is that of answering to those requests brought forward by PAEs to initiate a rough legal battle to protect their activity and in spite of this the significant amount of costs that all of this triggers, both in absolute terms and in relative terms on incidence on profits (Table 2).

In contrast, the least expensive solution, which consists in not taking any reaction strategy, represents the second most used option. This obviously also depends on the way in which PAEs requests are brought forward or, to be clearer, from the aggressiveness with which they pursue their objectives and if therefore they have already given start to the legal action or if instead they simply started communicating their intentions to the counterpart in an informal way.

**Table 2 - Primary Responses to PAE requests, and Their Costs
(average and % of annual revenues)**

Primary Response to PAE request	Primary Response		Average Cost of Response		% of Annual Revenues Spent Resolving D	
	Number	%	Number	Average \$	Number	Average \$
Product/Business Change	7	9%	5	32.000	5	13%
Doing nothing	17	22%	15	2.400	15	0%
Settlement (\$ or equity)	14	18%	12	340.000	12	13%
Fighting in court	9	11%	7	857.000	6	24%
Fighting out of court	19	24%	18	168.000	18	5%
Other/unresolved/legal fees	13	17%	9	7.000-21.000	8	0-6%
TOTAL	79	-	66	-	64	-

Source: See Chien C.V., *Start-ups and Patent Trolls*, cit.

Ultimately, thus, for a small company the involvement in a patent dispute brought forward by a PAE represents, not only a significant financial burden, but also a big obstacle to the normal execution of its normal activities, if not even a cause for suspension or definitive closure of such activities, with which other consequences come for instance on the change in company value and on its ability to attract investors and successfully collect financial resources on the market⁹³.

As seen before, therefore, both in terms of incentives/disincentives to innovation, and in terms of costs incurred by companies that are being accused of intellectual property infringement, the involvement in a Patent Troll

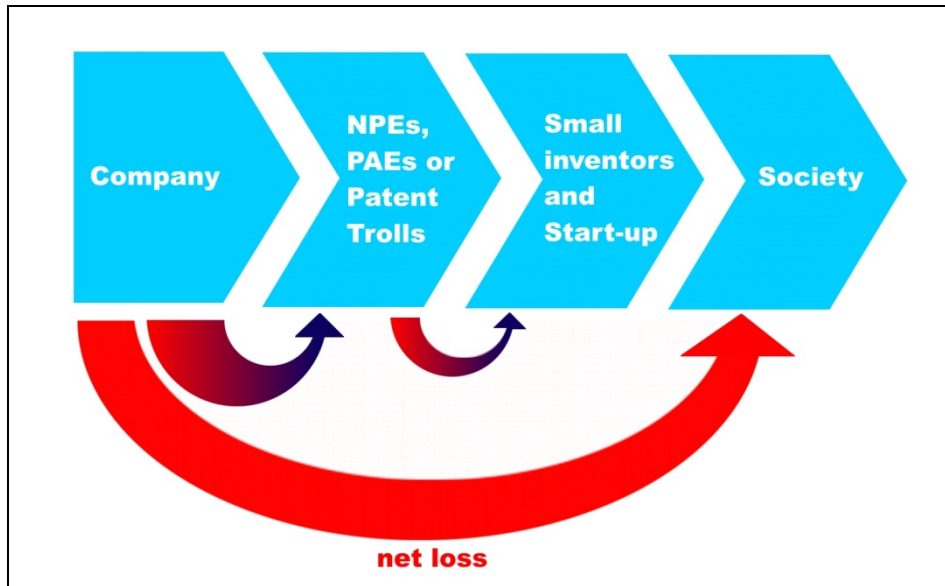
⁹³ See Chien C.V., *Startups and Patent Trolls*, cit., p. 12.

dispute almost always turns out to be dangerous events, full of negative components.

If in fact we look at the patent litigations as if they were a value chain, with companies called to defend themselves against a violation at one end of the spectrum and the community at the other (Figure 1), we can denote a value/non-value distribution that is mostly unbalanced. Of the entire loss experienced by one part, in fact, only a very small amount is offset by the benefits obtained by the other part.

This means, obviously, that the net balance identifiable within the difference between the two amounts translates inevitably in a cost incurred by society. Such cost can evidently take on the most diverse forms, and therefore result in consequences of different nature, on which however, without an actual confirmation, it's hard to comment further. In spite of this it is anyway very likely that at least one part, if not the total, of the net loss caused by a patent litigation to the community is necessarily mirrored in the main variable that governs the relationship between the world of production and the world of consumption, namely the price.

Figure 1 –Patent litigations’ value chain



Source: original elaboration

It is in fact not ruled out that also possible effects stemming from inefficiencies in the market, in the legal system, in product quality and accessibility could, even if only partially, find expression in the final selling price, or more precisely, in the overall cost bore by consumers when acquiring goods.

A similar argument can be hold when analysing the results of the impact generated by PAE disputes against small companies in a start-up phase. As noted, in fact, for this particular category of companies the involvement in a patent infringement litigation can bring about huge economic, legal and operational consequences.

Even if ignoring for a moment the weight that an unfavourable environment to the development of strategic companies like start-ups might have on the entire community, it is almost certain that the costs incurred by them in the case of a patent litigation have inevitable repercussions on their prices and product availability.

In both cases there are therefore good reasons to believe that Patent Trolls or PAEs' actions, as demonstrated by the negative value perceived by all subjects involved, affects consumers and, in general, the community as well.

3.3 The benefits of trolling activities

Since their first appearance, Patent Trolls have been the subject of a heated debate between two opposing groups: the opponents, convinced of their opportunistic nature and their negative impact, also thanks to the availability of extensive research on the subject, the most recent of which stands at the basis the analysis we just discussed, and supporters who, as we will be able to address later on in the thesis, even if they are basing their opinions on some evidence that was also accounted for by the more critical observers, however, seem to offer a different and equally interesting point of view.

The basic hypothesis around which the doctrine that claims that trolling activities are a positive element of the

economic environment is shaped is based on the assumption that Patent Trolls, within full legitimacy of the rights to them recognized by legal systems as owners of intellectual property⁹⁴, would take on an almost restorative function, filling an empty spot in the market and becoming ambassadors of a fundamental part of the system, which is almost without representation: the small innovative companies. In fact, as skilfully summarized in a recent contribution on the subject: «Those who worship at the altar of start-ups see trolls as necessary intermediaries; those who swoon at the big behemoths view trolls as a nuisance»⁹⁵.

With this in mind, for a modern knowledge-based economy, Patent Trolls come to play a well-respected role that entails mediating between the conflicting demands of producers, on the one hand, and developers, on the other hand, but also in promoting and celebrating the discoveries made, in providing them with the necessary support when defending their rights, in offering them new opportunities to monetize their patents⁹⁶, and, ultimately, in giving a strong stimulus to the dynamics of the market of intellectual property, which was for a long time more of a theoretical concept than an actual reality.

⁹⁴ See Forsberg, H., *Diminishing The Attractiveness Of Trolling: The Impacts Of Recent Judicial Activity On Non-Practicing Entities*, cit., p. 8 ss.

⁹⁵ See Magliocca G.N., *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, in *Notre Dame Law Review*, 2007, n. 82, pp. 1809-1814, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=921252.

⁹⁶ See McDonough III J.F., *The Myth of the Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy*, in *Emory Law Journal*, 2006, Vol. 56, p. 204, p. 7, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=959945.

In the opinion of the more favourable group, therefore, not only Patent Trolls reputation would be undeserved and out of place, but their core function has been largely misunderstood and judged merely on the basis of a partial view on its underlying implications⁹⁷.

Some believe in fact that trolling activities have brought a little order where in the past the “survival of the fittest” approach ruled, namely in an environment where, before the advent of Patent Trolls, big companies would infringe someone else’s intellectual property without any consequence, taking advantage of the weaknesses of small developers in order to unjustly use their inventions for productive reasons and, therefore, speculate through the violation of intellectual property law⁹⁸.

Without any protection or any necessary resources to initiate a legal action, in the majority of cases independent inventors found themselves to having to renounce to the exercise of their own rights and to their entitled profits, as well as any future innovative project, with a consequent serious loss for the wider community.

For these reasons, a substantial number of observers have always been convinced that trolling activities play a key role within the economic and social system. The underlying

⁹⁷ See Niro R.P., *Who is Really Undermining the Patent System-"Patent Trolls" or Congress?*, in John Marshall Review Of Intellectual Property, p. 197, URL: <http://www.jmripl.com/Publications/Vol6/Issue2/niro.pdf>.

⁹⁸ See Jones M., *Permanent Injunction, A Remedy by Any Other Name Is Patently Not The Same: How eBay v. MercExchange Affects the Patent Right of Non-Practicing Entities*, in George Mason Law Review, 2007, n. 14, pp. 1035-1041, URL: www.georgemasonlawreview.org/doc/14-4_Jones.pdf.

rationale on which such position lies is quite simple: by vindicating the rights of small developers and by referencing all those “sleeping patents” that would otherwise remain unused, Patent Trolls would in fact also successfully promote the respect of norms, give some space back to the spirit of initiative of independent inventors and, consequently, to encourage innovation.

In short, while literature against Patent Trolls claims that their behaviour is often predatory and parasitic that hinders technological progress and social development, the favourable side turns it over to big corporations, responsible, according to them, for operating and generating profits without caring too much about others’ intellectual property. In contrast, trolling activities are seen instead as an element that is able to contrast such unjust value appropriations, to give trust back to independent innovators, who would otherwise remain excluded from the patent market⁹⁹, and to favour in this way the free circulation of ideas, technology transfers and, more in general, innovation.

In their defence, the same NPEs argue that many of the criticisms moved against them are mostly to be attributed to

⁹⁹ Should PAEs not be ready to claim their rights against small inventors yet, in fact, it is believed that these would remain «virtually frozen out of the patent licensing market»: see Ryan P., *Letter in response to FTC Requests for Comments*, Project No. P093900, in *Evolving IP Marketplace*, 13 May 2009, URL: <http://ftc.gov/os/comments/iphearings/540872-00048.pdf>.

the inappropriateness of intellectual property protection systems and therefore they should not be blamed at all¹⁰⁰.

To promote their argument, some authors also invite us to reflect on the obvious similarity that, in some respects, would allow to compare Patent Trolls with entities that are already in the market and, with reference against which, no concern was ever raised. On this point we can highlight how, if compared to simple innovations, Patent Trolls have a function that is similar to that of venture capital companies¹⁰¹ and they act as market makers that «facilitate the public disclosure of invention, which is one of the patent system's primary functions»¹⁰².

To some extent, thus, Patent Trolls could be seen as an evolution of the patent system towards the already well experimented trend of specialization and strong outsourcing in certain entities, in this case these would be small inventors, because of lack of resources or in order for them to focus on their core business, specifically the development of new products and solutions, outsourcing some of their activities, namely the practice, promotion and protection of their patents to a third party, the Patent Troll, which therefore «assumes for

¹⁰⁰ See Seidenberg S., *Troll Control: The Supreme Court's eBay Decision Sets Back Pesky 'Patent Trolls' or American Innovation, Depending upon Which Side You're On*, in ABA Journal, September 2006, URL: http://www.abajournal.com/magazine/article/troll_control/.

¹⁰¹ See Risch M., *Patent Troll Myths*, cit., p. 7

¹⁰² See Brief for Rembrandt IP Management, LL.C., as Amicus Curiae Supporting Respondent at 2-3, *eBay Inc. v. MercExchange, L.L.C.*, p. 3, URL: <http://patentlaw.typepad.com/eBay/MercRembrant.pdf>.

itself the risks and potential additional rewards of monetizing the intellectual property in the market»¹⁰³.

All of this, according to the more favourable literature, would allow a better resource allocation as it would enable small inventors to dedicate their time to what they do best, bearing in mind that their efforts will be valued as much as possible, and the community to benefit from the resulting technological progress.

Also with regards to the doubts raised by the toughest observers with reference to the possible illegality of trolling activities, some authors claim that the argument brought in favour of such idea are rather inconsistent.

Probably overlooking how in some cases patent litigations initiated by Patent Trolls have revealed themselves to be inconsistent, pretentious and blackmailing, the matter is attributed to the actual essence of intellectual property law, whose main objective is that of guaranteeing to patent owners the right to refrain other individual from using such patent for a period of time, and on the basis of this we can determine the substantial legal compliance of trolling activities¹⁰⁴.

The same approach is used with regards to the most controversial aspect of Patent Trolls' activities, namely the lack of productive use of the patents owned by them. According to the approving literature, in fact, such criticism

¹⁰³ See Brief for Rembrandt IP Management, cit., p. 8.

¹⁰⁴ See Lueck M. – Oberts S. – Miller K.G., *“Patent Troll”: A Self-Serving Label That Should Be Abandoned*, in Robins, Kaplan, Miller & Ciresi L.L.P., 28 September 2005, URL: <http://www.rkmc.com/publications/articles/patent-troll-a-self-serving-label-that-should-be-abandoned>.

lacks the necessary legal assumptions: since intellectual property rights exist independently of the use or exercise that their owners decide to make of such rights, any legal action initiated by them after an alleged infringement seems in fact perfectly legitimate, and this is true even when owners do not have any intention of using their patents for productive activities¹⁰⁵.

Furthermore, in case such principle was to be doubted again, we should pay more attention to the impact it might have on all those situations in which a patent owner, so for example a university, a start-up or also a company, holds a patent without using it for productive activities for whatever reasons, for instance to use it for research purposes, because of lack of resources or, as it often happens in big corporations, also for strategic, competitive or defensive matters. In other words, «This type of change would, in effect, be exchanging the stifling of innovation by trolls through litigation for the stifling of innovation by law through enhanced barriers for researchers and innovators and the superfluous policing of the innovative process»¹⁰⁶.

In the image suggested by the favourable literature, nonetheless, the most consistent benefit for the economic system and the community as a whole from trolling activities would go much further than the mere respect of the pivotal

¹⁰⁵ See McFeely D.J., *An Argument for Restricting the Patent Rights of Those Who Misuse the U.S. Patent System To Earn Money Through Litigation*, in *Arizona State Law Journal*, spring 2008, n. 40, pp. 310-312.

¹⁰⁶ See Forsberg, H., *Diminishing The Attractiveness Of Trolling: The Impacts Of Recent Judicial Activity On Non-Practicing Entities*, cit., p. 9.

intellectual property principles, and go till the creation of a secondary market for innovation, patents and ideas that, on one hand would offer to small companies, which are usually lacking the necessary resources to manage their patents at best, the opportunity to grow, develop and obtain financing in the market, and, on the other hand, would allow society as a whole to enjoy the benefits that all of this creates in term of technological progress. To this point, it is worth noting that «Just as the banking system created a market for capital and the insurance industry created a market for risk, the growth of the patent system may be creating a market for innovation»¹⁰⁷.

Independently from the fact that one can believe or not that a market for intellectual property even before the advent of Patent Trolls, it is thus quite evident how their brokering activities between producers and inventors favour the match between demand and supply of innovation and, through this, the increase in patent liquidity¹⁰⁸, normally considered to be illiquid goods as they are not «readily convertible into cash»¹⁰⁹, and to make their negotiation¹¹⁰.

In spite of the increasing importance taken on by scientific and technological progress, and therefore by patents

¹⁰⁷ See McDonough III J.F., *The Myth of the Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy*, in *Emory Law Journal*, 2006, Vol. 56, p. 204, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=959945.

¹⁰⁸ See Yeh B.T., *An Overview of the "Patent Trolls" Debate*, cit., p. 6.

¹⁰⁹ See Robert A. Schwartz & Reto Francioni, *Equity Markets In Action*, John Wiley & Sons, New Jersey, 2004, p. 60, URL: <http://stocksfirst.com/books/trading-econ-investing/Equity%20Markets%20in%20Action%20-%20The%20Fundamental%20of%20Liquidity,%20trading%20-%20Schwartz%202004.pdf>.

¹¹⁰ See McDonough III J.F., *The Myth of the Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy*, cit., p. 211.

themselves, within the entire economic system¹¹¹, many argue that the market for intellectual property is still underdeveloped and characterized by a «high degree of illiquidity»¹¹², and because of this it constitutes a «high-friction transaction environment»¹¹³ or a blind market in which «willing buyers and sellers would not be able to find each other»¹¹⁴.

Ultimately, by breaking up the system and by facilitating patent transactions, Patent Trolls, but also NPEs and PAEs, would increase patents' value and favour the transfer, circulation and use of ideas and new technologies.

3.4 Conclusion

As seen during the course of this analysis, the debate ignited by the advent and diffusion of Patent Trolls has created a strong separation in the literature between two opposite sides, one more negative and another more approving, both

¹¹¹ See Chien C.V., *From Arms Race to Marketplace: The New Complex Patent Ecosystem and Its Implications for the Patent System*, in *Hastings Law Journal*, December 2010, vol. 62, p. 297, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1703557.

¹¹² See Harhoff D., *The Role of Patents and Licenses in Securing External Finance for Innovation*, in *European Investment Bank Papers, R&D Financing Of Innovation in Europe*, 2009, vol. 14, n. 2, pp. 74-98, URL: http://www.eib.org/attachments/efs/eibpapers/eibpapers_2009_v14_n02_en.pdf.

¹¹³ See RPX, *Corporation Investor Presentation*, 3rd Quarter 2012, 8, URL: http://files.shareholder.com/downloads/ABEA-5XYKB4/0x0x523306/4CC42999-6166-4C95-8192-9CE54759BE8D/RPXQ3Invest_Web.pdf.

¹¹⁴ See Lemley M. - Myrhvold N., *How to Make a Patent Market*, in *Hofstra Law Review*, 2008, vol. 36, p. 257, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1012726.

based on logical assumptions and considerations that can be widely agreed with.

In spite of the several contributions and the numerous researches undertaken on the subject, however, as of today the discussion on the positive or negative value of trolling activities does not seem to have achieved sufficient maturity to call for a unanimous and official stance on itself.

A confirmation in this sense comes, firstly, from the stability of one of the most essential prerequisites for discussion, namely the precise identification of the entities to be considered.

The multiple strategies formulated to accurately identify Patent Trolls, which depending on the case can be also called Patent Shark, Patent Parasites, Non Practicing Entities or Patent Assertion Entities, represent in fact the most obvious expression of the significant confusion that still exists today around these entities.

Beyond this, moreover, even when entering into the merits of the matter and evaluating the arguments brought forward to support the two different theories, it is not yet possible to get a clear idea on the issue's context.

On the one hand, in fact, those who believe that Patent Trolls' activities are dangerous, not only for the individuals or entities involved, but also for the community in general, bring evidence to support their cause that show how trolling activities constitutes an inefficient and expensive process to

the detriment of both the juridical system, which is penalized by the proliferation of patent litigations, and the innovation sector, which is a very strategic branch of today's knowledge economy.

On the other hand, however, Patent Trolls supporters even if they do not have yet at their disposal any valid hard evidence, base their arguments on solid theoretic and logical grounds.

From their point of view, in fact, the presence, within the patent system, of a new player that is exclusively focused on defending and endorsing of the rights that stem from the ownership of intellectual property would break the old and vicious balances, and would in this way favour the creation of a market for intellectual property that would be more dynamic, efficient and transparent, and thus able to determine a better allocation of resources, a greater incentive to innovation and, therefore, a net benefit for society as a whole.

In the absence of more accurate evidence, thus, it is still premature to take on a clear position with regards to Patent Trolls, and it would be also premature, consequently, to decide whether they should be fought, supported or more simply just managed.

What we can easily state, instead, is that in recent years, while trolling activities were subject to several media campaigns that were able to make people believe things that were not always true, the classic framework that saw big

companies acting as victims on one side and Patent Trolls acting as executioners on the other, has changed considerably, so much as it is harder now to clearly and univocally identify each of them.

In reality, in fact, the business model implemented by Patent Trolls is by now widely used by companies as well that, while trying to protect themselves against patent litigations, to contrast competitors or to ensure that their technology is not supplanted by a new solution, build enormous patent portfolios without then using them for productive reasons, becoming thus downright Patent Trolls themselves.

For all these reasons, although it is not yet possible to express an altogether positive or negative opinion, because of the lack of objective evidence, on the effective valence of trolling activities and on their impact on consumers and society, it is safe to say that the action of Patent Trolls has in fact revived the market for patents and, probably, in some way, it has also favoured small inventors, while it is still rather difficult to quantify and qualify its impact on innovation levels.

For the sake of a purely economic analysis, without therefore discussing in details the various legal mechanisms implemented to limit the action of Patent Trolls, it is useful to finally point out how the uncertainty that still today prevents a clear and unambiguous identification of these entities can transform every legal measure drafted to contain their

diffusion into a double edged sword, able to successfully stop trolling activities but at the same time to compromise the activity of all the other entities that, even if similar to Patent Trolls in everything, are different in reality.

With this in mind, in the coming years, in order to assess the overall effectiveness of a legal norm or the disposition of a judge, or in order to evaluate the possibility of new reforms, it will become more and more necessary to analyse in detail the cost-benefit relationship of such rules and therefore consider not only their potential anti-trolling effect, but also their impact on the other stakeholders of the patent system, like for instance, universities or independent inventors.

As an example, it is useful to refer to the rulings enshrined after *MercExchange L.L.C. vs. eBay* or what was set forth by the recent Shield Act (Saving High-Tech Innovators from Egregious Legal Disputes Act of 2012), which introduces the possibility for judges to charge all legal expenses to the losing part guilty of having brought up a lawsuit without a reasonable chance to win, as well as discretionarily also any procedural costs, incurred by the winning side.

In this last case, but also in reference to the new limits imposed to permanent injunctions as a result of the dispute between *eBay* and *MercExchange L.L.C.*, in order to evaluate the overall effectiveness of the per of the novelty introduced, one must in fact assess whether it will not only discourage the real Patent Trolls by acting as a barrier to enter patent

litigations, but also whether it will end up discouraging independent inventors from defending their intellectual property rights and, because of this, from continuing with their innovative activities.

In conclusion, thus, keeping in mind the sensitivity of the matter we are analysing, the several variables that gravitates around it and the fragile balance of the patent system, to which the legislators must abide when drafting regulations for the governance and management of trolling activities, the only actually effective solution could be the one suggested by many observers¹¹⁵, who believe that the best way to defeat Patent Trolls would be to try and build a system with much less patents, but of a higher quality level.

¹¹⁵ See Pegoraro R., Beyond the Shield Act: Taking A Sword To Patent Trolls, in Digital Dialog, 31 august 2012.

BIBLIOGRAPHY

Avery S., *Collapse of RIM's patent deal with NTP stuns investors*, in Toronto Globe and Mail, 11 June 2005.

Bessen J. – Hunt R.M., *An Empirical Look at Software Patents*, Working Paper No. 03-17/R, 2004, Research on Innovation, Philadelphia, 2004, URL: <http://www.researchoninnovation.org/swpat.pdf>.

Bessen J. – Meurer M., *Lessons for patent policy from empirical research on patent litigations*, in Lewis and Clark Law Review, 2005, vol. 9, URL: <http://www.researchoninnovation.org/lclr.pdf>.

Bessen J. – Meurer M., *The Direct Costs from NPE Disputes*, in Law and Economics Research Paper No. 12-34, Boston University School of Law, 28 June 2012, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2091210.

Bessen J.E. - Meurer M.J. - Ford J.L., *The Private and Social Costs of Patent Trolls*, in Law and Economics Research Paper No. 11-45, Boston University School of Law, 19 September

2011, URL:

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1930272.

Bhagat S. – Romano R., *Event Studies and the Law: Part I: Technique and Corporate Litigation*, in *American Law and Economics Review*, 2002, vol. 4.

Brief for Rembrandt IP Management, LL.C., as Amicus Curiae Supporting Respondent, at 2-3, *eBay Inc. v. MercExchange, L.L.C.*,

URL:

<http://patentlaw.typepad.com/eBay/MercRembrant.pdf>.

Brockman J., *Judge defers ruling on BlackBerry case*, in *International Herald Tribune*, 25 February 2006.

CASRIP (Center for Advanced Study & Research on Intellectual Property), *Newsletter*, Spring/Summer 2006, vol. 13, issue 2, URL:

<http://www.law.washington.edu/casrip/Newsletter>.

Chan J. – Fawcett M., *Footsteps of the Patent Troll*, in *Intellectual Property Law Bulletin*, Fall 2005, vol. 10, issue 1.

Chiang TJ., *What is a troll patent and why are they bad?*, in *PatentLyo*, 6 March 2009, URL:
www.patentlyo.com/patent/2009/03/what-is-a-troll-patent-and-why-are-they-bad.html.

Chien C.V., *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, in *Hastings Law Journal*, December 2010, vol. 62, URL: http://www.hastingslawjournal.org/wp-content/uploads/2011/02/Chien_62-HLJ-297.pdf.

Chien C.V., *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the litigation of high-tech Patents*, in *North Carolina Law Review*, 2009, vol. 87, URL: <http://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1003&context=facpubs>.

Chien C.V., *Startups and Patent Trolls*, in *Santa Clara University Legal Studies Research Paper*, 28 September 2012, n. 9, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2146251.

Coletta C., *Red Hat Among Companies in Crosshairs of License Suit*, in *Triangle Bus*, 16 May 2008, URL: <http://www.bizjournals.com/triangle/stories/2008/05/19/story13.html?page=all>.

D'Incelli G., *Has Ebay spelled the end of Patent Troll abuses? Paying the toll: the rise (and fall?) of the Patent Troll*, in

Miami Business Law Review, University of Miami, 2008-2009, vol. 17.

Davis R.M., *Failed attempts to dwarf the Patent Trolls: permanent injunctions in patent infringement cases under the proposed Patent Reform Act of 2005 and eBay v. MercExchange*, in Cornell Journal of Law and Public Policy, 2008, vol. 17, URL: <http://www.lawschool.cornell.edu/research/JLPP/upload/Davis.pdf>.

D'Incelli G., *Has Ebay spelled the end of Patent Troll abuses? Paying the toll: the rise (and fall?) of the Patent Troll*, in University of Miami Business Law Journal, Spring/Summer 2009, vol. 17, n. 2, URL: [http://www.edegan.com/pdfs/dIncelli%20\(2008\)%20-%20Has%20Ebay%20Spelled%20the%20End%20of%20Patent%20Troll%20Abuses.pdf](http://www.edegan.com/pdfs/dIncelli%20(2008)%20-%20Has%20Ebay%20Spelled%20the%20End%20of%20Patent%20Troll%20Abuses.pdf).

Eisler K.I., *BlackBerry Blues*, in Washingtonian, 1 September 2005.

Eswaran M., *Cross-Licensing of Competing Patents as a Facilitating Device*, in The Canadian Journal of Economics, 1994, vol. 27, n. 3.

Federal Trade Commission, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, March 2011, n. 5, URL: <http://www.ftc.gov/os/2011/03/110307patentreport.pdf>.

Ferrill E.D., *Patent Investment Trusts: Let's Build a PIT to Catch the Patent Trolls*, in *North Carolina Journal of Law & Technology*, Spring 2005, vol. 6, issue 2.

Forsberg H., *Diminishing the attractiveness of trolling: the impacts of recent judicial activity on non-practicing entities*, in *Pittsburgh Journal Of Technology Law And Policy*, Fall 2011, vol. 12, n. 4.

Garker D.G., *Troll or no Troll? Policing Patent Usage with an Open Post-Grant Review*, in *Duke Law & Technology Review*, 2005, vol. 9, issue 7.

Garretson R., *Intellectual Security: Patent Everything You Do, Before Someone Else Does*, in *CIO Insight*, 5 December 2005, URL: <http://www.ciainsight.com/article2/0,1397,1902227,00.asp>.

Ghyo Sun Park - Seong Don Hwang, *The Rise of the NPE*, in *Managing Intellectual Property*, 1 December 2010, URL:

www.managingip.com/Article/2740039/The-rise-of-the-NPE.html.

Haller T.J. - Wiggins S., *The patent troll myth*, in *Ip Value*, 2006, URL: www.buildingipvalue.com/06homeindex.html.

Haltiwanger J.C. - Jarmin R.S. - Miranda J., *Who Creates Jobs? Small vs. Large vs. Young*, National Bureau of Economic Research, Working Paper No. 16300, August 2010, URL: http://goe.ier.hit-u.ac.jp/CAED/papers/id038_Haltiwanger_Jarmin_Miranda.pdf

Harhoff D., *The Role of Patents and Licenses in Securing External Finance for Innovation*, in *European Investment Bank Papers, R&D Financing Of Innovation in Europe*, 2009, vol. 14, n. 2, URL: http://www.eib.org/attachments/efs/eibpapers/eibpapers_2009_v14_n02_en.pdf.

Harkins C., *Fending Off Paper Patents and Patent Trolls: A Novel "Cold Fusion" Defense Because Changing Times Demand It*, in *Albany Law Journal of Science and Technology*, 2007, vol. 17.

Hughlett M., *Blurry on Blackberry*, in *Chicago Tribune*, 19 February 2006.

Jeruss S. – Feldman R. – Walker J., *The America Invents Act 500: Effects Of Patent Monetization Entities On Us Litigation*, in *Duke Law & Technology Review*, 2012, vol. 11, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2158455.

Jones M., *Permanent Injunction, A Remedy by Any Other Name Is Patently Not The Same: How eBay v. MercExchange Affects the Patent Right of Non-Practicing Entities*, in *George Mason Law Review*, 2007, n. 14, URL: www.georgemasonlawreview.org/doc/14-4_Jones.pdf.

Kahaulelio G.J., *The Troll next door*, in *John Marshall Review of Intellectual Property Law*, 2007, vol. 6, fasc. 92, URL: <http://www.jmripl.com.php5-10.dfw1-2.websitetestlink.com/articles/Gregory.pdf>.

Kanellos M., *Intel scores a victory in TeachSearch suit*, in *CNET News*, 21 December 1999, URL: http://news.cnet.com/Intel-scores-a-victory-in-TechSearch-suit/2100-1001_3-234727.html.

Kline D.J., *Patent Litigation: The Sport of Kings*, in *MIT Technology Review*, 28 April 2004, URL: <http://www.technologyreview.com/news/402686/patent-litigation-the-sport-of-kings>.

Kobylarz Xenia P., *Extreme Makeover: from Patent Troll to the Belle of the Ball*, in IP Law & Business, 15 February 2007, URL:

http://www.law.com/jsp/article.jsp?id=900005553554&Extreme_Makeover_From_Patent_Troll_to_the_Belle_of_the_Ball&slreturn=20130017095442.

Landers A., *Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law*, in Santa Clara Law Review, 2006, vol. 46.

Lemley M. - Myrhvold N., *How to Make a Patent Market*, in Hofstra Law Review, 2008, vol. 36, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1012726.

Lerer L., *Going Once?*, in IP Law & Business, October 2006.

Lerer L., *Meet the Original Patent Troll*, in Law.com, 20 July 2006, URL: <http://www.law.com/jsp/law/LawArticleFriendly.jsp?id=900005550324>.

Lueck M. – Oberts S. – Miller K.G., *“Patent Troll”: A Self-Serving Label That Should Be Abandoned*, in Robins, Kaplan, Miller & Ciresi L.L.P., 28 September 2005, URL:

<http://www.rkmc.com/publications/articles/patent-troll-a-self-serving-label-that-should-be-abandoned>.

Magliocca G.N., *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, in *Notre Dame Law Review*, 2007, n. 82, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=921252.

McCarthy E., *Waiting Out A Patent Fight With EBay*, in *Washington Post*, 6 January 2005.

McCurdy D., *Patent Trolls Erode the Foundation of the U.S. Patent System*, in *Sci Progress*, Autumn-Winter 2008/2009.

McDonough III J.F., *The Myth of the Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy*, in *Emory Law Journal*, 2006, vol. 56, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=959945.

McFeely D.J., *An Argument for Restricting the Patent Rights of Those Who Misuse the U.S. Patent System To Earn Money Through Litigation*, in *Arizona State Law Journal*, Spring 2008, n. 40.

Mei A., *La guerra dei brevetti non si ferma al Blackberry*, in *Il Giornale*, 8 March 2006.

N.d., *NTP Sues Apple, Google, HTC, LG, Microsoft and Motorola for Infringement of Wireless Email Patents*, URL: <http://www.prnewswire.com/news-releases/ntp-sues-apple-google-htc-lg-microsoft-and-motorola-for-infringement-of-wireless-email-patents-98101629.html>.

Niro R.P., *Who is Really Undermining the Patent System - "Patent Trolls" or Congress?*, in *John Marshall Review Of Intellectual Property Law*, 2007, vol. 6, issue 2, URL: <http://www.jmripl.com/Publications/Vol6/Issue2/niro.pdf>.

Ohkuma Y. - Sahashi M. – Hsueh H. – Brennan J., *Patent Trolls in the US, Japan, Taiwan and Europe (Digest)*, in *CASRIP Newsletter*, Spring/Summer 2006, vol. 13, issue 2, URL: http://www.law.washington.edu/Casrip/Newsletter/default.aspx?year=2006&article=newsv13i2BrennanEtAl#_ftn73 or <http://www.tokugikon.jp/gikonshi/244kiko1e.pdf>.

Patent Quality Improvement: Hearing Before the Subcomm. on Courts, the Internet, and Intellectual Prop., Before the H. Comm. On the Judiciary, 108th Cong. 54, 2003, URL:

http://commdocs.house.gov/committees/judiciary/hju88545.000/hju88545_0.htm.

Pegoraro R., *Beyond the Shield Act: Taking A Sword To Patent Trolls*, in Digital Dialog, 31 August 2012.

Porter M.E., *Il vantaggio competitivo*, Einaudi, Torino, 2011.

Price Waterhouse Cooper, *2012 - Patent Litigation Study. Litigation continues to rise amid growing awareness of patent value*, 2012, URL: http://www.pwc.com/en_US/us/forensic-services/publications/assets/2012-patent-litigation-study.pdf.

Quinn G., *In Search of a Definition for the Term “Patent Troll”*, in IPWatchDog, 18 July 2010, URL: <http://ipwatchdog.com/2010/07/18/definition-patent-troll/id=11700>.

Radack D.V., *Patent Trolls: pay up or fight?*, in Law Journal, 4 August 2006.

Rajkumar V., *The Effect of Patent Trolls on Innovation: A Multi-Jurisdictional Analysis*, in Indian Journal of Intellectual Property Law, 2008, 3, URL: <http://www.commonlii.org/in/journals/INJIPLaw/2008/3.html>

Rantanen J., *Slaying the Troll: Litigation as an Effective Strategy against Patent Threats*, in Santa Clara Computer & High Technology Law Journal, 1 January 2006, vol. 23, issue 1, art. 5.

Risch M., *Patent Troll Myths*, in Villanova University School of Law Public Law and Legal Theory Working Paper No. 2012-2011, or in Seton Hall Law Review, 2012, vol. 42, URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1792442.

RPX, *Corporation Investor Presentation*, 3rd Quarter 2012, 8, URL: http://files.shareholder.com/downloads/ABEA-5XYKB4/0x0x523306/4CC42999-6166-4C95-8192-9CE54759BE8D/RPXQ3Invest_Web.pdf.

Ryan P., *Letter in response to FTC Requests for Comments*, Project No. P093900, in Evolving IP Marketplace, 13 May 2009, URL: <http://ftc.gov/os/comments/iphearings/540872-00048.pdf>.

Sandburg B., *Trolling for Dollars: Patent Enforcers are Scaring Corporate America, and They're Getting Rich – Very Rich – Doing It*, in The Recorder, 30 July 2001.

Schultz J., *When Dot-Com Patents Go Bad*, in Salon.com, 13 December 2004, URL: www.salon.com/tech/feature/2004/12/13/patent_reform.

Schwartz R.A. – Francioni R., *Equity Markets In Action*, John Wiley & Sons, New Jersey, 2004, URL: <http://stockfirst.com/books/trading-econ-investing/Equity%20Markets%20in%20Action%20-%20The%20Fundamental%20of%20Liquidity,%20trading%20-%20Schwartz%202004.pdf>.

Seidenberg S., *Troll Control: The Supreme Court's eBay Decision Sets Back Pesky 'Patent Trolls' or American Innovation, Depending upon Which Side You're On*, in ABA Journal, September 2006, URL: http://www.abajournal.com/magazine/article/troll_control/.

Simon E., *Maker of BlackBerry settles patent-infringement suit*, in Seattle Times, 17 March 2005.

SlindFlor V., *Simon Says Intel's Chief Patent Counsel, David Simon, Has Some Tough Rules for Outside Counsel*, in IP Law & Business, 10 December 2004, vol. 4, issue 12.

Stone B., *Factory of the future?*, in Newsweek, 22 November 2004.

Techsearch v. Intel Corporation, in FindLaw for Legal Professionals, URL: <http://caselaw.findlaw.com/us-federal-circuit/1303145.html>.

Wahl A., *Cash your chips*, in Canadian Business, 8 January 2006, URL: <http://www.canadianbusiness.com/technology-news/cash-in-your-chips>.

Waldmeir P., *Patent Extortion Is the Cost of Business*, in Financial Times, 17 March 2005.

Wild J., *The real inventors of the term "patent troll" revealed*, in IAM Magazine, 22 August 2008.

Yeh B.T., *An Overview of the "Patent Trolls" Debate*, Congressional Research Service, 20 August 2012, R42668, URL: <http://www.fas.org/sgp/crs/misc/R42668.pdf>.