

THE CROSSROAD OF PATENT AND COMPETITION LAW
IN THE CONTEXT OF PATENT ASSERTION ENTITIES:
A COMPARITIVE ANALYSIS

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1. INTRODUCTION

Determined to supersede one another in the race for technological advancement, patent rights seem to offer a benign opportunity for an inventor, to make exclusive his invention, while offering him the discretion in fixing license fees. This form of exclusivity is purported to behave as an incentive, in allowing an inventor to recoup the cost and energy expended in making the invention, while formally according him the status of being the sole owner of that technology. However, the bailiwick of patent holders is not restricted to first hand innovators and researchers. Intermediate entities and bodies known as Patent Assertion Entities (“**PAEs**”), have increasingly come to possess patent rights over significant patent technologies and inventions. The leverage offered by patent rights is often abused by PAEs, by adopting various tactful strategies. This abuse of dominance has cascading effects, including but not limited to stymieing innovation and growth; it has detrimental effects on free market competition and antitrust regulation, ultimately affecting the end consumer.

Globally, the recognition PAEs as a concept, is currently in its nascent stages. Its presence and operation have been witnessed in more mature Intellectual Property markets of the United States, the European Union and a few Asian countries. This is primarily attributed to the fact, that Research and Development (“**R&D**”) in innovative technologies in Information Technology, Software and Artificial Intelligence (“**AI**”) have been better exploited in these jurisdictions.; the incentive to further innovation is relatively greater.

While drawing attention to the Indian patent regime, one cannot slight the potential of the Indian markets in terms of innovation. According to the recently released World

Intellectual Property Organization (“WIPO”) Report¹, India is emerging as the new target jurisdiction for patent filing in key fields of technology, securing for itself the eighth rank for first filing.² At present, India follows the ‘first to file’ system, where the patent rights are granted to those inventors who have first filed an application. A provisional application can be filed with the Indian Patents Office if the invention is still in the experimental stage, as it helps in establishing a priority date amongst competing inventors. India is also one of the top countries for scientific publications in technological categories such as natural language processing.³ As a result, PAEs have begun to mushroom in key Indian sectors such as automotive patents⁴, Internet of Things (“IoT”)⁵, and several operating companies have involved themselves in privateering with PAEs. Therefore, the need to address the lacunae in Indian patent and competition laws in order to tackle the same, is exigent.

2. THE CONCEPT OF PATENT ASSERTION ENTITIES

PAEs, often called “patent trolls”, are defined as firms with a business model focused primarily on purchasing and asserting patents, typically against operating companies with products currently on the market.⁶ PAEs typically seek to issue threats and letters of patent infringement to operating companies, offering the alleged infringer an opportunity to either avoid a trial by paying a negotiated settlement for a license, or to ‘battle it out’ through litigation. The letters are often sent to small businesses and non-profits, that

¹ WIPO, *China Becomes Top Tier Filer of International Patents in 2019 Amid Robust Growth for WIPO’s IP Services*, https://www.wipo.int/pressroom/en/articles/2020/article_0005.html (last visited Apr. 7, 2020); Indivjal Dhasmana, *India leads Asian peers in growth in filing of patents*, BUSINESS STANDARD (Apr. 25, 2017) https://www.business-standard.com/article/economy-policy/india-leads-asian-peers-in-growth-in-filing-patents-report-117042500080_1.html.

² WIPO Report on Technology Trends 2019: Artificial Intelligence, https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf.

³ Anonymous, *India emerging new target for patent filing in Artificial Intelligence: WIPO*, BUSINESS STANDARD (last visited Feb. 1, 2019), https://www.business-standard.com/article/pti-stories/india-emerging-new-target-for-patent-filing-in-ai-wipo-119020100581_1.html

⁴ Rahul Kapoor, *India an emerging hotbed for automotive patents: TVS Motor leads the charge*, INDIAN EXPRESS (Dec. 29, 2020), <https://www.financialexpress.com/auto/industry/india-an-emerging-hotbed-for-automotive-patents-tvs-motor-leads-the-charge-tata-motors-mahindra-hero-bajaj-hona-nissan-daimler-patents-in-india-electric-vehilces-bosch/2159657/>.

⁵ OUTLOOK INDIA, *Over 5,000 IoT patents filed in India over last 5 years: NASSCOM*, (Jun. 5, 2020), <https://www.outlookindia.com/newscroll/over-5000-iot-patent-filed-in-india-over-last-5-years-nasscom/1856965>.

⁶ Colleen Chien and Edward Reines, *Why Technology Customers are being Sued En Masse for Patent Infringement and What can be Done*, (Santa Clara Law Digital Commons, Working Paper No. 20, 2013).

lack the resources to defend themselves against claims of patent infringement.⁷ In addition, the letters often contain false/misleading statements aimed at scaring the recipient into purchasing a license, without offering a viable opportunity to investigate into the merits of the allegations.

The main objective of a PAE is “rent extraction”, which it seeks to obtain via three tactful strategies. It is to be borne in mind, that the strategy adopted is dictated by the type of patent rights held by PAEs. Before proceeding to the operation and functioning mechanisms of PAEs, a prior understanding of the strategies could prove useful in understanding the magnanimity of the threats they pose. *At first*, we have “bottom feeder trolls” that hold rights over a few patents. Akin to nuisance suits, they seek to realize a license settlement which would potentially cost less when compared to the amount expended in litigating a lawsuit. These trolls hope to deter small startup companies from proceeding to a trial, in return for a cheaper settlement.⁸ *Second*, the “lottery ticket trolls” play against probabilities and odds. These PAEs take on big corporations with high stakes, in the hopes of a big payout. *Third*, the “mass aggregators” are the most powerful PAEs, who hold patent rights over entire patent portfolios. With the control over many Standard Essential Patents (“SEPs”), they are aggressive in their assertion of infringement, and they possess the capability of enduring an expensive law suit.⁹ Mass aggregators pose the biggest threat to antitrust law, owing to their likelihood of aggregation and privateering with operating entities and non-PAEs, thereby escaping the scrutiny of competition authorities.

2.1 Behaviour and Impact of PAEs

Weakness inherent in a patent system, offers an avenue for PAEs to make demands using weak and dubious patents. By issuing letters of demand, this form of rent seeking operates as a burdensome tax on innovation.¹⁰ Every penny spent on defending a patent

⁷ Paul Milgrom and John Roberts, *Limit Pricing and Entry Under Incomplete Information: An Equilibrium Analysis*, 50 *ECONOMETRICA* 443, (Mar, 1982).

⁸ Mark A. Lemley and A. Douglas Melamed, *Missing The Forest For The Trolls*, 113 *COLUM. L. REV.* 2117, 2132, 2190 (2013).

⁹ Sanjai Bhagat and Robert Romano, *Event Studies and the Law: Part I: Technique and Corporate Litigation*, 4 *AMERICAN LAW AND ECONOMICS REVIEW* 141, 141, 153 (2001).

¹⁰ Mark A. Lemley and Douglas Lichtman, *Rethinking Patent Law's Presumption of Validity*, 60 *STAN. L. REV.* 45, 71 (2007).

infringement suit or negotiating a settlement, is proportionately a penny less spent on R&D and innovation. However, patent trolls are not problems in themselves; they are the symptoms of a deeper and more complex problem in the patent system. The following characteristics often exhibited by PAEs, expound on the impact they have on operating companies.

A. The Cost Factor

The unique positioning of PAEs, offers them a leverage in imposing serious impacts on the financial health of a corporation. This impact can be understood in the two commonly perceived notions.

i. Lack of Deterrence- Cross Licensing and MAD

Operating companies involved in R&D and product manufacture, when accused of patent infringement, generally resort to cross licensing of patents. By virtue of such licensing, the plaintiff company gets the right over the infringer's patents and *vice versa* (subject to mutual terms and conditions). The matter does not proceed to a court of law. In addition, cross licensing puts an implicit value on the patents owned by each party, by virtue of such patent exchange. The infringing company can thereby realize the value of its patents. Further, operating companies deter each other from expensive litigation through defensive stockpiling of patent portfolios.¹¹ The resulting 'Mutually Assured Destruction' ("MAD"), prevents aggressive assertion of patent rights as there is a risk symmetry between the two parties.

On the contrary, PAEs do not deal with production, and therefore do not implement the patents they own, in their operation. It is merely a means through which they earn their revenue. In asserting a fixed price of settlement, the defendant company is left to choose between realizing the value of its valid patent on arbitrary terms, or, to endure a long and expensive legal battle in a courtroom. Therefore, the trade off in cases of PAEs is

¹¹ Mark A. Lemley and Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2006 (2007).

disproportional when compared to dealing with operating companies, and significantly more expensive. Further, the expending can cut through an entity's core business resources.

i. The Illusion of Money

Troll suits involve cash payments, directed out of the corporate budget of the defendant company. Moreover, companies do not consider their patents to be monetizable assets. Patents are viewed as assets leading to long term revenue generation, and as an ingredient for future innovation and production. It is not the general norm for operating companies, to use their licenses and patents as a threat to sue or deter other entities.¹² Therefore, paying exorbitant and arbitrary license settlement out of quarterly budgets to PAEs, creates the illusion of being much more expensive in terms of corporate liquidity.

B. Royalty Stacking

In fields such as AI and Information Technology, thousands of patent innovations are integrated in making multicomponent devices work. Therefore, a single product might be potentially incorporating several patented technologies. In a dynamic and technologically advanced environment, companies develop technologies at a faster pace, in order to meet the demands and needs of the market.

Generally, royalty is charged for the use of each license; and in cases of SEPs, Fair, Reasonable And Non-Discriminatory terms (hereinafter referred to as “**FRAND terms**”) might restrict the royalty charges to a reasonable and fair amount. This is because, SEPs are elemental in technological advancement in a given field, and if left unfettered, SEP holders may invariably charge significantly higher amounts. However, when a product uses several patented technologies, the aggregate royalty charges paid in making a product, might exceed prohibitory limits. Simultaneous inventions and inadvertent infringements are ubiquitous in the field of Information Technology and telecommunication¹³. There is no mala fide intention to infringe on the rights of other patent holders. As a strategic move, PAEs who

¹² LEMLEY, *supra* note 4, at 4.

¹³ Christopher A. Cotropia and Mark A. Lemley, *Copying in Patent Law*, 87 N. C. L. REV. 1421, 1427 (2009).

hold SEPs, begin to bundle them with non-SEPs, in order to charge royalty for each license while escaping the obligations imposed by FRAND terms. Therefore, royalty stacking by PAEs owning diverse patents, as opposed to licensing them as a single patent portfolio with fixed price, can have detrimental effects on operating companies. Owing to the fear of infringement, many small startup companies might be deterred from investing in research and innovation, as the cost incurred in paying the charge of royalty stacking in a dynamic market, far outweighs the benefits of investment in patentable technologies.

C. Patent Aggregation

A problem associated with mass aggregating tolls, is that of patent aggregation. By aggregating and accumulating a large number of patents and portfolios, a single PAE has the capacity to overwhelm the alleged infringers by giving them almost no choice, but to pay for the bundle of patents. Even in cases where the infringers believe that the patents held by such aggregating trolls are invalid or dubious, the cost of challenging them in a litigation proceeding, prohibitively bars them from ascertaining the validity and worth of such patents. Moreover, market power in terms of patent rights, can enable aggregators to combine substitute and complementary patents to their portfolio. A patent aggregator that deserves mention in this regard, is Intellectual Ventures. Commonly seen as the boogiemaster for aspiring technology companies¹⁴, Intellectual Ventures is globally known for its patent aggregation and disruptive litigation, and the company has raised over USD 6 billion by acquiring close to 70,000 patents and other intellectual property assets.¹⁵ As a result, competing companies and technology users cannot bargain for low royalties; the price fixed by the aggregator would be the final determinant (especially in cases of non-SEPs).¹⁶ Disproportionate pricing could act as a market barrier in enticing entrants into market participation. In addition, aggregating trolls have the discretion in choosing to strike a deal with operating companies, for the purpose of transferring the ownership rights of portfolios

¹⁴ Morgan Baskin & Jack Denton, *The Ultimate Patent Troll*, PACIFIC STANDARD, (Sept. 16, 2018), (<https://psmag.com/magazine/a-patent-boogiemaster-with-the-potential-to-obliterate-aspiring-startups>); Tom Ewing & Robin Feldman, 'Patent Mass Aggregators: The Giants Among Us', IP WATCH DOG, (Feb. 06, 2012), (<https://www.ipwatchdog.com/2012/02/06/patent-mass-aggregators-the-giants-among-us/id=22137/>).

¹⁵ Dan Levine, *Intellectual Ventures settles lawsuit against Xilinx*, REUTERS, (May. 3, 2014), (<https://www.reuters.com/article/iv-xilinx-lawsuit-idUSL2N0NO1WM20140502>).

to competing firms, thereby disrupting healthy competition determined by demand and supply.

D. Hybrid PAEs- Collusion and the Pathway to an Anti-Competitive Practice

i. Patent Privateering

With a slight deviation from the traditional approach adopted by mass aggregator trolls, a hybridized version of PAEs has been paving the way for anti-competitive collusions. The resultant hybrid is the ‘privateering’ model. In this model, operating companies transfer their patent rights to PAEs, enabling the latter to assert patent claims which the operating companies was unable to assert, *OR*, to evade commitments relating to SEPs entered into by the operating companies themselves. Privateering allows companies to use third parties (PAEs) to sue competing firms, by issuing threats of a potential lawsuit. As a result, many upstream and small-scale downstream companies are enfeebled. Often, proxies are employed to obviate regulatory obligations imposed by IP and competition authorities. Operating companies use PAEs as proxies for anti-competitive ends.

The role of an intermediate proxy played by PAEs, could potentially unencumber operating companies from anti-royalty stacking commitments. Certain patents classified as SEPs, are patents which require inventions to comply with a technical standard. In cases where a product requires multiple patents, operating companies might have to acquire licenses *a la carte*, as opposed to acquiring them in a bundle. But such an *a la carte* system would not possess the economies of scale that companies desire. The resulting royalty stacking can potentially threaten pro-competitive bundles, thereby retarding innovation.¹⁷ It is for this reason that Standard Setting Organizations (“SSO”) formulate non-stacking pledges and provide incentives to companies, to create technical standards for SEPs. SSOs often require SEP holders to make a prior announcement that their patent licensing would be in consonance with the FRAND terms. FRAND compliance is aimed at preventing SEP aggregation and hold-up, as a refusal to license essential patents or charging an exorbitant/discriminatory royalty for such patents, can hamper innovation, deter investors from making

¹⁷ David S. Evans and Michael Salinger, *Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law*, 22 YALE J. ON REG. 37, 45, 74 (2005).

a foray into the IP sector, and ultimately increase the price for the end consumer. By the virtue of transferring SEPs to patent trolls, operating companies are no longer the patent holders subject to FRAND commitments. Moreover, there is no universally binding guideline requiring future licensees to adhere to FRAND commitments. Flexibility is accorded to domestic jurisdictions, to determine the stringency of licensee obligations. Therefore, PAE as a proxy can refuse to license SEPs to competing firms or charge discriminatory royalties, without the operating companies being subject to liability.

ii. Raising Rival Costs (“RRC”) Foreclosure

The RRC Foreclosure paradigm focusses on an exclusionary conduct that either totally or partially, forecloses competitors from gaining access to critical inputs or customer base. This leads to rival competitors either raising their prices or reducing the level of output, while simultaneously allowing the excluding firm to set a supracompetitive output price. RRC in theory, allows firms with monopoly powers to take actions that harm its competitors even if it harms the firm with monopoly power itself.¹⁸ In the context of privateering and roping in PAE proxies, an avenue for the credible creation of an RRC strategy is created in conjunction with the specific benefits of PAE, coupled with the help of bargaining asymmetries available in patent portfolio control. This can lead to a significant increase in the prices of rival products (for critical input acquisition), whilst the excluding operating firm continues to set a supracompetitive price, resulting in an increased price to the end consumer. RRC behavior and strategy is not anti-competitive per se, or illegal; it might merely amount to a function of firm rivalry. However, the anti-competitive element gets attached when the strategy is based on the theory of overt exclusion.

RRC appears to be a feasible approach to privateering hybrid PAEs and operating firms for the following reasons. It is also to be noted, that RRC often escapes antitrust scrutiny for its seemingly innocuous operations. *First*, RRC does not require rivals to exit the market or even face a long-term reduction in their level of production. If the marginal cost of producing a product is raised, competitors will be incentivized to increase their prices

¹⁸ Douglas A. Melamed, *Exclusive Dealing Agreements and Exclusionary Conduct- Are There Unifying Principles*, 73 ANTITRUST L. J., 435 (2006).

and reduce their level of output, if viable. *Second*, RRC foreclosure is not necessarily more costly to the excluding firms, when compared to excluded rival firms. The benefits obtained, largely offset the cost incurred in acquiring proxy PAEs for privateering.

In light of privateering and RRC foreclosure, one of the most notable cases in this forefront, is the case of *Rockstar Consortium*. The said consortium consisting of Google, Apple Inc, Microsoft and Research in Motion, made a group bid for the patent portfolio of Nortel Networks. While the United States Department of Justice granted an approval for the deals to succeed, it did not foresee the chances of the consortium itself turning into a PAE. While its order required acquiring firms to comply with FRAND terms, Rockstar unencumbered itself from such obligations by becoming a PAE, by pursuing an RRC strategy. This strategy allowed for Microsoft to publicly commit to keeping its FRAND commitments while simultaneously pursuing an RRC strategy through Rockstar.¹⁹ This highlights the problematic nature of a seemingly innocuous a patent acquisition deal, when it adopts the RRC strategy.

3. THE ANTI-COMPETITIVE CONCERN

Granting patent rights not only secures a short-term exclusivity to the inventor, but this act of rewarding genuine innovation, is beneficial for healthy competition. More and more people are motivated to dwell into R&D, in an attempt to invent newer and more modern patentable technologies. However, patent law and antitrust laws are often viewed in contradiction. The latter is understood to restrict market monopolization, while the former is presumed to offer opportunities of monopoly. *But can the two seemingly contradictory body of laws be harmonized, in the context of the competition concerns raised by PAEs?* This particular section seeks to delineate the reasons for the perceived deviation observed between patent and antitrust laws, while drawing inferences from prominent cases decided in relevant IP jurisdictions.

¹⁹ In re Nortel Networks, Inc., 469 B.R. 478 (Bankr. D. Del. 2012).

1. The United States

The Federal Trade Commission (“FTC”), has employed SSO terms and FRAND commitments in deciding patent monopolizing cases, as opposed to resorting to the provisions of the Sherman Antitrust Act, 1890 (hereinafter referred to as the “**Sherman Act**”)²⁰. A deference to established IPR Guidelines laid down by companies’ consortium, *vis a vis*, technical standards, is given a more purposive interpretation.

In the case of *FTC v. Qualcomm Inc*²¹, the “no license, no chip” policy of Qualcomm was adjudged to be an anticompetitive tactic used to disrupt the patent market and harm competitors.²² Qualcomm, being the world’s largest dominant supplier of baseband processors and a part of the SSO for telecommunications, had imposed onerous terms and anticompetitive licensing and supply terms on cell phone manufacturers, in order to weaken its competitors. In addition, by holding patents considered to be SEPs in the field of cellular connectivity and technology, it held a dominant position in the market.

According to FTC, *first*, Qualcomm conditioned the sale of its modern chips to customers on them mandatorily accepting to license its SEPs; and these SEPs were licensed for “elevated royalties”. *Second*, it refused to license SEPs to competitors in the chip supplying market. Section 5 of the Federal Trade Commission Act (“**FTCA**”) prohibits “*unfair methods of competition in or affecting commerce*”.²³ In addition, the FTC under the said section, may “*bar incipient violations of the Sherman Act, and conduct, which although not a violation of the letter of antitrust laws, is contrary to its spirit*”.²⁴ Moreover, for SEPs, FRAND Commitments²⁵ include an express obligation to license to all comers, including competing modern chip suppliers. Technical standards for patent licensing and royalty extraction are specified, to ensure that products from different manufacturers and

²⁰ 15 U.S.C §§1-38.

²¹ Kristen Osenga, *Formerly Manufacturing Entities: Piercing the “Patent Troll” Rhetoric*, 47 CONNECTICUT L. REV. 435, 465 (2014).

²² Federal Trade Commission v. Qualcomm Inc., 411 F. Supp. 3d 658, 215-232 (N.D. Cal. 2019).

²³ 15 U.S.C. §45.

²⁴ Federal Trade Commission Act of 1914 §5, 15 U.S.C §45.

²⁵ *Microsoft v. Motorola* (W.D. Wash 2012); *Apple v. Motorola* (D. Wis. 2012)].

competitors are compatible with each other. In addition to interoperability, a uniform standard such as FRAND, cuts down product costs and increases competition in the market.

The Telecommunication Industry Association (“TIA”)²⁶ and Alliance for Telecommunications Industry Solutions (“ATIS”) IPR Policies under the FRAND commitments in this specific case include non-discriminatory provisions, which effectively prohibit Qualcomm from distinguishing between different types of applicants. Under the TIA Policy, a SEP holder promises to license its SEPs to “all applicants on terms and conditions that are reasonable and non-discriminatory”. The District Court of California upheld FTC’s claims against Qualcomm’s discriminatory licensing terms, on the basis of the pro-competitive principles underlying the IPR Policies and Guidelines. In seeking to ensure that the public benefits, while also respecting the legitimate rights of IP owners, the TIA Guidelines specify that the FRAND Commitments “*prevent the inclusion of patented technology from resulting in a patent holder securing a monopoly in any market, as a result of the standardization process*”.²⁷

2. China

In the last decade, China has claimed for itself a position in the top ten destinations for patent filing and R&D, in science and technology. With Baidu leading the way in AI patent application (with 5,712 patents), other entities such as the Chinese Academy of Sciences possessing the largest portfolio in Deep Learning techniques (235 patent families), it has emerged as an attractive jurisdiction for patent filing.²⁸ Deep learning is expanding as a mode of learning, as its neural networks and advanced algorithms help in performing calculations, arriving at accurate predictions, and in progressively learning the outcome of

²⁶ Guidelines to the Telecommunications Industry Association Intellectual Property Rights Policy (1st ed., 2014), https://www.tiaonline.org/wp-content/uploads/2018/05/Guidelines_to_the_Intellectual_Rights_Policy_of_the_Telecommunications_Industry_Association.pdf.

²⁷ James Delacenserie, *FTC v. Qualcomm: Standard Essential Patent Holders Must License to Competitors*, HARVARD LAW DIGEST (Nov. 19, 2018), <https://jolt.law.harvard.edu/digest/ftc-v-qualcomm-standard-essential-patent-holders-must-license-to-competitors>.

²⁸ *Baidu Leads the Way in Innovation with 5,712 Artificial Intelligence Patent Applications*, GLOBE NEWS WIRE, (Dec. 6, 2019), <https://www.globenewswire.com/news-release/2019/12/06/1957432/0/en/Baidu-Leads-the-Way-in-Innovation-with-5-712-Artificial-Intelligence-Patent-Applications.html>.

a given set of raw data.²⁹ The three most important architectures of Deep Learning are, Convolution Neural Network (“**CNN**”), Recurrent Neural Network (“**RNN**”) and Recursive Neural Network. Global corporations have been alert in recognizing the growth spurt in IP innovation in China, and have begun to tap into the Chinese market. However, with respect to PAEs, very few homegrown companies have posed threats as patent trolls. Significant cases adjudicated by courts, often stem between an international company behaving as a patent troll with a domestic company, thereby violating SEP and FRAND requirements.

The case of *Huawei v. InterDigital Corporation*³⁰, saw China at the cross roads of patent rights, antitrust regulations and competition law. Huawei had filed its claim in the Shenzhen court, alleging that InterDigital had, a) abused its dominant position in the market, contrary to the Anti-Monopoly Law of China³¹, and b) as a holder of several SEPs, had failed to comply with FRAND terms in licensing patents to the plaintiff company. InterDigital being a dominant SEP holder in the communication standard, had tied several of its essential SEPs with non-SEPs during licensing negotiations. It also resorted to charging exorbitant royalties from Huawei, by seeking injunction orders in several District Courts in the United States while negotiations were still in the processing stage. Huawei was forced to accept unreasonable licensing terms. The royalty charged was twice as high as those charged for other companies such as Apple and Samsung, operating in the same business. This was seen to be a clear discriminatory and unjustifiable breach of the FRAND terms. In addition to the aforementioned observations, the Guangdong High Court made several significant comments that are akin to US jurisprudence on the same: it was observed that InterDigital owned essential patents relating to the global 3G wireless communication field, and it thereby enjoyed a unique and irreplaceable dominant position in the specified market. The Court held that the following factors had to be considered in a holistic manner, when determining the reasonability of the royalty rates charged to a licensee: a) the quantity, quality and value of the SEPs held by the patent holder, b) the relevant licensing situation in a specified industry, and c) the share of the patent holder’s SEPs in the market.

²⁹ Volodymyr Mnih & Others, ‘Playing Atari with Deep Reinforcement Learning’, (2013), <https://www.cs.toronto.edu/~vmnih/docs/dqn.pdf>.

³⁰ Huawei Technologies Co. Ltd. v. InterDigital Corporation, [Guangdong Civil Judgement (2013)].

³¹ Anti-Monopoly Law of the People’s Republic of China, 2007.

a. *Defining ‘Market’ in Relation to SEPs*

The two major characteristics of SEPs are: *uniqueness* and *non-substitutability*. In a standard setting process, once a patent is adopted as a SEP, market participants forego the opportunity to invent technologies around the SEP, or create a substitute of it. Companies have to obtain licenses for SEPs and use them in their products as their **only and irreplaceable choice**. In a strong sense, companies are “locked in”. Therefore, when a single entity owns a SEP standard, it translates to a hundred percent market share in that specific market for SEPs. Taking cognizance of the same, Chinese courts have reduced the threshold required in establishing “dominance” of SEP holders, in filing an antitrust suit.

b. *The “Locked In” Effect and Dominance Abuse*

The US Court of Appeals in *Broadcom v. Qualcomm*³², held that a SEP may confer on its owner “market power”, regardless of how the market is defined. This is because, implementing the essential standard is a *sine qua non* for market entry and sustenance.³³ Affirming this, the Shenzhen court linked the concept of market power to “locking in” of firms. A number of companies invest vast resources in developing products that adhere to a particular standard. It would be prohibitively expensive for them to abandon investments and shift to other standards. They are “locked in” in the sense of product innovation and standard compliance.³⁴ This accords the owner of SEPs a unique bargaining position, enabling it to charge supracompetitive royalties from rivals and participants.³⁵

In addition, a trend that is emerging, is the collusion and mergers carried out between patent implementing entities, for the purposes of establishing PAE joint ventures, in order to eliminate/restrain competition; and this colluding has attracted the attention of various competition regulators. The famous Nokia acquisition by Microsoft, along with its meaty

³² *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297 (3rd Cir. 2007).

³³ *Broadcom Corp. v. Qualcomm Inc.*, 501 F. 3d 297 (3rd Cir. 2007).

³⁴ Daniel G. Swanson & William J. Baumol, *Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power*, 73 ANTITRUST L.J. 1, 5, 10-11 (2005).

³⁵ Samsung, Nokia and ZTE 2013 USITC Proceeding (337-TA-868), <<https://www.sec.gov/Archives/edgar/data/1405495/000140549514000017/idcc-20143312014.htm#sC9240CF5F5A753D656B388B46719C341>>.

patent portfolios in the mobile phone market, fuelled scepticism in the minds of Chinese authorities of Nokia turning into a potential aggressive PAE.³⁶

Nokia, by exiting the downstream market was presumed to be no longer threatened by cross-licensing and counter-patent assertions by similar operating companies. As a result, potential licensees requiring SEPs held by Nokia, would be unable to counterbalance Nokia's superior bargaining position. This in turn, would incentivize Nokia into charging exorbitant royalties. More importantly, 80% of Chinese mobile manufacturers produced Android models that implemented SEPs owned by Nokia. Therefore, there was a strong case for this acquisition to act as a major barrier for competition. The Ministry of Commerce ("MOFCOM") has been careful in formally dealing with PAEs. The *effect* of an entity's conduct is deemed to determine the market effect, and the Anti-Monopoly Law of the People's Republic of China has played a crucial role in this case. The MOFCOM conditioned the approval by subjecting Nokia to the following conditions; all SEPs held by Nokia has to be compulsorily licensed under FRAND terms in China, and all future licensees of Nokia are also subject to SEP standards and FRAND commitments.

MOFCOM's approach is novel, as it imposes FRAND terms on entities purported to turn into PAEs. Though no econometric analysis was conducted to gather factual data on patent rights abuse, MOFCOM highlighted the impacts of SEPs in merger cases, and a strong case for a robust merger review.

3. Japan

A unique intersection of competition and patent law is found in Japan. The Unfair Competition Prevention Act, 1993³⁷ ("UCPA") belongs to the genus of Intellectual Property laws, as opposed to competition law. More importantly, the Anti-Monopoly Act³⁸ ("AMA") plays an overarching and predominant role in regulating patent rights and holding.

³⁶ Anonymous, *Microsoft's acquisition of Nokia patent game: Huawei ZTE application review*, People's Network, (Dec. 26, 2013), <http://ip.people.com.cn/n/2013/1226/c136655-23949632.html>.

³⁷ The Unfair Competition Prevention Act (Act No. 47 of 1993).

³⁸ The Antimonopoly and Fair Trade Maintenance Act, 1947.

The Japan Fair Trade Commission (“JFTC”) IP Guideline 2009³⁹ explains the implications of Article 21 of the AMA: “An act by a right holder to a technology to block other parties may seem, on its face, to be an exercise of right. The provisions of the Antimonopoly act become applicable in cases where, though an act “may seem” to be an exercise of rights, it cannot be “recognized” as the exercise of the rights. An act is not “recognized” as a right when it deviates from or runs counter to the intent and objectives of the IP system, which is to motivate entrepreneurs to actualize their creative efforts and make use of technology, in view of its intent and degree of impact on competition”.⁴⁰

The significance of the “recognizable” component is that it offers discretion in terms of statutory interpretation to not only patent authorities, but also the JFTC, which is a competition/antitrust regulator. The underlying principle in each decision should be to further indigenous technological development by effective patent licensing, and ensuring a free market where domestic participants can enter at ease. In addition, an important factor that is often overlooked in relation to patent assertion by PAEs is, “*competition relationships*”. In the United States, a competitive relationship between an excluding and excluded firm is necessary, in order to take an action under domestic antitrust laws. It is believed that PAEs do not assert and compete with potential licensees, out of self-interest.⁴¹ In contrast, the AMA in Japan does not require competitive relationships between PAEs and other plaintiff entities.⁴² This position is supported by the fact, that plausible anticompetitive effects to a relevant market remain unchanged, whether or not there exists a competitive relationship. Moreover, sufficient incentives to exclude a non-competitor would exist, when the conduct of assertion ensures abundant payment by a competitor of the excluded firm to the PAE, owing to the supracompetitive profits available to the paying party.

4. THE CURRENT POSITION IN INDIA

³⁹ JAPAN FAIR TRADE COMMISSION GUIDELINES ON EXCLUSIONARY PRIVATE MONOPOLIZATION UNDER THE ANTIMONOPOLY ACT, 2009.

⁴⁰ JAPAN FAIR TRADE COMMISSION, GUIDELINES CONCERNING DISTRIBUTION SYSTEMS AND BUSINESS PRACTICES UNDER THE ANTIMONOPOLY ACT (Note 6), (2009).

⁴¹ *Official Airline Guides, Inc. v. Federal Trade Commission*, 630 F. 2d 920 (2d Cir. 1980).

⁴² *Healthcare Food Association*. 1996. Japan Fair Trade Commission, Heisei 8 (Kan) 14, (May. 8, 1996).

While the debate over SEPs and PAEs in India is in its nascent stages, having drawn inspiration from international jurisdictions, several questions on the jurisdictional interplay between the Competition Act, 2002 and the Patents Act, 1970 have been raised. The primary question raised in each of the decided cases, has centered around whether anti-competitive conduct relating to SEPs can be investigated under the Competition Act, 2002 (“**Competition Act**”) and whether the Competition Commission of India (“**CCI**”) has jurisdiction to scrutinize the alleged behavior of a SEP holder, including the observance of FRAND terms.

The CCI has initiated investigations in three cases till date, out of which *Micromax Informatics Limited v Telefonaktiebolaget LM Ericsson*⁴³, is the most significant.

In this case, Ericsson held eight SEPs which had no alternative technologies available in the market. The plaintiff alleged an abuse of dominant position by Ericsson, as it charged exorbitant royalty rates. The royalties were charged not on the basis of the patent technology implemented by the firms, but rather on the value of the mobile handset (that used the technology) in the downstream market. In addition, Ericsson was accused of royalty stacking, as it had bundled the licensing of non-SEPs with the eight SEPs that it owned. CCI in this case observed that, owing to the non-availability of alternate technology in the market for mobile communication devices in India, Ericsson with its eight SEPs, held a dominant position in the market. The “dominance” aspect was established. In recognizing the importance of FRAND terms for maintaining the integrity of standard setting activities, the CCI found no rational nexus between the patented technology and the discriminatory pricing charged by Ericsson, calculated on the basis of the handset used. The CCI observed that the patent holder is required to apply FRAND terms fairly and uniformly to similarly placed players, and in the present context, Ericsson not only violated FRAND terms, but also violated Section 4 of the Competition Act, in imposing unfair and discriminatory terms on the plaintiff, owing to its superior bargaining position in the relevant market.⁴⁴

⁴³ Case No. 50/2013, Competition Commission of India.

⁴⁴ *Micromax Informatics Ltd v. Telefonaktiebolaget LM Ericsson (PUBL)*, Competition Commission of India, Case No. 50 (2013).

When the order was appealed, the Delhi High Court in its analysis, highlighted the importance of harmonizing patent laws and competition laws in dealing with patent assertions by SEP holders. The order stated, that though the Patents Act, 1970 was a special statute with overriding powers in case of inconsistencies, the two legislations were to be harmonized. The remedies offered by the two bodies of law were not mutually exclusive, and in correlation, they contemplate the exercise of jurisdiction by different regulators in different aspects. In upholding the ratio of *Huawei v InterDigital*⁴⁵, it held that royalty stacking and FRAND violations indirectly led to patent hold up and increased costs to competitors, thereby resulting in a foreclosure of competition.⁴⁶

5. ANALYSIS

In the following section, the void that subsists in the characterization of PAEs, as well as the misconception of competition regulators with respect to the analogousness of concepts akin to antitrust cases, is discussed. This is borne out of the emerging trend of bringing scores of patent infringement suits under the radar of competition regulators, on the basis of hypothetical probabilities of them transforming into PAEs.

A. A Search for PAE Definition and the Complexity of Characterization

The United States FTC (“USFTC”) has defined a PAE to be an entity that uses “the business model focusing on purchasing and asserting patents against manufacturers already using the technology, rather than developing and transferring technology.”⁴⁷ The key differentiator which remains in telling anti-competitive behavior from valid patent assertion endeavors, is patent origination:⁴⁸

⁴⁵ *supra* note 29.

⁴⁶ *Telefonaktiebolaget LM Ericsson v. Competition Commission of India*, [W. P. (C) 464/2014 & CM No. 911/2014, 915/2014].

⁴⁷ United States Federal Trade Commission Report (2011), No. 2, at 50.

⁴⁸ Jiaqing Lu, *The Economics and Controversies of Nonpracticing Entities (NPEs): How NPEs and Defensive Patent Aggregators will Change the License Market (Part I)*, LES NOUVELLES 55, 62 (2012).

Were the technologies merely acquired or created through in-house innovation and R&D capacities? Drawing a clear line between the business model of an innovator and an exploiter is dicey, as an entity's form is not always determinative.⁴⁹ An entity can act as a troll, while in fact, it might not simply be a troll. An important question that domestic jurisdictions should answer, is whether the alleged harms of anti-competitive behavior should automatically be attributed to PAEs owing to their status of being aggressive patent asserting entities, *OR*, should greater scrutiny of the actual conduct have to be analyzed to pursue further anti-trust regulations?

As mentioned earlier, MOFCOM had imposed conditional terms on Nokia in the likelihood of it being influenced by extraneous motivations and switching over into an exploitative PAE. However, the conclusion in light of MAD elimination and Nokia's PAE transformation is impulsive and short-sighted. In stating that the merger would take away the prospect of cross-licensing and retaliation through counter suits by other rival operating companies, MOFCOM and the JFTC are observed to have taken a narrow approach in many cases, by focusing solely on the "product" market. In IT and wireless communication markets, retaliation and counter suits might originate from "innovation" or "technology" markets, owing to the interdependency of patents in the process of product creation. In addition, propelled by a desire to maintain a competitive edge by specializing in technological innovation, Nokia might be discouraged from increasing its royalties from existing patents in order to maintain its competitive edge.⁵⁰ The pricing could attract potential licensees to license SEPs from Nokia, an established leader in wireless technology, as against licensing them from its rivals. Therefore, an allegation by regulators, on a theoretical possibility of Nokia maximizing royalty and becoming a PAE is insufficient.

B. The Accosting Problems of Blanket Meaning Importation

⁴⁹ Erica S. Mintzer and Suzanne Munck, *The Joint U.S Department of Justice and Federal Trade Commission Workshop on Patent Assertion Entity Activities- "Follow the Money,"* 79 ANTITRUST LAW JOURNAL 423, 426 (2014).

⁵⁰ Peter C. Grindley and David J. Teece, *Managing Intellectual Capital: Licensing and Cross-Licensing in Semiconductors and Electronics,* 39 CALIFORNIA MANAGEMENT REVIEW 8, 20 (1997).

Often, enforcement hurdles prevent small investors and startups from filing for patents. The economies of pursuing an infringement suit, is weighed against small entities. Large corporations implementing such patents might be lackadaisical in responding to notices and demand letters, and the cost of a lawsuit may be prohibitive for small companies facing an uncertain payoff. It is in this situation that PAEs can become a part of the patent process, in ensuring a level playing field by generating economies of scale in litigation, and reducing the risk borne by smaller patent holding companies. In addition, the secondary patent market created by PAEs, help failed startups monetize their patent and allow it to be used in the market place. This leads to incentivizing greater R&D and innovation in patent technologies. Therefore, the significant benefits provided by PAEs cannot be slighted, when drawing a contrast to the unfair and anti-competitive behavior they impose.

However, the deviation between patent and antitrust law runs deeper than authorities recognize. Similar concepts and terminologies are employed, but in entirely different meanings and contexts; and it is this misunderstanding and misperception that blurs the line and leads to lacunae, with PAEs using it as an avenue in furthering their revenue maximization. Both the United States and Japanese supreme courts have previously ruled that antitrust law (can) operate only when patent holders reach beyond the boundaries inherent in the patent grant.⁵¹ This includes the “intent” and “implied objectives” of patent law. Unfortunately, no court has been able to affirmatively rule on the exact determination of the boundaries inherent in a patent grant. Both uncertainty and confusion in this case have spawned great consternation on the powers that lie within and outside the bounds of patent grants. The following section deals with two of the most prominent debates surrounding the patent and antitrust law intersection, and the potential impacts it could have, if misconceived.

i. *The Concept of “Exclusivity”*

The notion of exclusivity in antitrust law, takes its meaning of permitting one party to the exclusion of others. It stems from the notion of occupying a competitive sphere and policing the same, to the exclusion of any form of incursion by potential rivals. This would

⁵¹ Carbice Corp. v. Am. Patents Deb. Corp., 283 U.S. 27, 34 n.4 (1931).

imply, that a firm has the power to exclude its rivals. But both competition and patent regulatory authorities believe that this notion translates *in toto* to patent law.⁵²

Antitrust laws analyze patents, as rights to keep *everyone* out of the defined sphere of patent grants. Patent laws grants the right to exclude others, but the notion of exclusivity in patent law is different from that of antitrust law. A patent is a negative right as opposed to a positive right. Contrary to the slovenly language used by authorities in describing the nature of the right, a patent does not grant the right to create, use and sell the invention. No affirmative rights are accorded. Rather, a patent grants the right to exclude others, but it does not accord an exclusive sphere to the patent holder- and this includes the sphere defined in the patent itself. Even within the sphere covered by a patent, there might be others situated in the same sphere. For instance, if A holds an original patent that covers a certain number of uses of the product, and B covers any other particular use of the product, both A and B can exclude each other, and any person/entity wanting to use the product, needs to negotiate and settle terms with both A and B. The “right to exclude” still subjects patent holders to negotiate with those that have overlapping rights to exclude. This constraint reveals the limited nature of a patent grant. A patent grant is a far less powerful concept, than exercising complete control over a sphere of technology or innovation, as often contemplated by antitrust authorities. This misperception is not merely a concern of semantics. It can have long ranging consequences of inhibiting innovation, as every attempt to secure protection by big entities owing patent portfolios can always be brought under the radar of antitrust regulators for anti-competitive behavior. *Therefore, the relevant question is not whether a patent possesses value, but whether substitutes for the same are available.*

ii. Monopoly and Monopolization

In antitrust terms, a firm is said to have “monopoly” when it has sufficient power to affect and command market prices, while being able to restrict competitors’ output. It measures market power by looking into the shares held by a monopolistic firm in a defined market. Earlier, courts in the United States and the European Union explicitly spoke of “patent monopoly”, and held that the existence of a valid patent was sufficient to establish

⁵² *Abbot Labs. v. Brennan*, 952 F.2d 1346 (1991), at 1354-55.

market power in antitrust cases. However, a patent is no guarantee of power in a defined market for the following reasons.

First, substitutes and close alternatives in a market offer sufficient cross-market elasticity, disallowing a single firm to exercise power over an entire sphere of activity. It is often argued that the high value of a patent held by an entity confers automatic power in the market. But value does not simultaneously confer unfettered power.⁵³ *Second*, patents merely grant opportunities. For monopoly to be established, tangible evidence of the product attracting the market is to be ascertained. But in cases of patents, there is no guarantee that an invention will be successful in capturing market interest.⁵⁴ Even with respect to novel inventions, the affirmative guarantee that the market will categorically recognize the true worth and value of an invention, appear wanting. The true genius of an invention and its applications take a significant amount of time to be realized, and might even occur once the term of the patent expires. *Third*, an incompetent “monopolist” that fails to exude novel innovations and products, might in fact create opportunities for other entities to enter the market and compete. Stimulated by market behavior, similarly situated firms are incentivized in creating alternate products that can potentially work in the market. This leads to the erosion of monopoly, and effectively leads to increased competition.

With regard to monopolization, antitrust laws do not condemn entities for gaining or maintaining monopoly, if the same is a result of skill and hard work. Only certain types of behavior have been condemned and forbidden, in the road to market domination.⁵⁵ It is this behavior that is termed as “monopolization”. In all the tests that have been employed, in each of the aforementioned jurisdictions, the focus is on identifying behavior that seeks to keep rivals from entering the competitive market. But there exists no clear conception of the threshold of footprint that a patent should reach, or how much market damage it is to cause in the context of a patent grant, before it is conceived as monopolization. This conceptual void, prevents a coherent deliberation on the limits of acceptable behavior of patent holders, irrespective of whether the rules flow from patent laws or antitrust laws.

⁵³ William Montgomery, *The Presumption of Economic Power for Patented and Copyrighted Products in Tying Arrangements*, 85 COLUM. L. REV., 1140, 1156 (1985).

⁵⁴ Robin Feldman, *The Insufficiency of Antitrust Analysis for Patent Misuse*, 55 HASTINGS L. REV. 400, 437 (2003).

⁵⁵ *United States v. Aluminum Co. of America*, 148 F.2d 416 (2d Cir. 1945).

6. CONCLUSION

While patent and antitrust laws strive to foster innovation, the situation assumes great complexity when PAEs holding dubious patents assert rights and privateer as proxies. In light of the misperception and blind imputation of terms on patent and antitrust laws, and the lacunae apparent in patent regime, *what trajectory should be undertaken in order to bolster genuine patent innovation and healthy market competition in a given jurisdiction?*

The Agreement on Trade Related Aspects of Intellectual Property Rights, 1995 (also known as the “TRIPS Agreement”) to which India is a signatory, offers flexibility to domestic jurisdictions, enabling them to curate policies and regulations that are conducive to their national priorities. Therefore, the solution to PAEs begins with patent grants and starts at the level of domestic jurisdictions.

First, the scrutinization of patent application is critical in the process of granting rights. Most PAEs are reported to have asserted dubious patents with inferior quality. Therefore, in the context of a given jurisdiction, one needs to choose either a registration or an examination system. The former allows for self-assessment by applicants, and to the extent that they are in compliance with the provisions of domestic patent laws, rights are granted. In contrast, an examination system involves stringent standards and higher level of scrutiny. The aspects of “novelty”, “inventiveness” and “use” are examined in greater detail, before granting rights. While an examination system appears superior and advanced in terms of its approach, it cannot be adopted in every patent jurisdiction. Capital and human resource constraints might require a country to implement a registration system. Therefore, developing countries such as India, need to take an educated and informed decision with respect to the system they would like to adopt, in the larger interests of national objectives.

Second, most jurisdictions including the European Union, India, Japan and China, attempt to delineate “absolute” novelty from “relative” novelties. The former refers to inventions that have not been publicly known anywhere in the world, prior to the filing of

the patent application.⁵⁶ Relative novelty would refer to those inventions that have been known and used only in that relevant jurisdiction, as opposed to global usage and knowledge. This approach is short-sighted and unhelpful when dealing with patents in AI and healthcare, as second use of patents and follow-on innovations are generally carried out. The very definition of “absolute” is unclear, as it differs among jurisdictions. Therefore, to better address the question of patent authenticity in terms of novelty, it would be useful to deconstruct the concept of novelty into its constitutive elements. The relevance and advantage of an element, in the usage of a particular patent can be analysed, to determine a truly genuine invention. *Lastly*, countries should adopt the “*hierarchy of inventiveness*”; primary and original inventions should be given primacy over sequential and subsequent innovations. While one cannot discount the importance of sequential innovations in various fields, setting the “non-obvious” standard can prove to be tricky for many jurisdictions. A low standard might bolster innovation and R&D, while a high standard might threaten the availability of more explorative technologies. Striking a balance would be the ideal approach. However, when competition and antitrust concerns arise with respect to a follow-on invention, the ingenuity of the original patent and its capability of constituting a potential SEP should be factored in, and protected.

As a patent filing hotspot, it is time for India to strengthen its antiquated patent laws, and the abovementioned pointers drawn as references from the more developed IP markets might prove beneficial in strengthening the entire Indian patent regime. The time is ripe for competition regulators to take note of the nuanced operations and approached undertaken by hybrid PAEs and privateers, as the traditional conception of monopoly and dominance abuse cannot be translated to patent laws. A coordinated approach by both the bodies of law, could usher in a robust system of patent regulation and free market competition in the dynamic Indian market.

⁵⁶ LEGISLATIVE COUNCIL PANEL ON COMMERCE AND INDUSTRY, REVIEW OF THE PATENT SYSTEM IN HONG KONG, (Feb. 19, 2013), at 193.