



**TURUN
YLIOPISTO**
UNIVERSITY
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PATENT LITIGATION IN EUROPE:

Can start-ups and growth companies
defend their rights?

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Dedicated to my loved ones: Ida, Emilia, Akseli and Wilhelmiina

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KRISTA RANTASAARI: PATENT LITIGATION IN EUROPE: Can start-ups and growth companies defend their rights?

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ABSTRACT

The patent regime should provide adequate measures when start-ups and growth companies are accused of or receive threats for infringing patent holder's rights. Fighting against infringements is a financial burden that eventually hinders a company's growth. This is more damaging to smaller companies. Patents can also be asserted inappropriately; such assertions infringe on the functions of patents, and deliberately go beyond the claims and boundaries of what is protected.

The research established three preliminary aspects for discussion. First, start-ups and growth companies have a central role in innovations activities. Second, the European patent enforcement scene has to address both the cross-border exploitation of patents and the unitary patent system regime that is coming into force. Third, start-ups and growth companies must be able to retaliate against infringements with adequate measures.

Patents are seen as an important economic tool with potentially significant commercial value. As a corollary, their use has broadened and diversified. Thus, patent related transactions have increased and new structures and ways of monetizing patents have emerged as patent funds. Patent funds bring opportunities as they are able to monetize patents and to finance companies; however, they also cause difficulties and litigation is used as a threat to obtain financial compensation. In addition, patent laws and their applications are challenged by the growing interdependence of various entities in different countries.

The question addressed throughout the whole research is: How can efficiency and legal certainty be increased through patent enforcement regulations so that the European patent enforcement regime supports start-ups and growth companies? Legal certainty and efficiency have been determined as the normative goals for this research and the perspective applied is that of the New Institutional Economics (NIE) and comparative law. NIE studies how institutions interact with organisations where both are interactive by nature. The legal institutions recognised are the relevant rules and case law and the organizations are entities such as companies and patent funds. The institutional environment establishes the general framework in which the institutional arrangements occur.

This dissertation examines procedural safeguards such as fee shifting,

preliminary injunctions and bifurcation. It also investigates the multiple defendants' rule. Furthermore, the abuse of rights principle, the abuse of dominant position, the IP Enforcement Directive and unjustified threats are examined. In this research, the relevant legal institutions are the European Union law and the legislation of selected European countries. The focus is mainly on Germany, the United Kingdom and the Netherlands as these countries deal with the majority of European patent cases.

The measures studied in this dissertation provide tools for start-ups and growth companies when defending their rights. As regards certain of these tools, coherence in the judicial interpretation has been achieved. However, the adequacy of these tools from a legal certainty and efficiency point of view can be criticised. In addition, the complexity of these measures and the uncertainty of the unitary patent regime will reduce their potential to act as safeguards. Thus, it must be acknowledged that the goal of legal certainty, as stated in the patent regime's aim to promote innovation activities for start-ups and growth companies, has not been fully achieved.

TURUN YLIOPISTO

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TIIVISTELMÄ

Patenttijärjestelmän tulisi mahdollistaa oikeasuhtaisten oikeussuojakeinojen käyttö yrityksille niiden koosta riippumatta. Pienimpien start-up- ja kasvuyritysten kohdalla patentinloukkauksenteiden aiheuttamat merkittävät kustannukset voivat muodostua kasvun esteeksi. Väitteet patentin loukkauksesta voivat olla myös tarkoituksellisesti tehtyjä ja jopa ylimitoitettuja. Esimerkiksi patentinhaltija voi tarkoituksellisesti väittää, että patentin suojapiiri on laajempi kuin patenttihakemuksessa oli alkujaan tarkoitettu ja että start-up- tai kasvuyritys loukkaa tämän oikeutta.

Tutkimuksen lähtöasetelmasta nousee esille kolme keskeistä näkökulmaa: start-up- ja kasvuyrityksillä on keskeinen rooli innovaatiotoiminnassa; eurooppalaisen patenttijärjestelmän on kyettävä vastaamaan patenttien ylikansalliseen täytöntöönpanoon ja yhtenäispatenttijärjestelmää koskeviin haasteisiin; sekä start-up- ja kasvuyrityksillä on oltava käytössään riittävät keinot puolustautua patentinloukkauksia vastaan.

Patentit ovat yrityksille taloudellinen väline. Niiden käyttö- ja hyödyntämistavat ovat laajentuneet ja monipuolistuneet. Myös patenteja koskevat teknologiansiirrot ovat lisääntyneet. Uusista tavoista ja keinoista hyödyntää patenteja taloudellisesti voidaan mainita patenttirahastot. Joidenkin patenttirahastojen pääasiallinen liiketoimintamalli on ostaa patenteja ja hankkia niiden avulla tuottoa vaatimalla lisenssimaksuja liiketoimintaa tuottavilta yrityksiltä, mahdollisesti jopa loukkauksenteita nostamalla.

Väitöskirjassa etsitään vastausta kysymykseen: miten tehokkuutta ja oikeusvarmuutta voidaan patenttilainsäädännön turvin kasvattaa siten, että samalla tuetaan pienempiä yrityksiä. Tutkimuksessa asetetut normatiiviset tavoitteet rakentuvat oikeusvarmuuden ja tehokkuuden ympärille. Tutkimuksessa hyödynnetään oikeustaloustieteen metodeja ja oikeusvertailua. Uusi institutionaalinen oikeustaloustiede tutkii instituutioiden ja organisaatioiden välistä vuorovaikutusta. Instituutiot asettavat toimintaympäristölle puitteet. Instituutioita ovat tässä tutkimuksessa säännöt ja oikeustapaukset, kun taas organisaatioita ovat puolestaan yritykset ja patenttirahastot.

Oikeussuojakeinoista lähemmässä tarkastelussa ovat kustannusten jakautuminen, väliaikainen kielto oikeudenloukkauksen estämiseksi ja bifurkaatio (loukkaus- ja mitättömyyskanteiden jakaminen eri tuomioistuimeen). Tutkimuksessa

tarkastellaan myös kanteiden yhdistämistä usean vastaajan tapauksessa. Edellä mainittujen keinojen lisäksi tutkimuksessa selvitetään oikeuden väärinkäytön kieltoa, määräävän markkina-aseman väärinkäytön kieltoa, IPR-täytäntöönpanodirektiiviä ja perusteettomia uhkauksia. Vertailussa keskitytään EU-lainsäädännön lisäksi patenttimarkkinoiden kannalta keskeisimpien eurooppalaisten maiden kansalliseen lainsäädäntöön.

Tutkimuksessa on selvinnyt, että tarkastellut oikeussuojakeinot tarjoavat start-up- ja kasvuyrityksille keinoja puolustaa oikeuksiaan. Vaikka joidenkin oikeussuojakeinojen kohdalla oikeudellisen tulkinnan yhtenäisyys on saavutettu, keinojen riittävyttä voidaan kuitenkin kritisoida erityisesti oikeusvarmuuden ja tehokkuuden näkökulmasta. Esimerkiksi keinojen monimutkaisuus ja yhtenäispatenttijärjestelmään liittyvät epävarmuudet tekevät oikeussuojakeinojen hyödyntämisestä haastavia pienimmille yrityksille. Voidaankin väittää, että oikeusvarmuuden tavoite, joka tutkimuksessa esitetyn mukaisesti heijastaa patenttijärjestelmän yleistavoitetta edistää innovaatioita, ei start-up- ja kasvuyritysten osalta täysin toteudu.

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After my graduation, I worked for almost ten years in the venture capital and private equity industry. The jump to Academia was a giant leap; but now I can truly say that it was a leap worth taking. It has been an incredible journey. As professor Richard Feynman famously said: good days give happiness, bad days give experience, worst days give lessons and best days give memories. I certainly had them all on this journey. It was driven by my enthusiasm to understand better how the ecosystems of start-ups and growth companies essentially work, what kind of role intellectual property rights, namely patents, have and whether smaller companies can defend themselves when accused of infringing patents. It transpired that the journey was not only about doing research. I have met incredible people over the years and truly made new friends. Now it is time to thank them.

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20.9.2021

Krista Rantasaari



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Krista has been a Doctoral Candidate of Commercial Law at the University of Turku, Faculty of Law. Prior to her academic career, she has functioned as a lawyer and public affairs expert in the venture capital and private equity industry. Her areas of interest are intellectual property law, company law and competition law.

List of original publications

1. Rantasaari, Krista: Growth companies and procedural safeguards in European patent litigation, *Maastricht Journal of European and Comparative Law* 2018, Vol. 25(2), pp. 168—187. DOI: <http://dx.doi.org/10.1177/1023263X18773966> 119
2. Rantasaari, Krista: European multiple patent defendant rule as a legal constraint for growth companies, *Oxford Journal of Intellectual Property Law and Practice* 2019, Vol. 14(12), pp. 949–957. DOI: <http://dx.doi.org/10.1093/jiplp/jpz149>..... 143
3. Rantasaari, Krista (2020): Abuse of patent enforcement In Europe. How can start-ups and growth companies fight back?, *Journal of Intellectual Property Law, Information Technology and E-Commerce Law (JIPITEC)* 2020, Vol. 11(3), pp. 358–377. eISSN: 2190-3387155

Table of Contents

Abstract	4
Tiivistelmä	6
Acknowledgements	8
List of original publications	11
INTRODUCTION	16
1.1 Setting the Scene	16
1.1.1 Start-ups and Growth Companies as Innovators	17
1.1.2 European Patent Enforcement: Cross-border Exploitation and Unitary Patent System	19
1.1.3 Searching for Shields for Start-ups and Growth Companies	21
1.2 Research Objectives and Research Questions	22
1.3 Methodology and Sources	25
1.3.1 Doctrinal Legal Research and New Institutional Economics	25
1.3.2 Comparative Law	27
1.4 Earlier Research	28
2 NEW INSTITUTIONAL ECONOMICS AS AN APPROACH TO PATENT ENFORCEMENT	30
2.1 New Institutional Economics	30
2.2 Normative goals	35
2.3 Efficiency	36
2.4 Legal Certainty	38
3 INNOVATION AND PATENTS ENABLING GROWTH	41
3.1 Innovation and Growth Companies	41
3.2 Justification for Intellectual Property Rights	44
3.3 Patents Providing Values as an Intangible Asset	47
3.4 Monetisation of Patents Enables the Evolving of the Patent Transaction Market	49
3.5 New Players in the Field	54

4 EUROPEAN PATENT REGIME	61
4.1 European Patent Enforcement Complexity	61
4.2 Unitary Patent System.....	67
4.3 NPEs Enforcing Patents in Europe	70
4 SUMMARY AND CONTRIBUTION OF ANNEXED ARTICLES	73
4.1 Growth companies and procedural safeguards in European patent litigation	73
4.1.1 Objective and Content.....	73
4.1.2. Main Contributions	79
4.1.3 Recent Developments.....	80
4.2 The European multiple patent defendants rule as a legal constraint for start-ups and growth companies	80
4.2.1 Objective and Content.....	80
4.2.2 Main Contributions	85
4.2.3 Recent Developments.....	86
4.3 Abuse of Patent Enforcement: How Can Start-ups and Growth Companies Fight Back?	86
4.3.1 Objective and Content.....	86
4.3.2 Main Contributions	91
4.3.3 Recent Developments.....	93
5 CONCLUSIONS, POLICY RECOMMENDATIONS AND FUTURE RESEARCH	94
5.1 Conclusions.....	94
5.2 Implications and Policy Recommendations.....	97
References	100
Abbreviations	117
Table and Figures	
Table 1 The research questions and their main contributions	23
Figure 1 The illustration of NIE	33
Figure 2 The innovation cycle	43
Figure 3 The ways to monetise patent	51
Figure 4 The different business models of patent funds	57

1. INTRODUCTION

1.1 Setting the Scene

Patents enable the growth of start-ups and growth companies. This also means that the patent regime should provide adequate measures when start-ups and growth companies are accused of infringing patent holder's rights or when being threatened of doing so. For start-ups and growth companies fighting against infringements can be a financial burden that eventually hinders their growth.¹ This is even more crucial when considering situations where patents are asserted inappropriately. This means asserting against the functions of patents, and deliberately beyond the claims and boundaries of what is protected. Hence, the question that arises is whether start-ups and growth companies can fight back against patent infringements.

Patents are not just a legal asset, they are an important economic tool.² Patents have potentially significant commercial value which is increasingly valuable to larger and smaller companies.³ This does not indicate that all patents are valuable as companies are increasingly applying patents of a little value.⁴ However, the potential commercial value enables the use of patents to broaden and diversify. As a corollary, the new structures of monetising patents have emerged.⁵ These new ways of monetising patents lead to increasing litigation and to abusive practises.⁶ In addition, patent laws and their applications are challenged by the growing interdependence among different entities in different countries.

For the purpose of describing the background for this dissertation, the discussion starts with three aspects that are relevant to the whole research. First, start-ups and growth companies have a central role in innovation activities. Second, the European patent enforcement scene has to address the cross-border exploitation of patents and

1 Meurer 2003, p. 519 and 521; Chien 2012, p. 4.

2 Guellec 2007, p. 53.

3 Guellec and van Pottlesberghe de la Potterie 2007, p. 1; Elkin-Koren and Salzberger 2013, p. 27; Porter and Rakec 2016, p. 1.

4 Mazzucato 2011, p. 54 and 94.

5 Bader et al. 2011, p. 96.

6 Meurer 2003, p. 520.

the unitary patent system coming into the force. Third, start-ups and growth companies must be able to fight back against infringements with adequate measures. These three aspects provide the setting for this research and introduce the topic, which is inherently about start-ups and growth companies facing the complexity of the European patent enforcement and searching tools to fight against infringement suits.

1.1.1 Start-ups and Growth Companies as Innovators

The central role of start-ups and growth companies has been proclaimed by political institutions and international organizations. On average, in the Organization for Economic Co-Operation and Growth (OECD) countries, start-ups and growth companies create almost half of the new jobs.⁷ The European Union (EU) for example has developed an agenda to boost small and medium size enterprises (SMEs) companies.⁸

However, SMEs, on average, are less innovative than large companies. Most innovation activities are not provided by SMEs, but instead by young high-growth firms.⁹ High-growth companies are defined as having an average annualized growth rate greater than 20% per annum over three consecutive years.¹⁰ High growth companies seem to be more innovative than SMEs in general, and tend to rely more on international intellectual property (IP) protection. Compared with SMEs, the success of high-growth companies is often explained by their ability to grow internationally. The growth can occur within or even beyond the EU internal market.¹¹ High-growth companies rely more on international and cross-border patent protection. SMEs that have filed at least one European patent are 34 % more likely to become a high growth company, whereas the prior filing of national patents is not significantly correlated with a higher likelihood of high growth.¹²

Start-ups and growth companies considered to be high-growth companies perform an important role in developing new technologies. They have the flexibility to

7 OECD 2016. See also Calvino, Criscuolo and Menon 2016.

8 European Commission 2020.

9 Mazzucato 2011, p. 38.

10 A high-growth firm can be determined on the basis of its growth in turnover or number of employees, or both. For example, the European Patent Office (EPO) and European Intellectual Property Office (EUIPO) study uses the criterion of turnover growth. In addition, the OECD definition sets a threshold of at least 10 employees at the beginning of the growth period. EPO and EUIPO 2019, p. 23; OECD 2018, p. 3 and 6.

11 EPO and EUIPO 2019, p. 14.

12 EPO and EUIPO 2019, p. 59.

adapt new technology and to transform technological change into entrepreneurial activity. As a consequence, start-ups and growth companies are often established around new evolving technological solutions and innovative mindsets.¹³ In areas such as cloud-computing, IoT (Internet of Things), AI (artificial intelligence) and medical science technology is developing at a tremendous rate and providing opportunities for smaller and agile companies. Recently start-ups and growth companies have had a central role in developing AI based medical imaging software tools for COVID-19.¹⁴

Innovation activities are demanding for smaller companies. Eric Ries calls a start-up a human institution designed to create a new product or service under conditions of extreme uncertainty.¹⁵ Uncertainty describes innovation activities as on balance most attempts to innovate fail. For companies it is hard or even impossible to determine what kind of patents will eventually be needed for a commercial product. Patenting is also time-consuming as many years can elapse between an idea and its realization as a product or a service and finally to commercialisation. The types, sources and scale of risks vary across technologies, sectors and innovations.¹⁶

The potential market value of intellectual property rights (IPRs) in high-growth technology companies provides opportunities for monetisation.¹⁷ As a result, the patent infringement suit has become a business model for certain entities. Patent trolls also known as non-practising entities (NPE) are making the headlines in newspapers; for example, when the German Minister of Justice demanded control over patent trolling and the major tech companies demanded that the European Union (EU) to stop patent trolls.¹⁸ A patent troll is used as a metaphor for a company that produces no innovations and simply buys and develops patents with the intent of threatening or suing other companies whose products may infringe something in the patent troll's portfolio.¹⁹ A patent troll is a reference to the trolls found in children's fairy tales about a frightening creature who sits under a bridge and jumps out to confront passing people and demanding payment before they

13 Guellec and van Pottlesberghe de la Potterie 2007, p. 10; Eckhardt and Shane 2011, p. 415; Chien 2013, p. 10.

14 For AI based medical imaging software tools see for example Shogun Technology Co. Ltd and YITU in China, Lunit in Korea, Qure.ai in India, DarwinAI in Canada. See Hong and Yap 2020.

15 Ries 2011, p. 37.

16 Arora & Fosfuri & Gambardella 2001, p. 265; Mazzucato 2018, p. 368.

17 Porter and Rakiec 2016, pp. 2–3.

18 Anger 2019; Espinoza 2020.

19 The term was patent troll was coined already in 1991. See Chien 2009, p. 1577; Haller and Wiggins 2006, p. 113. For NPEs, see, inter alia, Ohly 2008; Ewing and Feldman 2012; Helmers and McDonagh 2012; Fusco 2014; Chien 2012; Geradin 2019.

are allowed to cross the bridge.²⁰ However, patent trolls are not necessarily evil. A patent troll can be also considered as a patent market intermediary that creates a market for patent exchange.²¹ Thus, smaller companies can for example monetise their non-core patents. This income might be essential when further developing and commercialising their core technologies.

1.1.2 European Patent Enforcement: Cross-border Exploitation and Unitary Patent System

The patent institution functions on a territorial basis. As a result, national patent regimes that reflect territoriality dominate patent enforcement. Cross-border patent enforcement is an outcome of territory, sovereignty, and property rights.²² The cross-border exploitation of patents has accelerated because of technological development and due to the high degree of connectivity in numerous fields of technology.²³ Client-server systems, peer-to-peer systems, cloud computing and AI are examples of technologies that might be synchronised in a number of countries. As an outcome of this, there are more situations where the alleged infringement or the location of the parties is geographically distributed in more than one jurisdiction.²⁴ Cross-border enforcement has increased complexity. The complexity of patent enforcement has increased transaction costs and made the enforceability of patents uncertain and difficult. However, complexity is an inherent feature of all business regulation.²⁵

Territoriality means that patent protection relies on national or regional legislation.²⁶ In Europe, once the European Patent Office (EPO) has granted and validated a European patent, each patent is subject to the laws and procedures of the state in which it is applicable.²⁷ Patent laws and their application are partly unfit due to the growing interdependence among different actors in different countries within the patent field. In Europe, this has led to initiatives to create a common patent enforcement. Initiatives for a common European patent regime were already started in the 1950s.²⁸ However, it has been a lengthy process. An agreement on a Unified Patent Court (the UPC Agreement) was accomplished after decades of negotiations in 2013.

20 Feldman 2012, p. 38.

21 Yanagisawa and Guellec 2009, p. 8; Bader et al. 2011, p. 101.

22 Drahos 1999.

23 Rantasaari 2019, p. 951.

24 Galli and Gevovich 2012, pp. 679–680.

25 Braithwaite and Drahos 2000, p. 18.

26 Min and Wichard 2017, p. 688.

27 Trimble 2012, pp. 716–717; Romandini and Klicznik 2013, p. 530.

28 Pila 2015, p. 10.

This agreement provides wide patent protection covering most European Union Member Countries and a common patent enforcement system.²⁹

However, the future of the unitary patent regime remains uncertain. Currently, there are two main reasons for this. First, the United Kingdom's (UK) departure from the EU has also led to its withdrawal from the unitary patent regime. The UK ratified the UPC Agreement but later announced a withdrawal from the Unified Patent Court (UPC) system. According to the written statement in the House of Commons by Minister for Science, Research and Innovation Amanda Solloway it would be inconsistent with the aim of becoming a self-governing nation if the UK participates in a court that applies EU law and is bound by the Court of Justice of European Union (CJEU).³⁰ Second, Germany has constitutional difficulties with the ratification process and the German Federal Constitutional Court (FCC) has asked the Bundespräsident Frank-Walter Steinmeier, to refrain from signing the bill into law.³¹

When discussing the European patent enforcement, the UPC plays an important role. The unitary patent regime would create a larger market for patent enforcement covering all the EU Member States that have ratified the UPC Agreement. As regards the SMEs, they are mentioned as the beneficiaries of the unitary patent system. Among the main justifications for creating the unitary patent system was an aim to reduce transaction costs for SMEs.³² Further reasons mentioned were the existence of parallel enforcement decisions, and the existence of judicial incoherence. The new unitary patent regime can be praised as well as criticised. On the one hand, the wider patent protection covering most of the EU Member States and the common

29 The unitary patent system consist of the Regulation (EU) No. 1257/2012 of the EP and of the Council of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection, [2012] OJ L361/1 (Regulation No. 1257/2012/EU); Regulation (EU) No. 1260/2012 of 17 December 2012 implementing enhanced cooperation in the area of creation unitary patent protection with regard to the applicable translation arrangements, [2012] OJ L361/89 and the Agreement on a Unified Patent Court, [2013] OJ C175/1 (the UPC Agreement).

30 See the official UPC website: < <https://www.unified-patent-court.org/news/uk-withdrawal-upca> >, last accessed 31 January 2021.

For the analysis of the post-Brexit situation in the UK, see for example Jaeger 2016, McDonagh and Mimler 2017, pp. 159–179, Mylly 2017, pp. 1423–1424, Lamping and Ullrich 2018.

31 A complaint (2 BvR 739/17) was decided by the Second Senate of the Federal Court in 13 February 2020. See < <https://www.bundesverfassungsgericht.de/SharedDocs/Pressemitteilungen/EN/2020/bvg20-020.html> >, last accessed 31 January 2021. In addition, two new complaints were filed (2 BvR 2216/20 and 2 BvR 2217/20) see < <http://patentblog.kluweriplaw.com/2021/01/13/german-ratification-of-unified-patent-court-agreement-put-on-hold/> >, last accessed 31 January 2021.

32 Harhoff 2009, p. 51; Sterjna 2016.

post-grant phase may foster innovation and aid companies in their patenting activities. On the other hand, additional litigation and the threat of litigation may impose costs and complexity that inherently attract NPE litigation.³³ This has also been one of key concerns in the research literature as regards the unitary patent system.³⁴

1.1.3 Searching for Shields for Start-ups and Growth Companies

Overall, this dissertation evaluates European patent enforcement and addresses the potential procedural safeguards available for start-up and growth companies when accused of infringing patent owner's rights or when being threatened of doing so. The cross-border use of patented inventions, new patent market participants such as the NPEs, and cross-border patent enforcement increase the complexity for start-ups and growth companies when protecting their patented rights.

Start-ups and growth companies have to face these new patent market entities that are involved in patent monetisation and in litigation.³⁵ Patent litigation practices and a threat of such a behaviour can be adopted by any patent holders.³⁶ However, non-practicing entities (NPEs), also called Patent Assertion Entities (PAE) or patent trolls, are used here as an example as their core business is patent enforcement. The NPEs referred to here are corporate entities that buy and develop patents with the intent of threatening or suing other companies in order to obtain financial compensation.³⁷ Start-up and growth companies are also targets of NPE litigation.³⁸ Additionally, smaller companies may settle cases more easily due to the financial constraints regardless of the merits of the case. Patent litigation in general is prohibitive; this makes start-ups and growth companies more vulnerable targets of litigation as they have less capital. In consequence, start-ups and growth companies pay nuisance settlements regardless of the merits.³⁹ NPEs are active in Europe, for example, in Germany, in the Netherlands and in the UK.⁴⁰

33 Rantasaari 2018, p. 176.

34 McDonagh 2016, p. 14; Thumm et al. 2016, p. 9; Love, Helmers, Gaessler & Ernicke 2015, pp. 18–19.

35 Chien 2012, p. 1.

36 Chien 2009, p. 1571; Chien 2012, p. 1; Strowel and Léonard 2020, p. 3.

37 Ohly 2008; Ewing and Feldman 2012; Helmers and McDonagh, 2012; Chien 2012; Fusco 2014; Geradin 2019; Cohen et al., 2019; Strowel and Léonard 2020.

38 Tucker 2014, p. 219; Babin and Jarrell 2018, pp. 2–3. For start-ups litigation in Europe, see, *inter alia*, Darts-IP 2018, p. 10.

39 Chien 2012, pp. 23–24; Darts-IP 2018, p. 10.

40 Love 2015; Love, Helmers, Gaessler & Ernicke 2015, p. 2; Darts-IP 2018. See also, for example, Ewing and Feldman 2012; Helmers and McDonagh 2012; Fusco 2014; Geradin 2019, p. 3.

As a result, the patent enforcement regime has to provide procedural safeguards available for start-up and growth companies when accused of infringing a patent owner's rights or when being threatened of doing so. Here safeguards are understood as a means of helping start-ups and growth companies to defend themselves or to prevent the abusive litigation.

1.2 Research Objectives and Research Questions

The primary objective of this dissertation is to evaluate the relevant European legislation in concrete contexts related to patent enforcement. The following research question will be addressed throughout the whole research: *How can efficiency and legal certainty be increased through patent enforcement regulations so that the European patent enforcement regime supports start-ups and growth companies?* The goal is to understand the European conditions under which patents can be efficiently enforced by start-ups and growth companies, and legal certainty increased.

The term start-up and growth companies is used as this research focuses on companies that are relatively small and highly intensive in their innovation activities.⁴¹ Alternatively, the term high growth companies could be used. A high-growth company can be determined based on the growth in its turnover or number of employees, or both.⁴² In this research I prefer the term start-ups and growth companies, because today starts-ups are possibly engaged with international operations from their foundation and the need for patent protection is not tied to a certain turnover or employment rate. This particularly applies to certain technology fields such as cloud computing and artificial intelligence, where innovative activities can flourish from the foundation of the company. Hence, the definition of the high growth companies is too limiting for the purposes of this research.

While the main research question is far-reaching, it is divided into more focused questions in the articles. Even though the articles do not explicate the research questions as widely as the main research question, the overall argumentation displays different aspects of the main research question. Hence, each article fulfils a different

41 Besides start-up and growth companies the term SME (Small and Medium Size Company) will also be used. SMEs are defined in the [Recommendation \(EU\) No 2003/361/EC](#) of the Commission, [2003] OJ L 124.

42 For example, the EPO and the EUIPO study uses the criterion of turnover growth. A firm is considered to be a high growth if it has an average annualized growth rate greater than 20% per annum over three consecutive years. In addition, the OECD definition sets a threshold of at least 10 employees at the beginning of the growth period. EPO and EUIPO 2019, p. 23

aspect of the main research question. The research questions of each article, as well as their main contributions, are summarised in Table 1.

Table 1.

Article	Research Question	Contribution
Growth companies and procedural safeguards in European patent litigation	Do the substantive patent norms of the unitary patent system provide safeguards for start-ups and growth companies when acting as defendants?	Fee shifting, preliminary injunctions and bifurcation can act as safeguards for start-ups and growth companies when acting as defendants. These safeguards reduce uncertainty.
The European multiple patents defendants rule as a legal constraint for start-ups and growth companies	How does the multiple defendants rule work under the unitary patent regime for start-up and growth companies?	The multiple defendant rule under the unitary patent regime clarifies the existing complexity and increases legal certainty and lowers transaction costs.
Abuse of patent enforcement in Europe: How can start-ups and growth companies fight back?	Does the abuse of rights, the abuse of a dominant position, the Enforcement Directive (IPRED) ⁴³ and unjustified threats provide tools for start-ups and growth companies when acting as defendants in patent infringement cases that could be considered abusive?	The abuse of rights principle, the abuse of dominant position, the Enforcement Directive (IPRED) and unjustified threats provide a safeguard against abusive claims and promotes legal certainty. Unjustified threats as an affirmative claim lowers most directly transaction costs.

Together, the research questions positioned in the articles share several commonalities. First, they all expand on a patent enforcement regulation that provides support for start-ups and growth companies and provide a regulation link up to the New Institutional Economics (NIE) terminology and institutions. The institutions contain the written and unwritten rules and norms such as case-law and legislation.⁴⁴ In this research the relevant regulation (institution) is the European Union law and the legislation of selected European countries. Second, the patent enforcement regulation should promote legal certainty and lower transactions costs. Legal certainty and efficiency are set as normative goals for this research. When transaction costs

43 Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights, OJ 2004 L 157 (the IP Enforcement Directive or the IPRED).

44 Ménard and Shirley 2008, p. 1.

are lower then efficiency increases. These normative goals will be explained in more detail later in Section 2.2.

These selected European countries refer to the key jurisdictions of the European patent litigation. These countries are Germany, the United Kingdom (UK) and the Netherlands as they handle the majority of European cases. This applies particularly to articles Rantasaari 2018 and Rantasaari 2019.⁴⁵ The European patent litigation is largely undertaken on a national basis although it is framed by the European Patent Convention (EPC) and European patents.⁴⁶ All the analysed countries are both common law and civil law countries. This research applies functional comparisons that serve intellectual property law well. Thus, the comparison of legal systems displaying different doctrinal structures is possible as long as they fulfil the same function.⁴⁷ This functional comparison will be explained in Section 1.3.2.

This research studies the European patent enforcement and discusses the role of the patent institution. The *patent institution* term follows on from economist's use of institution and refers to a discrete set of rules that shape the responses and behaviour of interaction between human beings in a particular context. In this research, the human being is particularly engaged in activities formed as a company or a patent fund. I consider the phrase institution to be highly illustrative as it emphasises the interaction between rules and entities formed by human beings. The use of the phrase patent institution also provides a link between institution and economic progress. The phrase *patent system* refers to patent law as administrated by various actors such as patent offices, courts and patent professionals.⁴⁸ Thus, the patent system has a narrower meaning than the patent institution and the focus is on the law not on the interaction between rules and entities.

In this dissertation only one examined rule was specific to smaller companies. When fee shifting was explored, there was a rule that the Unified Patent Court (UPC) can lower the scale of the ceiling for recoverable costs if the unsuccessful party is an SME. However, start-ups and growth companies have fewer financial resources and

45 TaylorWessing (2018) Global Intellectual Property Index Report (GIPI). In the UK, there are three separate legal systems: England and Wales, Scotland and Northern Island. In respect to patent litigation the enforcement system of England and Wales is the most important, and for that reason the one discussed here. See McDonagh 2016, pp. 18–19. See also Rantasaari 2018, p. 171 and Rantasaari 2019, p. 950.

46 Convention on the Grant of European Patents (the European Patent Convention) of 5 October 1973, as revised by the Act revising Article 63 EPC of 17 December 1991 and the Act revising the EPC of 29 November 2000 (the EPC).

47 Michaels 2012, p. 2 and 8 and Calboli 2013, p. 12.

48 Drahos 2010, pp. 6–7.

therefore, rules that eventually lower transaction costs and increase legal certainty are significant. One of the reasons for SMEs not to litigate is the lack of predictability as regards the outcome.⁴⁹ Furthermore, SMEs are often constrained.⁵⁰ For SMEs, constraints mean limitations to the operation of the company. Economic literature classifies constraints to broadly mean internal, financial and legal constraints.⁵¹ SMEs, for example, lack physical assets or expertise to fully exploit the potential of their innovations and patents. Fast growth through commercialisation and internationalisation requires IP expertise and lots of capital. This demand is likely to lengthen an SME's resources to the limits of its capacities. In addition, it often occurs at short notice.⁵² Constraints, therefore, can limit companies' growth. The ability to defend their rights, for example, can diminish, when institutions are not functioning effectively and achieving the intended goals.⁵³

1.3 Methodology and Sources

This section discusses the methodological choices and sources of this research. In this sub-chapter, methodology is discussed briefly to give an overview of the topic. The discussion then continues in Chapter 2 which extends the understanding of the methodological premises of this research.

1.3.1 Doctrinal Legal Research and New Institutional Economics

This research combines a few theoretical perspectives when studying this complex topic. The starting point for the analysis is doctrinal legal research, also called legal positivism. It basically comprises a two-part process of locating the sources of law and then interpreting and analysing the relevant texts.⁵⁴ However, the European patent litigation regime, and the numerous operators make it essential to apply a more diversified approach. In general, legal scholars are often interested in economic analyses of intellectual property law. Innovation, technological change, development and growth are concepts that appeal to law and economics.⁵⁵ New Institutional Economics (NIE) that has also evolved from Economics and Law helps to define the

49 OECD 2011, p. 12 and 33.

50 The constraints term is adopted from the Douglas C. North. See North 1990, p. 45.

51 See, for example, Beck, Demirgüç-Kunt and Maksimovic 2005.

52 EPO and EUIPO 2019, pp. 17–18.

53 One of the major roles of institutions is to reduce uncertainty in institutions North 1990, p. 6.

54 Hutchinson and Duncan, 2012, pp. 83–119.

55 Menell and Scotchmer 2005, p. 1. See for example Merges 2000; Landes and Posner, 2003; Gallini and Scotchmer 2002; Jaffe and Lerner 2004.

complex environment and clarifies concepts such as institutions and organisations.

This research applies a normative aspect that is characteristic of law and economics. By explaining and evaluating legal rules, judicial decisions and their consequences, the law and economics try to explain and predict the behaviour of entities regulated by law. Furthermore, law and economics tries to improve the law by illustrating those parts of the existing laws or proposed laws that have unintended or undesirable consequences based on economic efficiency, or other values such as legal certainty.⁵⁶ In addition, law and economics applies economic methodology to the research of law such as transaction cost analysis and efficiency.⁵⁷ However, doctrinal legal methodology is comprehended as a prequel to the understanding what the law ought to be.

The doctrinal legal methodology is considered here as a foundational stage for the use of law and economics. The New Institutional Economics highlights the normative approach and makes the complex patent enforcement environment more understandable by using clarifying concepts such as institutions and organisational arrangements. New institutional economics clarifies the understanding about the innovation environment and thus, describes complexity and change. As a corollary, innovation is a dynamic force behind the economy. In addition, North emphasises the role of human cognition. Culture, institutions and technology matter for economic evolution as they have an influence on transaction costs as a measure of social efficiency. Thus, as organisations evolve, they alter institutions.⁵⁸

The purely normative approach by law and economics provides a powerful tool for policy analysis, which potentially disturbs the idea of a politically neutral branch of legal scholarship. Thus, the idea of neutrality is not necessarily preserved.⁵⁹ Hence, the approach in this research is rather a combination of normative and positive analysis. The analysis shifts from the positive to the normative ground. The goal is to explain and evaluate the current patent enforcement system. In addition, the goal is to point out peculiarities and problems in relevant institutions.

56 Posner 2014, p. 31; Elkin-Koren and Salzberger 2013, p. 33; Devlin 2015, p. 2.

57 Salzberger 2007, p. 207.

58 North 1990, p. 7; Witt 2008, p. 561.

59 Mattei 1997, p. 229 and 256.

1.3.2 Comparative Law

The emphasis of this research is on European patent enforcement. Smaller companies are more often international from their initial establishment and therefore do not obey the regulations of national borders. For this reason, cross-border patent protection is important. Furthermore, the EU has undergone a considerable process of regional integration resulting in the creation of a supranational judicial system. Hence, the focus is on European Union law and the legislation of selected European countries.

Comparative law is broadly defined as the comparison of different legal systems. Comparative law broadens our understanding of how legal rules work in factual connection.⁶⁰ Comparative law studies similarities and differences between legal systems. This approach can be utilised at different levels such as at the national level and the regional level. It can be used to compare legal rules from one jurisdiction to another jurisdiction. In addition, it can for example aid legislators to illustrate how foreign laws provide models of how well different sets of legal rules work when addressing problems or a particular policy.⁶¹ In the EU Member States, comparison frequently entails the analysis and juxtaposition of the legal system of one or more of the members of the region within EU's legal system.⁶²

In addition to European Union law, mainly case law from Germany, the UK and the Netherlands will be utilised, mainly in articles Rantasaari 2018 and Rantasaari 2019.⁶³ The analysed countries are both common law and civil law countries. However, the comparison of legal systems displaying different doctrinal structures is possible as long as they fulfil the same function. For example, a common law institution can be compared with the institution of German law, insofar as both fulfil the same function. An example from contract law illustrates this well. Essential elements of seriousness regarding a contractual promise can be compared. Functional comparison starts from the premise that the function of law lies in responding to society's problems. It then proceeds, to the understanding that all societies fundamentally face the same problems.⁶⁴ Functional comparisons can be used to evaluate intellectual property law. Thus, intellectual property scholars of different countries frequently compare national provisions with respect to a specific topic. Increasingly large number of publications demonstrates that intellectual property scholars often compare the legal treatment of a certain intellectual property topic in one or more legal

60 Zweigert and Kötz 1988, p. 7; Siems 2018, p. 4.

61 Siems 2014, p. 4.

62 Calboli 2013, p. 7.

63 Rantasaari 2018, p. 171 and Rantasaari 2019, p. 950.

64 Michaels 2012, pp. 2 and 8.

systems with the relevant regional and international legal provisions on the same topic.⁶⁵

According to Ugo Mattei, comparative law used together with law and economics provides a concept of *comparative efficiency*. For Mattei, an institution is never efficient or inefficient in the abstract or absolute meaning. Comparative efficiency means that an institution may be efficient or inefficient compared with concrete alternatives that fit better or worse in a given context. The alternative rules or institutions may be provided by comparative analysis or by scholarly creativity. Consequently, the notion of comparative efficiency, as used in comparative law and economics is, in essence, dynamic and thus, strictly linked with the notion of legal change.⁶⁶ An institutional arrangement in one country can be considered more or less efficient than an institutional arrangement in other country. By the same token, the present European patent enforcement regimes' efficiency can be compared with the unitary patent regime. Furthermore, this research argues that this idea can also be applied to other values such as legal certainty.

1.4. Earlier Research

The research that focuses on patent enforcement and start-ups and growth companies focuses mainly on the United States (US). The European environment is still relatively novel in this respect. As regards methodology, there are scholars interested in law and economics, and the intellectual property and their background is in either in economics or law or both. However, particularly the New Institutional Economics seems seldom to concentrate on patent enforcement.⁶⁷ Furthermore, the existing research, which connects patents and venture capital, is mostly about valuation.⁶⁸ There is relatively much research in the US and in Europe concentrating on the intersection between competition and intellectual property law, but there is no similar research connecting the ideas of the abuse of rights principle, the abuse of dominant position, the IP Enforcement Directive (IPRED) and unjustified threats to the European start-up and growth companies.⁶⁹ The effects of NPE lawsuits on start-up and

65 Calboli 2013, p. 12.

66 Mattei 1997, pp. 1–2.

67 However, the research done by Merges 2000 is about intellectual property rights and the New Institutional Economics.

68 In this research patent funds are compared to venture capital funds. See Rantasaari 2018, pp. 6–7.

69 Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights, OJ 2004 L 157 (the IP Enforcement Directive or the IPRED). See Rantasaari 2020.

growth companies in particular is still a relatively novel research area.⁷⁰

⁷⁰ An exception to this is a relatively recent study by Chien 2012. Also J. Bessen and M. Meurer claim that SMEs are often defendants of NPE litigation. See, on this point, Bessen and Meurer 2014.

2. NEW INSTITUTIONAL ECONOMICS AS AN APPROACH TO PATENT ENFORCEMENT

This chapter discusses the methodological issues in the following manner. Section 2.1 provides a more in depth understanding about the law and economics as an approach. After introducing the approach on a more general level, the New Institutional Economics is then discussed from the perspective of this research. Section 2.2 focuses on the goals of the optimal legal rules in this research. The normative goals set and discussed are in Section 2.3 efficiency and in Section 2.4 legal certainty.

2.1 New Institutional Economics

New institutional Economics has a background in law and economics. Law and economics is a diverse approach having various schools of thought each reflecting different approach to economics, and each based on a different methodological paradigm.⁷¹ The modern theory of Economics and Law originates from Ronald H. Coase's famous articles: *The Theory of the Firm* (1937) and *The Problem of Social Cost* (1960). Coase starts with a definition of a firm and introduces the concept of transaction costs. Coase found that transactions costs used pricing mechanisms such as those where negotiations have to be taken, contracts have to be drawn up, arrangements have to be made to settle disputes and all these costs were called transaction costs.⁷² According to Coase, companies exist to economise the transaction costs and to address harmful effects. An institutional setting such as political institutions can have effect on the level of transaction costs and deal with the harmful effects.⁷³ Inherently Coase sees that uncertainty is a prerequisite of firm's existence. In this understanding Coase follows Frank K. Knight's argumentation.⁷⁴ Coase's argument that the level of transaction costs depends upon the institutional setting within which economic actors operate can be considered as a starting point for NIE.

71 See for example Mercurio and Medema 2006; Posner 2014; Smith 2019.

72 Coase 1937, pp. 390–391; Coase 2008, p. 34.

73 Coase 1960, pp. 17–18; Ménard and Shirley 2008, p. 4.

74 Knight 1921, pp. 269–270; Coase 1937, p. 392 and pp. 398–400.

An important impetus to understanding the economics and law movement came from Richard Posner in *Economic Analysis of Law*. Posner extends the traditional economic models to cover the market of conflict resolution and the market of innovation. Posner's arguments relate to the NIE. Posner shifted the traditional economic analysis in a direction of a normative analysis pointing to desirable legal rules and institutions that can achieve certain goals such as efficiency.⁷⁵ Posner formed an idea that people are rational and endeavouring to maximise their own utility in all areas of life. This also applies to economic affairs. However, this does not imply they are always rational. Similarly, game theoretic models assume that players will maximize their wealth.⁷⁶ The neoinstitutionalist literature reveals two distinct approaches to the understanding of rationality. First, there is a traditional neoclassical view of perfect individual rationality. Hence, an ideal individual that display the purposeful and rational behaviour is possible. This rational individual has the ability to foresee everything and evaluate and optimally choose among available courses of action.⁷⁷ Second, there is the imperfect individual rationality. From this perspective, the preferences of decision makers are recognised as incomplete and subject to change over time.⁷⁸ Douglas North describes the information as being complex and incomplete. Oliver Williamson developed this idea of rationality further and introduced bounded rationality to the NIE.⁷⁹ Bounded rationality in economic terms means limited rationality. Therefore, all economic exchange cannot be organized by market contracting.⁸⁰ NIE dismisses the standard neoclassical assumptions that individuals have perfect information and act according to unbounded rationality. Furthermore, NIE abandons the view that transactions are costless and instantaneous. As a corollary, NIE assumes that individuals have incomplete information and limited mental capacity and because they face uncertainty about foreseen events and outcomes, they incur transaction costs to acquire information. To reduce risk and transaction cost individuals create formal institutions and informal institutions.⁸¹ From this perspective, the

75 Posner 2014, p. 31 and the following.

76 Posner 2014, p. 4. This idea of wealth maximation is originally from the thinking of Jeremy Bentham. Bentham's book starts with the statement of utility. See Bentham 1781/2000, p. 14. Game theory also relies on rationality; however the focus is on the strategic interrelationships that can exist between decision makers and that influence their optimal choices. For an introduction to game theoretic models see for example Siegfried 2006; Devlin 2015.

77 Furubotn and Richter 2005, p. 4. For an example of such understanding see Kreps 1990, p. 774.

78 Furubotn and Richter 2005, p. 4.

79 Furubotn and Richter 2005, p. 4. The term bounded rationality was originally from Herbert A. Simon. Simon uses the term to signify the fact that decision makers are not omniscient and have real difficulties in processing information. Thus, people are intentionally rational, not hyper rational. See Simon 1957.

80 Williamson 1975, p. 4.

81 Ménard and Shirley 2008, p. 2.

preferences of decision makers are incomplete and are subject to change over time. When transaction costs were placed, it was an easy step to a further understanding that individuals have restricted ability to prepare plans and manage information.⁸² The idea of uncertainty was a central feature in Coase's arguments. For Coase it seems to be improbable that a company could exist without the existence of uncertainty.⁸³ New institutional economics differs from the traditional economics in a significant way. NIE does not just peer into the black box of companies, but also opens the black box of the markets. Claude Ménard indicates that NIE see that markets require institutional support to exist and develop, and markets are diverse in their costs. The diversification of costs is caused by variations in how markets are organised, what rules support them, and how those rules are enforced.⁸⁴ Transaction costs seem to be high when property rights are uncertain and the boundary of rights is unclear, or there are many parties to negotiate with and the parties are not familiar with each other, or the enforcement of the rights is a difficult and long process. When transaction costs are sufficiently high, then the patent transaction market becomes inefficient.⁸⁵ Individuals create institutions and organisations that eventually will reduce transaction costs. Different structures give rise to differential opportunity sets and lead to different allocations of wealth and power within an economic system. Consequently, economic choices are affected through different structures of incentives and constraints.⁸⁶

Using the NIE concepts, the patent enforcement environment can be understood through two interactive levels: the macro-oriented institutional environment and the micro-oriented organisational arrangements. NIE studies how these institutions interact with organisational arrangements, as they are interactive by nature. Therefore, one essential aspect is the interaction between rules and different entities such as companies and patent funds. Figure 1. illustrates the NIE.

82 Furubotn and Richter 2005, p. 4.

83 Coase 1937, p. 392.

84 Ménard 2008, pp. 304–305.

85 Cooter and Ulen 2012, p. 94.

86 Mercuro and Medema 2006, p. 249.

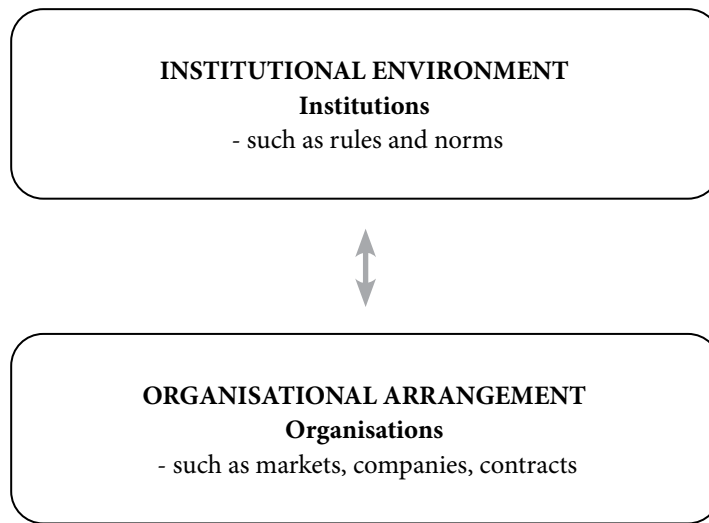


Figure 1.

The institutional environment sets the general framework within the domain in which the organisational arrangements take place. Institutions include the written and unwritten rules, norms and constraints that individuals invent to reduce uncertainty and control the environment. Institutions can be further divided in three groups. First, written rules and agreements that govern contractual relationships and corporate governance. Second, constitutions, laws and rules that govern politics, government, finance, and society more broadly. Third, the unwritten codes of conduct, the norms of behaviour, and beliefs.⁸⁷ Institutions grant property rights and collective rules framing the exercise of these rights, and by means of coordination.⁸⁸ The relevant rules for this research are identified as legal institutions. Institutions determine the costs of transactions. As a result, effective institutions lower transaction costs.⁸⁹

The second level in the NIE theory is devoted to an analysis of the choice of the governance structures of private actors. An organisational arrangement is defined as a specific arrangement between economic units that governs the ways in which these units can cooperate or compete.⁹⁰ Organisational arrangements or organisations are the different modes of governance that are implemented to support production and

87 Ménard and Shirley 2008, p. 1.

88 Brosseau and Glachant 2008, p. xliii.

89 Transaction cost is a central concept for NIE. See North 1990, pp. 6–7; Furubotn and Richter 2005, p. 7.

90 Mercuro and Medema 2006, p. 261.

exchange. Organisational arrangements have three different groups. First, markets, companies and the other forms that economic entities develop to facilitate and to advance transactions. Second, contracts that provide a framework for organising activities. Third, the behavioural features that underlie the arguments chosen.⁹¹

For a new institutionalist, the performance of a market economy depends upon the institutional environment and organisational arrangements that facilitate transactions and provide a platform for a cooperative behaviour. NIE focuses on how such institutions merge, operate, and evolve, and how they shape the organisational arrangements that support production and exchange.⁹² Contract allows organisations to redesign and transfer their rights between one another. An organisation's ability to contract and the cost of contracting depends on the institutional environment.⁹³ Organisational arrangements and their effects may affect pressures on the institutional environment. The basic rules at the first level are helping to define the environment and the institutional arrangement that actually determine the ongoing production, exchange and distribution, that directly affect economic performance.⁹⁴ When institutions are functioning effectively, then, institutions can be understood as devices for reducing uncertainty so that the costs of coordinating economic and other activities can be lowered.⁹⁵ Hence, institutions can have a central role in reducing transaction costs by improving the enforcement of patents. However, institutions are designed and lead by individuals with bounded rationality. Since technological and social changes are constantly accelerating, institutions are never fully adapted to coordination need, or fully efficient.⁹⁶

Legal constraints can limit companies' growth when not functioning effectively and achieving the intended goals such as efficiency or legal certainty. Under the conditions of limited information and computational ability, institutions that are inherently constrained are a prerequisite.⁹⁷ The institutions evaluated in this research, the legislation and case law related to the European patent enforcement, impose legal constraints on start-ups and growth companies and the annexed articles evaluate the characteristics of those constraints. Hence, institutions should be understood as constraints that give a structure to society and organisations' relationships with each other and limit undesirable behaviour.

91 Ménard and Shirley 2008, p. 1.

92 Ménard & Shirley 2008, 2.

93 Brosseau and Glachant 2008, pp. xliii–xliv.

94 Mercuro and Medema 2006, p. 247 and 261.

95 Furubotn and Richter 2005, p. 7.

96 Brosseau and Glachant 2008, p. xlv.

97 North 1990, p. 45.

2.2 Normative goals

Jeremy Bentham in the 1780s already introduced through the utilitarian theory the basic understanding about the normative economics. Hence, the book of jurisprudence written by Bentham had two objects: to ascertain what the law is, and to ascertain what the law ought to be. The first was expository jurisprudence and the second one was censorial jurisprudence. Bentham called the book of jurisprudence as *the art of legislation*.⁹⁸

Richard Posner's argumentation brings the economics and law approach closer to normative analysis and positive analysis.⁹⁹ Similar to legal analysis, in economics positive and normative analysis is also used. Positive economic analysis applies mathematical models and empirical tools in offering an explanation to causal connections between various variables, as well as predictions as to the effect of changes in one variable on others. In the field of law, law and economics scholars are mainly interested in the effects of different legal rules on various phenomena and in the effect of different institutional factors in legal decision-making. Normative economic analysis ranks alternative solutions or identifies the desirable legal or institutional arrangements and explains what a desirable legal arrangement or judicial outcome is.¹⁰⁰ For example, if the goal is to explore the influence of patent enforcement law on start-ups and growth companies, on the basis of positive analysis the optimal legal rules have to be described. To perform a normative analysis, a normative object has to be defined. The leading normative goal of most law and economic literature is efficiency.¹⁰¹ Originally, Posner set efficiency as the normative goal.¹⁰² However, this does not indicate that efficiency is an exclusive normative goal. Any teleological principle can be set as the normative goal of economic analysis. In principle, also non-teleological principles can serve as goals for normative analysis.¹⁰³ Therefore, it is essential to explain the normative goal. Thus, in this research efficiency and legal certainty need to be defined.

Principles are behind regulatory regimes. The idea of principles standing behind rules and informing their application, or being used to create new rules, is found in the jurisprudential literature that addresses the theories of judicial decision-making

98 Bentham 1781/2000, p. 234.

99 Posner 2014, p. 31 and the following

100 Elkin-Koren and Salzberger 2013, p. 2.

101 Elkin-Koren and Salzberger 2013, p. 71; Devlin 2015, p. 2.

102 Posner 2014, p. 14.

103 Coleman 1998; Elkin-Koren and Salzberger 2013, p. 40. For example, teleological principle can be a theory of justice introduced by John Rawls. See Rawls 1999. For teleological and non-teleological difference in thinking see for example, Jain (2017).

and interpretation. There are different theories explaining the difference. Principles do not compose a consistent whole. Principles have a high degree of generality and they can conflict.¹⁰⁴ This conflict is settled by decision-makers assigning weights to relevant principles in order to reach a solution.¹⁰⁵ Furthermore, the difference is explained that rules describe specific acts and principles describe highly unspecific acts.¹⁰⁶ The principles used in this research are efficiency and legal certainty. Legal certainty is a legal principle having a juristic character. Efficiency is not a legal principle as such. Non-legal principles constitute an agreed standard of conduct and move actions in a certain direction. Their source is not the legal system although they may ultimately find a place there. They evolve from the values and practices of a given community of actors.¹⁰⁷

2.3. Efficiency

There are several competing definitions of efficiency such as Pareto optimality, utility maximization and wealth maximization.¹⁰⁸ Pareto optimality means that resources cannot be reallocated so as to make on individual wealthier without making some else less wealthy.¹⁰⁹ However, it is generally recognised that there are a few policies whose effects leave no one less affluent as required by the Pareto optimality. Typically, any legal change such as change in the law or the implementation of new laws creates winners and losers. Hence, the compensation principle was formulated as an alternative to the Pareto optimality. The compensation principle holds that legal change that favours one individual at the expense of others should result in an unambiguous improvement in society's welfare. As a corollary, the compensation principle claims that a change constitutes an improvement if the gain to the winners exceeds the loss to the losers. The compensation principle is often described as a Kaldor-Hicks efficiency or a wealth maximization. The latter term was formulated by Richard Posner.¹¹⁰ When, an economist and a legal scholar speaks of efficiency they general refer to wealth maximization and Kaldor-Hicks efficiency.¹¹¹

104 Dworkin 1967, p. 14 and 25. See also Posner 1990, pp. 21–22.

105 Braithwaite and Drahos 2000, p. 18.

106 Raz 1972, pp. 823–854.

107 Braithwaite and Drahos 2000, p. 18.

108 Elkin-Koren and Salzberger 2013, p. 71.

109 Mercuro and Medema 2006, p. 21.

110 Mercuro and Medema 2006, p. 26.

111 McDonough 2006, p. 216; Posner 2014, p. 15 According to Posner when an economist says that free trade or competition or the control of pollution or state of world is efficient, nine times of ten they mean Kaldor-Hicks efficiency. Efficiency is rooted in the work of writers such as Ronald H. Coase, Guido Calabresi, Henry Manne, Gary Becker and Richard A. Posner. See Mercuro and Medema 2006, p. 94.

The Kaldor-Hicks criterion of efficiency allows changes where there are both gainers and losers but requires gainers to gain more than the losers lose. If this condition is satisfied then, the gainers can, in principle, compensate the losers and still have a surplus left for themselves. Compensation does not actually have to be made, but it must be possible in principle.¹¹² Therefore, the question arises can regulatory-based solutions facilitate Kaldor-Hicks efficient transactions? To address the question parties have to be addressed. There are two direct parties that also interest this research. Each party can gain or lose as a result of a patent litigation or a threat of litigation, and the goal of efficiency is a wealth maximization.¹¹³ When procedural safeguards are working, the losers are for example NPEs which lose the ability to use patents in order to get financial competition. However, NPEs use of patents is essentially unproductive; thus, these patents do not lead to the discovery of new products, services or processes for the benefit of the society.¹¹⁴ This scenario has start-ups and growth companies as winners gaining the value of the patent. This also means a continuing of research and innovation activities leading to new possible discoveries by start-ups and growth companies. As a consequence, when procedural safeguards are not working the losers are the start-ups and growth companies that lose the value of their patent, and possibly cannot continue research and innovation activities due to the high costs that litigation demands. Overall, it seems that regulatory-based solutions, safeguards represent a Kaldor-Hicks efficiency improvement as the benefits of working safeguards outweigh the costs of non-working safeguards.

However, start-ups and growth companies face constraints that limit growth. Allocative efficiency such as Pareto optimality or the Kaldor-Hicks concept of efficiency evaluate the outcomes of the process. In allocative efficiency institutions play virtually no role at all. Using allocative efficiency analysis, constraints could be classified into avoidable and unavoidable meanings that the inefficiency produces if potentially avoidable constraints are not avoided. However, it is hardly possible to establish an objective criterion for determining which constraints are avoidable. Therefore, the analytical focus should shift from concern with narrow technical issues of allocative efficiency to consideration of how legal or other constraints can be changed to improve economic performance.¹¹⁵ Therefore, North suggests the concept of adaptive efficiency which is concerned with rules of the kind that shape the way an economy evolves through time. In addition, it is concerned with the willingness of a society to induce innovation, to undertake risk and creativity, as well as to resolve the

112 Calabresi 1991, p. 1211 and 1221; Cooter and Ulen 2012, p. 42.

113 McDonough 2006, p. 216.

114 Mazzucato 2018, pp. 431 and 473–373.

115 Furubotn and Richter 2005, p. 109.

problems and bottlenecks of society over time.¹¹⁶ Adaptive efficiency acknowledges institutions that prevent vexatious litigation that in turn lower transaction costs.¹¹⁷ From this it follows that I have to define what is meant by vexatious litigation. Vexatious litigation refers for example to the patent holder's behaviour that seek to enforce a patent that is probably invalid or stretch a valid patent's right to cover activities outside the patent's proper scope.¹¹⁸ In general patent holders' use of patents may be abusive if the initial objectives of the patent system are not followed.¹¹⁹ Vexatious litigation limits start-ups and growth companies' growth and, therefore, is seen as a legal constraint.¹²⁰

2.4 Legal Certainty

Legal certainty is a widely recognised general principle. However, it is a wide concept which cannot be explained in a few words although predictability it is probably the core aspect.¹²¹

The general idea of legal certainty is recognised by the most legal systems.¹²² However, in EU law it has a concrete role in the form of various sub-concepts which are regarded as an application of legal certainty. The frequently addressed sub-concepts are non-retroactivity, legitimate exceptions and acquired rights.¹²³ Retroactivity refers to the application of a new rule of law to an act or transaction which was completed before the rule came into force (*true retroactivity*). It refers also to a situation when a new rule of law is applied to an act or transaction in the process of completion (*quasi-retroactivity*).¹²⁴ According to the legitimate exceptions legal measures should not violate the legitimate exceptions of those concerned. Thus, those who act reasonably and in good faith on the basis of the law as it is or at least seems to be should not suffer from unrealized legitimate exceptions.¹²⁵ The principle of

116 North 1990, 80; Furubotn and Richter 2005, p. 109.

117 From the transaction cost analysis point of view, here the focus is on enforcement costs that include costs associated with patent infringement proceedings. North has defined enforcement costs in a similar way. See North 1990, pp. 54–69. See also Ball and Kesan 2009, p. 3, footnote 5.

118 Meurer 2003, p. 510.

119 See for example Love 2015, p. 1; Strowel and Léonard 2020, p. 1; Rantasaari 2020, p. 332.

120 North 1990, p. 45.

121 Arnall 1990, p. 3; Raitio 2003, p. 125; Hartley 2007, p. 146.

122 Hartley 2007, p. 146.

123 Arnall 1990, p. 3; Schermers and Waelbroeck 2001, p. 64; Raitio 2003, p. 129; Hartley 2007, pp. 146–148; Portuese, Gough and Tanega 2017, p. 132

124 Hartley 2007, p. 147.

125 Raitio 2003, p. 200; Hartley 2007, p. 147; Portuese, Gough and Tanega 2017, pp. 133–134.

legal certainty also imposes limits on the extent to which an individual legal act may be withdrawn.¹²⁶ One could conclude that these sub-concepts are closely related to one another and also overlap.¹²⁷

Predictability is a notion that overlaps the different sub-concepts of legal certainty. Legal certainty is about choosing the correct legal means in a factual situation that is predictable.¹²⁸ The predictability in the settlement of disputes as referred to in legal certainty is not the same as predictability in probability calculus. Thus, the predictability in the context of law is not the same as the 50 percent probability of either losing or winning in a court case. Predictability is often measured in relation to the relevant norms and interpretation practices which emphasis the coherence of judicial interpretation.¹²⁹

Juha Raitio further explains that legal certainty cannot be viewed by defining it, but rather finding a combination of various approaches. Legal certainty approaches, philosophical questions, and investigations have three features. These three features are the following. First, there is not an agreed procedure for solving the concept of legal certainty. Second, legal certainty addresses the intellectual framework and profound questions such as describing justice. Third, the study of legal certainty is, in a broad sense, a conceptual issue. Conceptual problems cannot be solved by having a good look at the environment or by performing a set of experiments on the environment. Therefore, there is a profound difference with regard to the natural sciences.¹³⁰ This also indicates that legal certainty and its meaning may vary depending on the methods and viewpoints chosen.¹³¹

The principle of legal certainty is particularly important in economic law. Economic and commercial life is often based on advance planning. The general understanding behind this is that clear and precise legal provisions reduce transaction costs and promote efficient business. Hence, legal certainty contributes to the production of an economically consistent result.¹³² According to North, the major role of institutions in society is to reduce uncertainty by establishing a stable structure for human interaction.¹³³ The principle of legal certainty entails the relative certainty of the law

126 Hartley 2007, p. 151.

127 Raitio 2003, p. 129.

128 Arnall 1990, p. 3; Tridimas 2006, p. 244; Hartley 2007, p. 146; Raitio 2003, p. 128.

129 Raitio 2018, p. 480.

130 Searle 1998, pp. 340–343; Raitio 2003, p. 130.

131 Raitio 2003, p. 382.

132 Tridimas 2006, p. 242.

133 North 1990, p. 6.

in terms of predictability for those subjected to the law to foresee the applicable law as regards their actions.¹³⁴

The European patent regime's officially presented goal is to promote innovation.¹³⁵ In the preamble to the Act revising the European Patent Convention it is stated that the contracting states to the EPC wish to promote innovation and economic growth in Europe even more effectively by laying down foundations for the further development of the European patent system.¹³⁶ According to Regulation 1257/2012 the Commission should take into account the contribution of the patent system to innovation.¹³⁷ According to the EPO Board of Appeals decision G 0003/92 (*Unlawful applicant*) the terms of the article have to be interpreted in the light of the object and purpose of this system. The *Unlawful applicant* case concerned the procedural rights of a person who has been adjudged to be entitled to the grant of a European patent, as against the actual applicant in the respect of a European patent application.¹³⁸ The Board of Appeal decision makes an important note that the object and purpose of the patent system has to followed. Similarly, Dan L. Burk notes that the patent systems' goal is to promote innovation. This follows from the utilitarian paradigm. Hence, all classes of innovators should be able to participate on the basis of the goals of the system. Otherwise, the patent system is not fulfilling its purpose.¹³⁹

From this it follows that the object and purpose of the patent system creates legitimate exceptions. In this context, a patent holders' legitimate exception is fulfilled if the initial objectives of the patent system are followed. When considering the patent regime as a whole, legal certainty should promote legitimate exceptions for patent holders. The legislation and official documents has set an object to promote innovation. However, abusive purposes such as enforcing a patent that is probably invalid or stretch a valid patent's right to activities outside the patent's proper scope endanger the legal certainty and the initial objectives of the patent system. Hence, it is essential for companies have to have safeguards to protect their patented rights.

134 Portuese, Gough and Tanega 2017, p. 133.

135 See European Commission, Internal Market, Industry, Entrepreneurship and SMEs, available: < https://ec.europa.eu/growth/industry/policy/intellectual-property/patents_en >, last accessed 31 January 2021.

136 Preamble of the Act revising the Convention on the Grant of European Patents (European Patent Convention) of 5 October 1973, last revised on 17 December 1991.

137 Recital 11 of the Regulation (EU) No. 1257/2012.

138 G 0003/92 *Unlawful applicant*, ECLI:EP:BA:1994:G000392.19940613, para 1.

139 Burk 2015, p. 42.

3. INNOVATION AND PATENTS ENABLING GROWTH

This chapter discusses the roles of innovations and patents. Section 3.1. focuses on innovation and growth companies and introduces the innovation cycle. Section 3.2. discusses justification for and criticism of intellectual property. Section 3.3. focuses on intellectual capital and patents as providing value as an intangible asset. The next Section 3.4. evaluates the different ways in which patents are monetised. Section 3.5. describes and evaluates different entities appearing in the patent monetisation scene.

3.1 Innovation and Growth Companies

Innovation can be defined as a functionally novel product, service or process.¹⁴⁰ The road from an invention to an innovation is complex. It means developing, testing, producing and marketing the product. In addition, in many cases it also means developing complementary products or even the whole industries that can take advantage of the invention in the most efficient way. The entire process of research, development, and transforming an idea into a finished commercial product can be described as innovation. Hence, invention is the first step in innovation.¹⁴¹

Adam Smith recognised the central importance of technological innovation to economic growth already in the 1770s.¹⁴² The Smith description of the division of labour at pin factories showed his understanding that changes in the organisation of work could affect productivity and thus, economic growth and wealth.¹⁴³ In the early 1940s, Joseph A. Schumpeter developed a theory of dynamic competition where innovation is seen as “*a perennial gale of creative destruction*”. Therefore, creative destruction is described as the essential fact of capitalism. Innovation can open up new domestic and foreign markets and revolutionise economic structure from within

140 Von Hippel 2017, p. 1.

141 Burk and Lemley 2009, p. 132. This typology follows Joseph Schumpeters writings. See Nelson and Winter 1982, p. 263.

142 Elkin-Koren and Salzberger 2013, p. 43.

143 Smith 1776/1999, pp. 132–133; Mazzucato 2018, p. 50.

by incessantly destroying the old one and incessantly creating a new one. Schumpeter believed in waves of innovation appearing around every thirty years.¹⁴⁴ Schumpeter followed Karl Marx's interest in technological change and that made him to look at the crisis that capitalism would experience due to the effect of innovation on the ability of capital to create surplus value.¹⁴⁵ Later the focus of the economists has been on the positive side of innovation as Schumpeter underscored innovation's role in increasing the productive capacity of national economies.¹⁴⁶ Today most societies value the gains from innovation and faster growth more than they fear its destructive effects.¹⁴⁷

The understanding of innovation has changed over the years. Today, innovation appears to be a multidimensional phenomenon from a company's perspective. The focus has partly shifted from atomistic invention and development by individuals and certain companies to networked innovation activities. One enabling factor for this shift has been the internet decreasing the cost of communication across time and space. Hence, user innovation, peer production and collaboration between academia and industry have an increasingly important role.¹⁴⁸ Furthermore, innovation can be disruptive. Disruptive innovation means a broadening and developing of new markets and providing new functionality for products and services. This, in turn, possible disrupts existing markets. Hence, smaller company with few resources are able to successfully challenge established incumbent businesses. Smaller companies start by appealing to low-end or unserved customers and then migrate to the mainstream market.¹⁴⁹

A good, illustrated way to understand innovation is to see it as an innovation cycle. The innovation cycle spins forward when individuals advance their creative ideas and finally society adopts them. It stops spinning when creative people lack access to information, when they do not share their ideas with their surroundings, when innovations are lost, and when the law and circumstances make innovations inaccessible. However, innovation is not necessarily destructive. It can build on old knowledge.¹⁵⁰

144 Schumpeter 1994, pp. 83–84.

145 Surplus value in this context means the excess of value produced by the labour of workers over the wages they are paid. See Mazzucato 2018, pp. 203–203.

146 Mazzucato 2018, p. 366.

147 Cooter and Ulen 2012, p. 114.

148 Benkler 2017, pp. 2–3. See also von Hippel 2007, pp. 293–294.

149 This theory was originally popularized by Clayton M. Christensen. See Christensen 1997. See also Yu and Hang 2010, p. 435; Christensen, Raynor and McDonald 2015, pp. 46–47.

150 Gollin 2008, pp. 17–19.

The innovation cycle is summarised in Figure 2.¹⁵¹

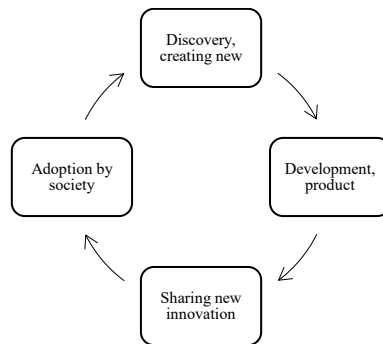


Figure 2.

As Isaac Newton said, each scientist “*stands on the shoulders of giants*” to reach new heights. To describe this more clearly today, most basic and applied researchers are effectively standing on top of a huge pyramid, not just on one set of shoulders.¹⁵² According to Suzanne Scotchmer the most important benefit of innovation may be the boost it gives to later innovators.¹⁵³ A virtuous cycle leads to creative construction in contrast to creative destruction. Creative people may then build on the existing innovations and discoveries to begin a new round in the innovation cycle.¹⁵⁴

The innovation cycle represents an ideal situation. However, a blockage may occur at each phase of the innovation cycle. The creative person may not have access to existing knowledge. IP rights may preclude sufficiently broad accessibility. An innovation might fail to become a product and therefore, lack adoption by society. One effect is then that the innovation cycle slows down or freezes.¹⁵⁵ The rotation has then to be boosted for a number of reasons. As can be seen recently, the development of the internet, the rapid progress of communication technologies and accelerating number of technological innovations have boosted the speed and extent of

151 Figure 2. was adopted from Gollin 2008, p. 17. However, it was modified for purposes of this research.

152 Shapiro 2001, p. 120.

153 Scotchmer 2004, p. 127.

154 Gollin 2008, p. 19.

155 Gollin 2008, p. 19.

knowledge circulation and the creation of new innovations. Furthermore, the ways in which innovations are created have diversified.¹⁵⁶

This idea of an innovation cycle can be further explained in economic terms. Certain parts of a company's innovation activities need a legal means of protection such as patents. A company that innovates and protects their innovation with a patent gains a competitive advantage, which in turn creates extraordinary profits. Extraordinary profits reward the innovator for taking the risk entailed in an innovation activity, which usually demands a significant number of resources. In the long run, however, competition causes the innovation to diffuse and other companies start to use it. When, the innovation diffuses fully, the innovator loses the competitive advantage, and the company's profits fall to an ordinary level and the benefits of the innovation diffuse broadly into the economy. The reward for innovation thus depends on how long the competitive advantage persists. A quick move to the diffusion of innovation gives only a little reward to the innovator and a risk of duplication emerges.¹⁵⁷

3.2. Justification for Intellectual Property Rights

The innovation cycle uses the invisible infrastructure of intellectual property rights. Intellectual property rights are non-exclusive. Thus, they can be found in many places at once and are not consumed by their use. The possession or use of a patented invention does not preclude others from possessing or using it as well.¹⁵⁸ Because intellectual property rights can often be copied by competitors who have not had the expense of creating the invention, there is fear that without legal protection against copying, the incentive to create inventions will be diminished. Since a requirement for granting patents is a public disclosure of the invention, these forms of intellectual ownership do not involve the exclusive right to possess the knowledge or ideas they protect. There is a legal right to exclude others from certain uses of their intellectual work in return for a public disclosure of these works. Disclosure is necessary if people are to learn and build on the ideas of others. Subsequently, there is essentially a trade-off between an incentive and a having access.¹⁵⁹

There are two main foundations for normative analysis of justification for intellectual property rights: a deontological foundation and a teleological foundation (*consequential*). Within these main foundations, we can identify four recent approaches. Deontological theories are natural law and natural rights theories and

156 Benkler 2006, p. 233; Elkin-Koren and Salzberger 2013, pp. 26–27; IMF 2018, p. 190.

157 Cooter and Ulen 2012, p. 114.

158 Fisher 1987, p. 34.

159 Landes and Posner 2003, p. 11.

also, theories focusing on intellectual property as an inherent ingredient of personality. Teleological theories are the utilitarian theory and its derivatives and classical republican theories.¹⁶⁰

The first deontological approach is natural law and natural right theories. A person who labours with resources that are either not owned or held as common properties has a natural property right to the fruits of this effort and the state has a duty to respect and enforce that right. These ideas originate from the writings of John Locke.¹⁶¹ From a natural perspective, intellectual property rights cannot be limited in time and they ought to be allocated to the inventor not to the investor or the corporation where the inventor is employed.¹⁶² The second deontological approach justifies intellectual property rights as an inherent ingredient of the self or of personality. This approach is associated with Immanuel Kant and G. W. F. Hegel's self-fulfilling or self-flourishing arguments.¹⁶³ They might be perceived as an important source for moral rights in intellectual property law.¹⁶⁴

Then there are the teleological theories. The first is the utilitarian approach that justifies intellectual property rights as far as granting such rights maximises social wealth, individual preferences, social wealth or economic efficiency.¹⁶⁵ The second teleological approach is rooted in ideas such as that intellectual property rights should be shaped so as to help foster the achievement of a just and attractive culture or to enable the flourishing of civil society. This approach views that the legal arrangements themselves, as well as institutions and procedures, can affect the basic individual preferences in a way that will make them more acknowledging of others or more cooperative, allowing the extension of the collective utility frontiers.¹⁶⁶

The utilitarian approach creates a platform for the incentives approach which is the most common framework to justify patents. Thus, patents generate incentives to creation and innovation. Patents take into account the public nature of the products, implying that once they are produced, maximising their usage enhances collective utility and wealth. Society grants transitory monopoly to the inventor in exchange

160 Fisher 1987, p. 1; Elkin-Koren and Salzberger 2013, p. 122.

161 Hettinger 1989, p. 2; Guellec 2007, pp. 46–48; Fisher 1987, pp. 36–37, Merges 2011, pp. 34–35.

162 Merges 2011, p. 35, Elkin-Koren and Salzberger 2013, pp. 123–124.

163 Hettinger 1989, p. 3; Merges 2011, p. 44 and pp. 73–74; Elkin-Koren and Salzberger 2013, p. 124.

164 Hettinger 1989, pp. 3–4.

165 Hettinger 1989, p. 1, Fisher 1987, 47; Elkin-Koren and Salzberger 2013, p. 128.

166 Elkin-Koren and Salzberger 2013, p. 129.

for disclosure. In consequence, patents are viewed as a policy instrument.¹⁶⁷ Thus, the principal justification for intellectual property derives from an idea that without an intellectual monopoly, there will be no incentives to innovate. The legal regime of intellectual property is seen as a justification for the central intervention to tackle a public good failure of the market.¹⁶⁸ Similarly, the economists argue that the competitive market is unable to support an efficient level of innovation. In a competitive economy, profit will be driven to zero, not accounting for sunk costs such as research and development (R&D). From an *ex-post* point of view, this is a good outcome, as it keeps prices low and avoids deadweight loss. From an *ex-ante* point of view, it produces a sub-optimal level of investment in research and development. The outcome of which is that most companies would not invest in developing new technologies, and potential innovators might not spend their time on creative works, if rivals enter the market and dissipate the profit.¹⁶⁹

Even though the incentive approach dominates the justification for patents, all theoretical justifications have increased their position. Thus, all these justifications may play a role in the policy discussion.¹⁷⁰ On a general level, it is further argued that the protection for intellectual property (IP) promotes innovation and creativity, and improves competitiveness, preserves employment, ensures fair and equal competition, prevents tax losses and market destabilisation.¹⁷¹ One justification for intellectual property rights is that IP facilitates transferability of innovation. Intellectual property allows people to buy, sell, lease, or trade intangible assets, or use it as a collateral for a loan similar to real or tangible assets. Therefore, it enables owners to explore the profitable uses of IP.¹⁷²

Despite all the justifications, there is criticism of IP. Fritz Machlup in 1958 already wrote in relation to the US patent system that “*if we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible on the basis of our present knowledge, to recommend abolishing it.*”¹⁷³ Since then, there have been significant developments in

167 Hettinger 1989, 47; Guellec 2007, pp. 49–50; Elkin-Koren and Salzberger 2013, p. 128.

168 Elkin-Koren and Salzberger 2013, p. 76.

169 Menell & Scotchmer 2005, p. 3. For criticism of this economic justification see for example Boldrin and Levine 2008, pp. 158–160.

170 Davies 2002, p. 17; Elkin-Koren and Salzberger 2013, p. 132; Tushnet 2018, p. 113.

171 European Commission, Guidance on Certain Aspects of Directive 2004/48/EC of the European Parliament and of the Council on the Enforcement of Intellectual Property Rights, COM (2017) 708 Final, p. 3.

172 de Soto 2001, pp. 31–32; Gollin 2008, p. 19.

173 Machlup 1958, p. 80.

patent systems around the world. However, calls for patent law reform have continued unabated. Thus, many countries are involved in discussions on how, for example, to define their existing rights, or to improve the procedure for patent examination and enforcement.¹⁷⁴

Criticism seeks to restrict or eliminate some types of intellectual property protection. For example, exclusive rights can be excessive and reduce access to innovation, or intellectual property rights can create monopolies around particular technologies.¹⁷⁵ Furthermore, recent studies indicate that creation and innovation can be profitable even without the externally provided rewards. There are other measures that make innovation profitable. Such measures are lead time, first-mover advantage, sales and service expertise, secrecy and a superior manufacturing capacity.¹⁷⁶ These other measures do not apply to all industries. In certain fields such as pharmaceuticals there is evidence of a need for external incentives. However, the evidence related to this demand is mixed.¹⁷⁷

Despite the criticism, patents are inherently part of the intellectual property regime. Thus, there is no possibility to eliminate the whole system, at least not very rapidly. Intellectual property rights have existed for a long time and created around them an ecosystem of business practices, professional skills, legal and informal institutions.¹⁷⁸ Companies need patents to operate. Due to globalisation, national markets are opening up to foreign entrants and due to this becoming more competitive. Companies exposed to competition are also exposed to imitation and need more protection.

3.3 Patents Providing Values as an Intangible Asset

The utilitarian approach to IPRs leads to a discussion on the material value of patents. For companies, there are two major components of intellectual capital, human capital, and intellectual assets that can be converted into profits. Human capital consists of companies' employees, each having their own skills, abilities, knowledge and know-how. In each employee resides the uncodified or tacit knowledge the company

174 Palombi 2012, p. 245. For patent reforms see for example Merges 2001; Gold 2003; Leveque and Ménière 2006; Lerner and Zhu 2007; Boldrin and Levine 2008; Hope 2008; Mazzucato 2011.

175 Gollin 2008, pp. 40–41; Palombi 2012, pp. 260–261.

176 Johnson 2006, pp. 269, 278, 279–280; Johnson 2011, p. 662; Mazzucato 2018, p. 214.

177 Elkin-Koren and Salzberger 2013, p. 87; Johnson 2011, p. 663. For pharmaceuticals see Boldrin and Levine 2008.

178 Merges 2011, p. 6. For example, Boldrin & Levine are against patent monopolies. However, they cannot be abolished at once, Boldrin and Levine 2008, p. 244.

seeks to utilise. Intellectual assets are created when the knowledge is codified and defined.¹⁷⁹ Intellectual capital becomes an intellectual asset when some useful order is created out of free-floating brainpower.¹⁸⁰

Intellectual assets are transferable and can be owned by a company whereas human capital cannot. For this reason, it is beneficial for a company to be able to transform the innovations produced by its human capital into intellectual assets to which a company can assert the rights of ownership.¹⁸¹ Intellectual assets are defined as non-monetary assets that have no visible, tactile, or measurable qualities, but are identifiable as separate assets and have many material effects on business outcomes. There are two primary forms of intangibles: competitive intangibles and legal intangibles.¹⁸² Competitive intangibles are those which cannot be directly owned but nonetheless confer on an organisation competitive benefits such as cost savings. A company's assembled workforce or human capital may be a competitive intangible.¹⁸³ Intellectual property (IP) is an intangible asset that result from intellectual creative efforts, and for which legal ownership rights and protections can be asserted.¹⁸⁴

IP rights share the main characteristics of other property rights. Thus, they are transferable and exclusionary rights in respect of a discrete and definable object.¹⁸⁵ In addition, they are enforceable by their owner or the state in civil or criminal proceedings. However, IP rights are negative rights, since they confer only the right to exclude others from using the invention claimed in the patent without also conferring at right to utilise the invention itself. The distinction is not just semantic, it is important in the case of technological products such as medicines and plant varieties, the commercial use of which requires separate regulatory approval from the state.¹⁸⁶ In addition, there are also other profound differences to other property rights. For example, exclusivity in the field of IP is far less inviolate than it is on traditional property rights. Furthermore, real and personal property involves perpetual ownership exclusivity, in contrast to IPRs where the duration of protection is limited.¹⁸⁷ For example, the statutory life of patents is nearly uniform in almost all countries. The

179 Sullivan 1998, p. 5.

180 Stewart 1997, p. 67.

181 Stewart 1997, pp. ix–x; Sullivan 1998, pp. 20–21.

182 Sullivan 1998, p. 23; Kothari & Mehta & Latika 2013, p. 9; Porter and Rakec 2016, p. 5.

183 Kothari & Mehta & Latika 2013, pp. 9–13; Porter and Rakec 2016, p. 5.

184 Besen and Raskind 1991, p. 5; Porter and Rakec 2016, p. 5.

185 Pila and Torremans 2016, p. 506. The only exception for transferability is moral rights as an aspect of copyright.

186 Hettinger 1989, p. 35; Jackson Knight 2013, p. 2; Pila and Torremans 2016, p. 5; Porter and Rakec 2016, pp. 7–8.

187 Menell and Scotchmer 2005, pp. 1–2.

TRIPS Agreement requires Signatory Countries to set a 20-year minimum from the filing date of a patent application.¹⁸⁸

In conclusion, patents have similarities and some differences with property rights. However, patents might have a significant value for the owner. A patent is not only expected to increase the share of income accruing to the inventor, but also to induce an inventor to use the invention so as to maximise the value it generates. This gives potential for the broader use of patents that has been developed over the years.¹⁸⁹ This will be addressed in the following section.

3.4 Monetisation of Patents Enables the Evolving of the Patent Transaction Market

Patents materialise the value of knowledge and make it tradable. Patents are seen as property rights, which can be transferred permanently or temporarily, and thus, be monetised. The monetisation of patents means the ways in which patents can be transferred and turn partly or wholly into financial gain. Monetisation relates to technology transfer meaning that the owner of the patent or the holder of licensed rights exploits the technology by granting the new rights of exploitation to the technology transfer partner.

A patented innovation does not necessary become a single product or into any product at all. It is a large step from new knowledge to initiating a new product or process. Those innovations that becomes products are likely to continue to need research in order to fully understand the invention's properties and applications and to either continue the inventive work or partner with others who will do so. Furthermore, the eventual product is likely to flow from numerous patented technologies in most cases. Such technologies may be present in the invention itself, in the process of making the invention, or in the processes in which the invention is used.¹⁹⁰

The monetisation and transfer of patents is accomplished by a contract, which defines the terms of exchange.¹⁹¹ For the NIE, the concept of a contract is one of the

188 Article 33 of the Agreement on Trade Related Aspects of Intellectual Property Rights, Annex 1C of the Marrakesh Agreement Establishing the World Trade Organization, signed in Marrakesh, Morocco on 15 April 1994 (the TRIPS Agreement).

189 Guellec 2007, p. 53.

190 Feldman 2012, pp. 55–56.

191 Eggertsson 1990, p. 45.

key elements.¹⁹² Formal institutions such as contracts reduce risk and transaction costs. For the NIE, the performance of a market economy depends upon the formal and informal modes of the organisations that facilitate private transactions and cooperative behaviour.¹⁹³ The contractual terms define what rights are being transferred and what are the terms of a transaction. In legal agreements the right to exploit the technology is granted, the technology owner or rights holder is compensated for granting those rights, and the respective rights duties and obligations of the parties that will govern their legal relationship are set out.¹⁹⁴

The monetisation of patents had already emerged by the late 18th century. During that time and even today, the difficulty is that patents reward inventors often *ex post*, after the invention is made and possibly commercialised. This leads to the problem of how to find funding for the research and technical development. Consequently, investors have developed three broad strategies for obtaining financing. The first solution, prefiguring Silicon Valley, was to become an entrepreneur and to move from one start-up to another. These early serial entrepreneurs attracted relatively sophisticated venture capital deals based on private stock offerings, joint ventures, spin-off companies, revenue sharing and stock options.¹⁹⁵ The second solution was to turn to the innovation activities into a business in its own right. By 1870, Thomas Edison had already founded an invention factory devoted to research and development. There were a variety of business models including performing contract research, providing consulting services, selling patents for cash and stock, participating in joint ventures, and spinning off discoveries into Thomas Edison's own manufacturing businesses. This variety of strategies was essential for managing risk. The third solution was for established companies to develop innovations in-house. Already in the 1850s in Germany, chemical research departments had moved out of the universities into industrial laboratories organised by large firms. Some year's later similar development occurred in the US involving the chemical and electrical industries.¹⁹⁶

Nowadays, there are many ways to monetise a patent such as to sell, to license and to co-develop. Furthermore, patents may be used to generate financing via sale

192 The NIE analysis focuses on three central concepts: property rights, contracting and transaction costs, and the interrelationships among all three. See, *inter alia*, Mercurio and Medema 2006, p. 246.

193 Ménard and Shirley 2008.

194 Mendes 2005.

195 Scotchmer and Maurer 2004, p. 12; Lewis 1993, pp. 39–41.

196 In Germany, the first industrial laboratories by large companies were Bayer, Hoechst, Casella, and AGFA. In US, early examples were General Electric, Dow and DuPont. See, *inter alia* Scotchmer and Maurer 2004, pp. 11–12. See also Mowery and Rosenberg 1998.

and license back, collateralisation and securisation. The ways to monetise patent are summarised in Figure 3.

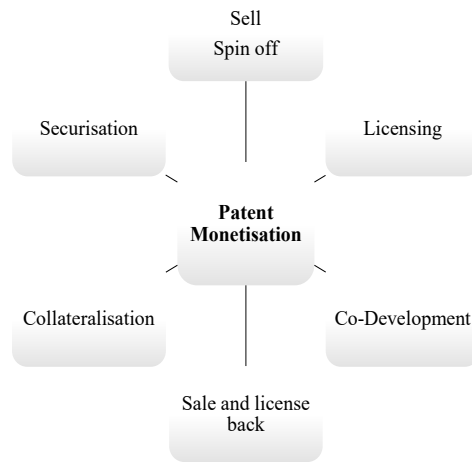


Figure 3.

First, selling and spinning off patents. To sell the patent implies the transfer of the right to future exploitation and is typically associated with a single payment. An alternative is to spin off a new company from an existing entity. In practise, a portion of the intellectual property asset is transferred from an existing company to a new company. The newly established company presents fewer competing priorities, and this leads to a more efficient use of non-core intellectual property assets. Forming a new company also attracts new possibilities in the form of new innovations and investments.¹⁹⁷

Second, one of the most common ways to finance IP is licensing. Licensing is an agreement between the licensor and the licensee. In this regard, the licensor grants the licensee, for example, permission to use the patent. Licencing generates additional cash flows in revenues from licensing deals. In terms of payment, licensing agreements usually include both a fixed payment and variable component, for example a royalty over sales. The compensation can also be a license on another patent granted by the licensee or licensor. This is called a cross-licensing.¹⁹⁸ Compared with the transfer of ownership, the licensor potentially retains the right to capitalise on the future development of the technology. A company might license only a non-core asset or part of intellectual property asset. Licensing increases the use of knowledge

197 Jarboe and Furrow 2008, p. 29; Bader et al. 2011, p. 81.

198 Guellec, van Pottlesbergh de la Potterie and van Zeebroeck 2007, p. 89.

and creates alliances between companies that affect production and pricing decisions. Licensing might resolve problems as regards the blocking of rights and lead to the efficient use of patents in circumstances where the patent holder would otherwise exclude others from becoming users. Therefore, cross-licensing agreements between competitors who infringe another party's intellectual property portfolio emerge. For smaller companies licensing is essential due to financial constraints.¹⁹⁹

Licences are contracts by which the patent holder authorises another party to use its patents under certain conditions. Licences are diversified. The licensing agreement can be exclusive meaning that only the respective licensee can exploit the technology. A non-exclusive licencing agreement grants the licensor and potentially several licensees the possibility to exploit the same technology. In addition, there are various other essential aspects such as the territorial limitations, the scope of ownership of the licensed product, the field of use, the possibility for modifications and the transfer or sublicensing rights.²⁰⁰

Third, closely related to licensing is co-development. Co-development shares risk and combines resources and therefore, for example, functions well for biotech companies. In the co-development partnership, the holder of the intellectual property right strategically partners with another company for the development and exploitation of the intellectual property. A license is fundamentally a passive relationship, because the licensor, having granted the license, is not required to do anything else, but to collect the royalties and other payments stipulated by the license. The co-development partnership is an active relationship, with resources and capabilities being contributed by the co-development partners. Often this involves the granting of a license by one co-development partner to the other.²⁰¹ The co-development partnership is established in the co-development agreement. Furthermore, there are co-marketing agreements in which the intellectual property is similarly licensed by the licensor to the business partner. However, they also market together the products developed from the intellectual property. Value adding here occurs in accessing together respective marketing networks and resources to take a product onto a market.²⁰²

Fourth, comes the sale and license-back. In a sale and license-back the owner of the assets sells the IP ownership to the investor and licenses the same assets back. It is very similar to the sale and leaseback of capital equipment. The sale and license-back

199 Scotchmer 2004, pp. 161–162; Jacobs 2006, p. 203.

200 Scotchmer 2004, pp. 161–162; Guellec, van Pottlesberghe de la Potterie and van Zeebroeck 2007, p. 89; Bader et al. 2011, p. 82.

201 Mendes 2005, p. 28.

202 Mendes 2005, p. 5.

of patents requires a significantly sized deal to support the amount of due diligence needed. The sale and license-back enables companies to raise capital for further innovation and business development. The sale and license-back offers a way to continue commercialisation and business operations although the IP asset has been sold to another company. However, there is potentially an option to buy back the ownership at a fixed price.²⁰³

Finally, collateralisation and securisation of IP rights. In collateralisation, large banking institutions offer loans secured by intellectual property assets. Patents find some credence from credit institutions since they are reasonably transferable and can guarantee against default risk. In securitisation, financial assets are pooled and converted into instruments that may be offered and sold in the capital markets. The securitisation of IP rights typically consists of transferring the royalty stream of one or several IP assets to a bankruptcy remote vehicle, which, in turn, issues securities to investors.²⁰⁴ One of the first intangible asset securitisation deals occurred in 1997 when the Pullman Group's Jones and Tintoretto deal securitised offerings based on the record master and music-publishing royalties of David Bowie. One of the first deals using patents was in 2000 when Royalty Pharma securitised the Yale University patent of the drug Zerit. Securitisation is mostly used in pharmaceutical industry as there is often a predictable revenue stream from the licenses.²⁰⁵

Even though there are many ways to monetise patents, financial resources and the lack of knowledge limit the monetisation of patents for start-ups and growth companies. In the above-mentioned sale and license-back, the collateral and the securitisation are often too complex and costly for smaller companies to realise. The sale and license-back of IP for example, requires a significantly sized deal to support the amount of due diligence needed. The securitisation of royalty streams is out of the reach of smaller companies as such deals are very complex and typically require a history of the IP asset.²⁰⁶ Hence, the sale of the IP asset and licensing seem to be the most prominent methods for start-ups and growth companies. According to research conducted by Gaétan de Rassenfosse, nearly half of SMEs acquire patents for monetary reasons. Large companies mainly patent to prevent imitation by competitors and to protect their freedom to operate. SMEs consistently report higher reliance

203 Jarboe and Furrow 2008, p. 35; de Rassenfosse 2012, p. 441.

204 Jarboe and Furrow 2008, p. 35; de Rassenfosse 2012, p. 441.

205 Jarboe and Furrow 2008, pp. 39–41; de Rassenfosse 2012, p. 339.

206 de Rassenfosse 2012, p. 339. In this analysis empirical data is based on an international survey conducted by the EPO and the formerly done research.

on patents to attract investors or to earn licensing revenues compared with larger companies.²⁰⁷

Monetisation of patents includes the idea that patents provide value. Thus, patents are considered as being productive. However, patents can also be unproductive. According to Mariana Mazzucato, this means that a market for patents has emerged where the value of the patent is decoupled or effectively monetised from the value of the production of goods or services the patent makes possible. A patent does not necessarily lead to the discovery of new products, services or processes for the benefit of the society. Occasionally, innovation is used only for rent-seeking and patents are deployed against other companies or competitors.²⁰⁸ Hence, patents may promote harmful rent-seeking by the owners of patents that threaten or undertake opportunistic and anti-competitive lawsuits. This kind of IP litigation is common because patent rights are relatively easy to obtain and apply broadly. In addition, the problem is becoming increasingly worse because of the expansion of the scope and strength of IP law.²⁰⁹

3.5 New Players in the Field

Patent monetisation leads to new businesses. Hence, there are a variety of new entities that focus their own business on patent related transactions and are thus involved in patent monetisation either as a buyer, a seller or intermediaries. An intermediary refers to an entity that acts between the owner of the technology and the potential buyer or the potential cooperation partner. An intermediary facilitates the transaction. These entities could play an important role in promoting innovation as the effective use of patents will help growth companies innovation processes and strengthen their competitiveness.²¹⁰ This is essential for start-ups and growth companies as they often lack the financial resources and expertise to monetise patents. These entities are called organisational arrangements or organisations according to the NIE terminology. Organisational arrangements are the different modes of governance that market actors implement to support production and exchange. These include various combinations of forms that economic actors develop to facilitate transactions, and contractual agreements provide a framework for organising such activities.²¹¹

Patents are held by different groupings of companies. First, in the high-technology

207 de Rassenfosse 2012, p. 449.

208 Mazzucato 2018, pp. 431 and 473–373.

209 Meurer 2003, pp. 509–510; Mazzucato 2018, p. 473.

210 Yanagisawa and Guellec 2009, p. 8.

211 Ménard and Shirley 2008, p. 1.

sectors, manufactures often hold a portfolio of patents. Patents are used in their products. Large high-technology companies like Apple, Google, IBM, Nokia, Microsoft or Samsung hold thousands of patents covering a wide variety of technology, usually related to the products or services they offer to their clients or users. These companies are referred to as practising entities. Second, a variety of entities develop patent portfolios either by patenting their innovations or by acquiring them from entities against the payments of revenue-sharing agreements. These entities are often referred to as non-practising entities (NPEs) since they do not practice their patents. Instead, they derive revenues from licensing them. These entities include university research centres.²¹² However, in this study NPE has a narrower meaning and refers only to a litigation-oriented business model. NPEs can also be referred to as patent assertion entities (PAEs).

There are a variety of new entities acting as patent intermediaries. Here the main focus is on entities that are organized as patent funds. Together with patent auctions patent funds are considered the most important patent intermediary.²¹³ Patent funds acquire entitlement to patents from third parties. Depending on the underlying business model, the scheme of investment is to invest in the monetising of the patents thus acquired, in order to achieve high returns. For example, a patent fund may help innovators to obtain a return on their research and development (R&D) activities by negotiating licenses with companies interested in exploiting their technology. In these cases, infringement intermediaries may assist innovators in enforcing their patents and receiving compensation for their investments.²¹⁴

To generate a better understanding about patent funds, comparison to venture capital funds is useful.²¹⁵ Patent funds seek investment opportunities and ways to monetise patents. Patent funds are issued to generate profit. Similar elements between venture capital funds and patent funds appear in the ways in which funds are structured and how funds are raised. Venture capital (VC) is a broad subcategory of private equity (PE). VC refers to investments typically made in innovative companies in the early stages of their development that have potential for high growth and are typically driven by technological innovation. Therefore, their value often lies in intangible assets that are difficult to value. Compared with private equity VC deal sizes are typically smaller. Furthermore, an investment contains an active role in portfolio companies after the investment such as providing financial, administrative, and strategic advice, or by facilitating network opportunities. The VC fund normally

212 Geradin 2019, 4. See also Schwartz 2014, p. 425.

213 See for example Bader et al. 2011, p. 101.

214 Geradin 2019, p. 6.

215 This comparison was originally presented in Rantasaari 2018, p. 173.

takes a minority stake from their portfolio companies, but in addition they receive significant rights that protect their investment such as veto rights on major decisions or board seats.²¹⁶

Similar to VC funds, patent funds are generally structured as a limited partnership. Fund management companies establish these funds in which investors and limited partners (LP) pool money to invest further. Investment professionals and general partners (GP) manage these funds.²¹⁷ The funds are usually closed funds. Funds are issued to finance major investment periods. Investors can subscribe only in a specific period, called a placing or issue period. The fund is dissolved or liquidated after the expiry of a predefined period and the shares are distributed among members. Thus, investors cannot withdraw their capital until the fund is terminated.²¹⁸ Most venture capital funds have a contractually limited ten-year lifetime, with the potential to further extend for some years, usually subject to investor consent.²¹⁹

Patent funds raise funds to finance activities similar to venture capitalists. The fundraising occurs in a very competitive environment. The venture capitalists collect funds from institutional investors such as pension funds, insurance companies and foundations.²²⁰ Funding sources for patent funds come from investors such as larger companies, hedge funds, venture capital funds, academic institutions, wealthy individuals or even from state-controlled bodies for example nations such as China, France, South Korea and Taiwan.²²¹ Like venture capital funds, patent funds are often blind pools of capital. Blind pools of capital mean that an investor does not know in advance which patents will be invested in while an asset pool has its investment targets defined in advance.²²² Sources of innovations are for example universities, research institutes, and start-ups and growth companies and their portfolios cover different areas of innovation.²²³

216 For some overview on venture capital and private equity, see, inter alia, Talmor and Vasvari 2011, p. 29 and pp. 361–362. In addition, see, inter alia, Jarboe and Furrow 2008; Meyer and Mathonet 2005.

217 Meyer and Mathonet 2005, p. 10; Talmor and Vasvari 2011, p. 29; Buchtela & Egger & Herzog & Tkacheva 2010, p. 13.

218 The fund can also be open (also called mutual fund), which allows investors to join at any time. Furthermore, the fund is obliged to return investments; purchase and sales prices are identified in the market on a daily basis. See for example Buchtela & Egger & Herzog & Tkacheva 2010, p. 14; Talmor and Vasvari, 2011, pp. 27–28.

219 Talmor and Vasvari 2011, p. 30 and 362; Ewing and Feldman 2012, pp. 11–12.

220 Talmor and Vasvari 2011, p. 360.

221 Ewing and Feldman 2012, p. 9.

222 Buchtela & Egger & Herzog & Tkacheva 2010, p. 14, Rantasaari 2018, p. 174.

223 Ewing and Feldman 2012, p. 7.

Similar to venture capital funds, patent funds need to generate acceptable profits for its investors in order to operate successfully. Therefore, the comparison to venture capital return could be interesting if there is relevant data available. An exit is the process in which venture funds realise the return on their investments in companies and the need to ultimately exit investments shapes every aspect of the venture capital cycle, from the ability to raise capital to the types of investments that are made.²²⁴ However, the returns and exits of patent funds are not speculated on here due to the lack of data and information.

Patent funds basically acquire the title to patents from third parties, but the business method and revenue strategy vary. Patent funds are not a unitary phenomenon as different categories can be distinguished. In this study patent funds are differentiated into funds that focus on building a portfolio of patents or those that focus on financing companies. The different business models of patent funds are summarised in Figure 4.

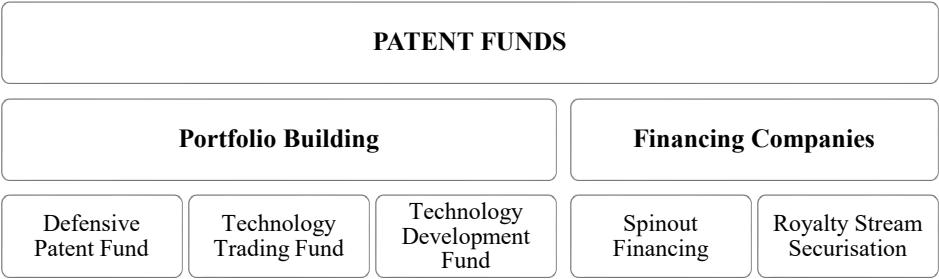


Figure 4.²²⁵

The first group of patents funds focus on building the IP portfolio. They build their patent portfolios based on the patents generated through a strategic acquisition of other parties' patents. The acquisition strategy varies. In some acquisition activity, they purchase the majority of an operating company's patents and patent applications.²²⁶

They typically pay part of the total payment and receive a share of any future

224 Gompers and Lerner 1999, p. 205.

225 This figure was originally presented in Rantasaari 2018, p. 174.

226 Rantasaari 2018, p. 174.

profits generated from asserting the patents against anyone other than the selling manufacturer. Patent funds have exploited uncommon acquisition approaches as well, including purportedly purchasing the rights to all future inventions by researchers at developing countries universities. Other acquisition approaches include the targeted purchases of patents that are of particular interest to the patent funds' investors.²²⁷ IP portfolio building funds attempt to establish licensing programmes based on their patent portfolios and generate revenues from such licensing activities.²²⁸

Technology development funds invest in the acquired IPR to develop it further and to increase the market value. Technology development funds have their own research and development department to develop patents further. However, they do not generally produce any new products or services. These funds aim to bridge the gap between invention and the exploitation of IPR when the technology is at a development stage too far upstream for its market applications to have the degree of legal certainty that other capital providers require. Examples of such funds are Intellectual Ventures and its affiliate funds, Ocean Tomo Capital Fund, the German Patentpool Trust I and II and the Japanese Kyushu Investment Fund.²²⁹ Technology trading funds trade technology without further development of the patents. Acquired patents are aggregated into consistent sets, transferred into Special Purpose Vehicles (SPV) that handle the maintenance and commercialisation within a given time period. Patent trading funds operate through quantity. Therefore, large numbers of patents are bought, whilst only a small number can be resold or licensed. Intellectual Ventures, Alpha Patentfonds 1-3 and France Brevets are examples of this type.²³⁰ Defensive Patent Funds act as strategic protection to maintain the owners' freedom to operate. Acacia, Rembrandt and IP-Com for example assemble patent portfolios that are exploited similarly to the technology trading funds.²³¹

Some of these portfolio-building patent funds overlap with a litigation-oriented business model, often referred as non-practising entities (NPE) or patent assertion entities (PAE).²³² The pure NPE/PAE business model involves acquiring patents from a variety of sources and generates revenues by asserting them. The hybrid NPE/PAE model acquires patents from operating companies and maintain relationships with

227 Ewing and Feldman 2012, pp. 1–2.

228 Rantasaari 2018, p. 174.

229 Bader et al. 2011, pp. 102–103; Buchtela & Egger & Herzog & Tkacheva 2010, pp. 16–17; Guellec and Ménière 2014, p. 28.

230 Buchtela & Egger & Herzog & Tkacheva 2010, pp. 18–26; Schmitt 2014, pp. 98–99; Guellec and Ménière 2014, p. 27.

231 Defensive Patent Funds can also be called Patent Portfolio Aggregators. See for example Bader et al. 2011, p. 103.

232 Bader et al. 2011, pp. 102–103.

these companies post acquisition.²³³ NPEs and PAEs are also called patent trolls. Patent troll refers to the children's fairy tale about a frightening creature who sits under a bridge who jumps out to confront poor passers-by and demand a payment fee before they are allowed to cross the bridge.²³⁴ Companies facing a patent assertion can use their patents for bargaining to avoid costly litigation, when the opponent party is also an operating company due to the mutual deterrence effect. This means that if two firms have patents aimed at each other's products, neither will seek to assert or litigate for fear that the other firm will do the same. However, when facing such an NPE/PAE that focuses solely on asserting its patents without providing any products and services, asserted companies cannot use their patents as a bargaining asset.²³⁵

The second group of patent funds foster patent transfer by financing companies. These companies provide capital for their counterpart against its IP.²³⁶ Patent funds acquire IPs that provide revenues, such as patent rights and royalties. Patent holders trade in patents and royalties for cash. Thus, future cash flows generated by IPs are changed for current cash. A business model can be an IPR spinout financing fund, which specialise in spinning out promising non-core technologies and patents within larger companies or creating joint ventures between large companies to commercialise the technology and monetise the associated patent. These entities provide debt financing for patent owners. They can act either directly or as intermediaries, whereas the security for the loan is the IP asset.²³⁷ Furthermore, there are also royalty stream securitisation companies, which are special purposes vehicles (SPV). Thus, patent owners sell their patents to the SPV. The SPV grants a license-back to the IP owner. The SPV is financed by investors, who in turn profit from the patents' expected future royalties.²³⁸ Most of the IP based structured finance agreements seem to have been concluded in the life science industry. This marketplace emerged in the early 1990s, and is still dominated by a few royalty acquisition funds including Royalty Pharma, DRI Capital and Cowen Healthcare Royalty Partners.²³⁹

Examples of patent funds and new models of cooperation can also be found in small countries like Finland. A patent fund, Intellectual Ventures and the Finnish company, the Raisio Group have established a joint venture called Benemilk Ltd., which aims to develop and strengthen the intellectual property rights portfolio

233 Morton and Shapiro 2014, p. 464; Geradin 2019, p. 6

234 Feldman 2012, p. 38.

235 Yangisawa and Guellec 2009, p. 22.

236 Rantasaari 2018, p. 175.

237 Schmitt 2014, p. 83.

238 Yangisawa and Guellec 2009, p. 31; Schmitt 2014, p. 83; Rantasaari 2018, p. 175.

239 Yangisawa and Guellec 2009, p. 31 See also Yurkerwich 2008.

related to the Benemilk invention and to commercialise the invention on global markets. Raisio transferred the Benemilk invention to the joint venture, which granted Raisio a royalty-free, exclusive license to the invention and its future applications. In 2016, Raisio's Board of Directors decided to decrease Benemilk's activities and to minimise the investment in its international commercialisation. According to the review, customers are not ready to change their eating models due to the milk market crisis. Before this decision there was a failed round of financing and the initiative to find new capital and investors was not a success.²⁴⁰

Institutions provide the structure for patent transactions and determine the cost of transactions. An evolving IPR market can be an institutional arrangement that reduces risk and transaction costs.²⁴¹ Markets for IP evolve due to the new ways of developing and monetising IP that creates new business models.²⁴² An established IPR market reduces costs. Costs incur for example when a company tries to find a business partner by acquiring information and screening the market. Furthermore, it enables smaller companies to more easily find solutions for their technological problems when they gain access to high-quality patents.²⁴³

However, an IPR market can be criticised, and there are ill-effects resulting from evolving markets. First, there is a problem of unproductive entrepreneurship. This basically means that the value of patent is decoupled from the value of the production of goods or services. NPEs for example can strategically hold patents, but not develop or commercialise the innovation. Their business revenue comes from collecting royalties through patent enforcement. Second, IPR markets are still evolving and cannot provide their own security. The state must provide and enforce law in order to ensure the continued viability of a modern market.²⁴⁴ Third, the complexity of patent enforcement causes uncertainty among IPR market actors. In general markets are complex social technologies in the very sense of the notion of complexity. They are made of a significant number of interacting components influencing each other in a non-ergodic way and this makes the enforceability of patents very difficult. This is more significant in the context of evolving markets without establish rules and enforcement mechanisms.²⁴⁵

240 Group company of Raisio Group called Feed Nordic Innovation Oy owns 75 % of the joint venture Benemilk Oy and Intellectual Ventures owns 25 %. See Raisio Group 2013 and Raisio Group 2016.

241 Menard and Shirley 2008, p. 1.

242 Jarboe and Furrow 2008, p. 33.

243 Bader et al. 2011, p. 21.

244 McDonough 2006, p. 206.

245 Brosseau and Glachant 2014, p. 3.

4. EUROPEAN PATENT REGIME

This Chapter proceeds as follows. Section 4.1. embeds the discussion in a patent enforcement scene and discusses how the European patent enforcement functions. Section 4.2. discusses the unitary patent regime. Section 4.3. ends this chapter by discussing the NPEs role in the European patent enforcement scene.

4.1. European Patent Enforcement Complexity

The complexity of European patent enforcement increases transaction costs and makes the enforceability of patents uncertain. The complexity has increased due to the growing cross-border invention of patents. Samuel J. Palmisano writes about the globally integrated enterprise which is a response to the imperatives of globalisation and new technology and demands sensible intellectual property regulation worldwide.²⁴⁶

This also means that patent laws and their application is challenged by the growing interdependence among different entities in different countries within the patent field. Internationalisation manifests as an inborn characteristic of young high-growth companies. They are global from the foundation, drawing upon the right people with the right ideas, talent and capital, wherever they happen to be located.²⁴⁷ However, it is not only talented employees and capital that may come from various countries, but also the innovation itself that may be located in multiple countries. In addition, in the fields of technology numerous patents can overlap for only minor improvements. Thus, an increasing number of products incorporate a combination of many different components. Each of these components may be subject to one or more patents, which makes them subject to a number of patent disputes.²⁴⁸

A cross-border use of innovations and a high degree of connectivity is typical in

246 Palmisano 2006, p. 127 and 134.

247 Hwang and Horowitz 2012, p. 44.

248 Lemley and Shapiro 2007, p. 1992; Ohly 2008, p. 791; Rantasaari 2020, p. 361.

numerous fields of technology such as client-server systems, peer-to-peer systems, cloud computing and artificial intelligence.²⁴⁹ For example, in client-server systems the interaction between the provider of the resource or service (*the server computer*) and service requesters (*client computers*) is established via a computer network, such as the internet. Hence, the computer server and service requesters can be located at any place. This means that the server can be located in the country other than the one in which the services are offered to any requester. In practice, any method that can be implemented on computers can be performed in such way that the computers are located at a different site and can be contacted via a computer network.²⁵⁰ Thus, there are multiple parties interacting with the multiple components of a system in a distributed environment.

Cross-border patent enforcement can be identified through the following four elements: the location of the infringing act, the location of the parties to the case, the location of the infringed IPR, and the location of the damage. Most of the cases address more than one cross-border element.²⁵¹ All European courts meet a rising number of cross-border cases. The following cases illustrate well cross-border patent enforcement. In Germany (*Prepaid case*), a patent suit was based on a client-server system located in Ireland and the defendant was an Irish entity. The server computer was operated outside the territory where the Düsseldorf Court of Appeal ruled that a patent would be infringed if at least one of the infringing activities took place in Germany, and furthermore, the actions outside of Germany are intended to have a direct impact on Germany.²⁵² Similarly, in a British case, the server was located in Canada and the claim was drafted from the perspective of the server. However, the reception of the message had taken place in England. In this case, the High Court of England and Wales ruled that there was no infringement as the method claim was drafted from the point of the server, which was located in Canada.²⁵³

However, there is a fundamental difference between these above-mentioned cases. The Düsseldorf Court of Appeal examines economic effects, and an infringement might occur if there is a direct impact on the market in Germany. The High Court

249 Rantasaari 2019, p. 951.

250 Galli and Gevovich 2012, p. 675; Min and Wichard 2017, pp. 687–688.

251 Christie 2017, p. 161; Rantasaari 2019, p. 951.

252 The relevant patent was a method of processing prepaid telephone calls. For the case referred see (DE) Oberlandesgericht, OLG Düsseldorf, Urteil vom. 10 March 2010 Xa ZR 8/10. For comments of the case see, for example Romandini and Klicznik 2013, pp. 532–533; Min and Wichard 2017, p. 709.

253 The relevant patent was a method of operating a messaging gateway system. For the case referred to see (UK) Research Motion UK Ltd v Motorola Inc [2010] EWHC 118 (Pat). For comments of the case see, for example Romandini and Klicznik 2013, pp. 532–533.

of England and Wales did not examine where the economic effects occurred. Rather, the High Court of England and Wales was interested in who applied the method, as this was the subject of the claim. Since the method of the claim was drafted from the point of view of the server and the method with the claimed features was performed by and on a server located outside England, no infringement was found.²⁵⁴

Today, the patent institution is in practical terms fully globalized. However, this does not indicate harmonisation. At the level of principle, a convergence has evolved in patent law. At the level of interpretation principles, the principle of state sovereignty remains strong.²⁵⁵ Thus, national patent regimes and territoriality dominate patent enforcement. Any reflection on cross-border patent enforcement initiates from the territoriality principle, which is an outcome of territory, sovereignty, and property rights.²⁵⁶ Territoriality indicates that patent protection relies on national or regional legislation.²⁵⁷

In Europe, once the EPO has granted and validated a European patent, each patent is subject to the laws and procedures of the state where it applies.²⁵⁸ National patents are granted by national patent offices in Europe and regulated by domestic patent legislation. National patents are applied for at the patent office where the protection is sought. However, national applications are costly for patentees who seek wide protection since it requires separate applications within each state.²⁵⁹ European patents (EP) are granted by the EPO under the provisions of the EPC. EPs are applied for at the EPO or other EPC receiving office. Once an EP is granted, it amounts to a bundle of national patents, one for each EPC jurisdiction specified. EPs prove to be costly as the post-grant validation of an EP bundle is typically subject to translation provisions. Furthermore, in some countries there are additional validation charges which apply before the EPO granted patent can take effect in a specific territory or territories.²⁶⁰

Whether a national or a European route is followed, the result will always be one or more national patents, conferring rights confined to the territorial boundaries of the granting state. In enforcement terms, there is no such thing as a European patent.

254 Romandini and Klicznik 2013, pp. 532–533.

255 Drahos 2010, pp. 10–11.

256 Drahos 1999. See also Rantasaari 2019, p. 951.

257 Min and Wichard 2017, p. 688.

258 Trimble 2012, pp. 716–717; Romandini and Klicznik 2013, p. 530; Torremans 2015; Pila and Torremans 2016, p. 556.

259 See for example van Pottelsberghe 2009, p. 4; Pila and Torremans 2016, p. 116; McDonagh 2016, pp. 11–12.

260 McDonagh 2016, pp. 11–12. See also EPO 2013.

Hence, while patents granted under the EPC are referred to EPs, they take effect as bundles of national grants regulated by national laws. An EP as a bundle of patents for the same invention does not necessarily offer uniform protection in each state. Although the EP application process centres on a single application to the EPO, the present system for patent enforcement is not homogeneous across the EPC member states. Infringement litigation concerning an EP takes place at national level.²⁶¹ The rights conferred by the respective national segments of a bundle of EPs, and the infringement and validity proceedings before national courts, are governed by the law on the respective jurisdictions where the patent has been validated.²⁶² Hence, litigation can proceed on a national basis in each EPC jurisdiction where the patent has been validated.²⁶³

The present European patent enforcement regime denotes that patents need to be enforced or challenged in proceedings in several different national courts. Legal proceedings in several different national courts apply even if the relevant patents are essentially the same. Thus, patentees have a wide range of jurisdictional options regarding where to file a suit against alleged infringers. In a European private international law context, the Brussels I Regulation and the Lugano Convention are applied to IP law cases.²⁶⁴ Often, patentees choose to file a case against an alleged infringer in the place where infringing goods are manufactured, or in the country where the main distribution occurs. Hence, the possibly granted injunction will have a maximum effect on the infringer's ability to make, distribute and sell the infringing goods.²⁶⁵ When litigation takes place in a number of countries, national jurisprudential differences may have a significant impact on the course of a legal dispute. The various

261 van Pottelsberghe 2009, p. 4; McDonagh 2016, p. 12. Any infringement of a European patent is addressed by national law with the EPO having no legal competence to address and to decide on patent infringements in the Member States of the EPC Article 64.1 of the EPC

262 According to the Article 2 of the EPC the EP shall be subject to the same conditions as a national patent granted by that State. Article 64(3) of the EPC states that any infringement of a European patent shall be dealt with by national law.

263 McDonagh 2016, p. 13.

264 The Council Regulation (EC) No. 22/2001 of the European Parliament and of the Council of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, OJ L 12/1, replaced by the recast version Regulation (EU) No 1215/2012 of the EP and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, [2012] OJ L351/1 (Brussels I Regulation). The Lugano Convention of 16 September 1988 on jurisdiction and the enforcement of judgments in civil and commercial matters, [1988] OJ L 339 (Lugano Convention) covers non-EU Member States such as Iceland, Liechtenstein, Norway and Switzerland, and is also relevant in Denmark, where it preceded the application of the Brussels I Regulation.

265 McDonagh 2016, p. 13.

national courts may differ in their approaches to procedural issues as well as regards substantive matters.²⁶⁶

Luke McDonagh presents two potential scenarios for inconsistency in European patent litigation. First, courts in different national jurisdictions may make inconsistent decisions concerning infringement and/or validity. Second, a national court may rule on validity and consequently, infringement and the EPO opposition finding may later contradict this decision.²⁶⁷

First, courts' inconsistent decisions concerning infringement and/or validity and duplication. Duplication refers to cases that involve the same patent and same litigating parties in multiple jurisdictions.²⁶⁸ In addition, the national courts' interpretations of the EPC might vary.²⁶⁹ Duplication and divergent verdicts are disadvantageous and incur costs on the IPR market participants, and especially on SMEs.²⁷⁰ Cremer et al. have found that most EPs that are litigated in Germany, the UK, France or the Netherlands have also been validated in all four jurisdictions, though fewer are validated in the Netherlands than in the other three.²⁷¹ The percentage of duplicated cases is low in Germany (2%) and France (6%), however, in the UK and the Netherlands, the percentage is higher, the UK (26%) and the Netherlands (15%).²⁷² Overall, only 8.4 % of all litigated EPs are subject to litigation in more than one country. However, these patents are likely to be more important, complex and valuable for their holders.²⁷³ The possibility of having opposite decisions in the case of parallel decisions increases uncertainty over the validity of EPs.²⁷⁴

In practice, duplication may lead to divergent outcomes.²⁷⁵ For instance, the London High Court of Justice has ruled that Nokia has not infringed ICom's patents. However, earlier the German Regional Court of LG Mannheim ruled the oppo-

266 Cremers, Ernicke, Gaessler, Harhoff, Helmers, McDonagh, Schiliessler & van Zeebroeck 2013, s. 5.

267 McDonagh 2016, p. 15.

268 McDonagh 2016, p. 75, Rantasaari 2019, p. 953.

269 Harhoff 2009, p. 15,

270 Bader et al. 2011, p. 145; van Pottelsberghe 2009, p. 14.

271 Cremers, Ernicke, Gaessler, Harhoff, Helmers, McDonagh, Schiliessler & van Zeebroeck 2013, p. 1 and 60. This research compared patent litigation in Germany, the UK, France, and the Netherlands.

272 Cremers, Ernicke, Gaessler, Harhoff, Helmers, McDonagh, Schiliessler & van Zeebroeck 2013, p. 60.

273 Cremers, Ernicke, Gaessler, Harhoff, Helmers, McDonagh, Schiliessler & van Zeebroeck 2013, p. 1 and 5.

274 Mejer and van Pottelsberghe 2012, p. 216,

275 Mejer and van Pottelsberghe 2012, pp. 216–217.

site even though the patents belong to the same family.²⁷⁶ A well-known classic case of divergent verdicts is the *Epilady* case. In the *Epilady* case, the holder of the patent was successful in Belgium, Germany, Italy, and the Netherlands, but not in Austria, France and the United Kingdom. In *Securities System Inc. vs. ECB*, the German and Dutch courts upheld the patent, whereas it was revoked in France and the UK.²⁷⁷

Second, a national court may rule on validity and infringement. However, later the EPO opposition finding may contradict this decision.²⁷⁸ An opposition procedure means that any party who objects to the granting of a patent can petition the Opposition Division of the Office within nine months of publication of the granting of the patent.²⁷⁹ The Opposition Division has power to revoke the patent.²⁸⁰ The effect of an EPO opposition decision on European patent validity is immediate in all relevant EPC territories. This should prevent inconsistency problems occurring concerning the issue of patent validity. However, an appeal against an initial EPO opposition decision can be sent to the EPO Technical Board of Appeals, where it can take several years before a final decision on validity is made.²⁸¹ In the meantime, national legislation may still proceed, meaning that national litigation and EPO opposition proceedings can sometimes occur in parallel, leaving the possibility open for conflicting rulings being issued at national and EPO levels. Hence, during this interim period national courts around Europe can issue the validity and infringement of a patent that the EPO may later decide to invalidate. This interim period is often long and therefore, significantly increasing legal uncertainty.²⁸²

The European patent enforcement regime's fragmentation leads to higher costs and legal uncertainty. Inconsistent national decision-making concerning EPs affects trade between EU Member States, for example, when a patent is found valid in one Member State and invalid in another Member State. This leads to situations where marketing is seized in one Member State and legal in another.²⁸³ In the earlier mentioned *Prepaid Case*, the UPC could have aggregated acts committed in Ireland and in Germany, and based on this aggregation, found unitary patent infringement and

276 (UK) *Nokia Oyj v ICOM GmbH & Co Kg* (2013) EWHC 1158 (Ch); (DE) Landgericht, LG Mannheim, Urteil vom. 27 February 2009, 7 O 94/08. Both cases concerned the European Patent EP1186189.

277 Harhoff 2009, p. 15. The *Epilady* concerned the European Patent EP010656. The *Securities System Inc. vs. ECB* concerned the patent EP0455750.

278 McDonagh 2016, p. 15.

279 Article 99 of the EPC

280 Article 102 of the EPC

281 Article 99 of the EPC; McDonagh 2016, p. 15.

282 van Pottelsberghe 2009, p. 16; McDonagh 2016, p. 15.

283 Farrell and Merges 2004; Ball and Kesan 2009; van Pottelsberghe 2009, pp. 9–13; Harhoff 2009, p. 12; Kitchin 2015, p. 1; McDonagh 2016, pp. 15–16.

issued an injunction through unitary patent regime.²⁸⁴ However, the unitary patent system has its own complexities. Thus, there is certainly a challenge to creating an effective enforcement mechanism for cross-border contexts through procedures that are both fair and equitable with a reasonable time- and cost-efficiency.²⁸⁵ This is truly a challenge when taking into consideration the growing connectiveness of parties across different countries and the fact that national jurisdiction has supremacy over European patent enforcement.

4.2. Unitary Patent System

After the unitary patent regime becomes operational, there is an additional way of protecting a patent: EPs within the UPC and the EPO-granted European Patents with unitary effect (UP). The unitary patent system builds on the existing system of the EPC, preserving its substantive law and the role of the EPO as the granter of European patents and the keeper of the European patent register. The UPC seeks to supplement rather than displace the European bundle patent for participating EU states in order to maximize the patent owners' choice regarding their referred patent grants. Therefore, current national patents and EPs outside the UPC system still exist.²⁸⁶

An EP granted under the EPC benefits from the unitary effect in the participating Member States provided that the owner of the EP has requested and registered the unitary patent protection.²⁸⁷ The UP has a unitary character, meaning that it grants uniform protection and has an equal effect in all participating Member States. The unitary character implies that the UP may only be limited, transferred, revoked, or lapsed in respect of all the participating Member States.²⁸⁸ Therefore, the effect of the unitary patent will include all the participating Member States as a single and indivisible entity to which the territorial boundaries of each contracting state do not apply.²⁸⁹ The UPC Agreement applies to the EP within the UPC and to the UPs. The UPC will hear disputes regarding the infringement of UPs and the EPs within the UPC. EPs are also subject to a transitional period. However, the effect will be that there will be potential inconsistency during the transitional period for the EPs that

284 (DE) Oberlandesgericht, OLG Düsseldorf, Urteil vom. 10 March 2010 Xa ZR 8/10; Romandini and Klicznik 2013, pp. 535.

285 Min and Wichard 2017, pp. 688–689.

286 Pila and Torremans 2016, p. 130.

287 Article 3.1. of the UPC Agreement

288 Article 2 of the UPC Agreement

289 Romandini and Klicznik 2013, p. 535.

have opted-out. The problem confronted here is the fact that the relevant national laws are not fully nor formally harmonised.²⁹⁰

The Unified Patent Court (UPC) is a new specialist patents' court common to participating EU signatory States to the UPC.²⁹¹ The structure of the UPC will be composed of a Court of First Instance and a Court of Appeal. The Court of First Instance consists of central, regional and local divisions.²⁹² The central division will address validity challenges and infringement actions transferred from the local or regional divisions and infringement cases from countries where there is no local regional division.²⁹³ For the practical implementation of the UPC Agreement, the relevant element is the work of the Preparatory Committee. The Preparatory Committee of the UPC Agreement was set up in March 2013 by the 25 Member States that have signed the UPC Agreement. The Preparatory Committee will exist until the UPC is established.²⁹⁴ The procedural details of the UPC Agreement have been developed in the Rules of Procedure (the UPC RoPs).²⁹⁵ The Preparatory Committee has agreed on the draft Rules of Procedure and on the Rules of Fees and Recoverable Costs. Therefore, these rules are final and accepted by the Preparatory Committee, but they lack formal adoption.²⁹⁶

A unitary patent gives the right of exclusivity.²⁹⁷ Exclusivity protects patent owners against infringers. For the unitary patent the UPC Agreement provides a broad set of rules on infringements and their exceptions.²⁹⁸ When a UP is registered,

290 Article 82.1 of the UPC Agreement. See also McDonagh 2016, p. 110; Luginbuehl and Stauder 2014, pp. 149–140.

291 See McDonagh 2016, p. 82.

292 Article 6 and 7 of the UPC Agreement. See the official UPC website for locations: < <https://www.unified-patent-court.org/locations> >, last accessed 31 January 2021. The central division will be in Paris, with specialist technology divisions to be set up in Munich and London. The Munich central division will address engineering patents and the London central division life science patents. However, the UK resignation from the EU will have consequences and the central division has to be re-located. The Court of Appeal has its seat in Luxembourg.

293 Article 32 and 33 of the UPC Agreement.

294 For more information, see the official UPC website: < <https://www.unified-patent-court.org> >, last accessed 31 January 2021.

295 Article 41 of the UPC Agreement.

296 At the time of writing, the latest 18th draft of the UPC RoPs will be under scrutiny by the European Commission on the compatibility of the Rules of Procedure with Union law and will be later be subject to formal adoption by the UPC Administrative Committee. Furthermore, the Preparatory Committee agreed on the Rules on Fees and Recoverable Costs on the 16th of June 2016. More information the official UPC website: < <https://www.unified-patent-court.org/documents> >, last accessed 31 January 2021.

297 Article 5 of the Regulation No. 1257/2012.

298 Articles 5 to 8 of the Regulation No. 1257/2012.

it will have a unitary effect in all UPC signatory states from the date of publication of the grant in the European Bulletin.²⁹⁹ In addition to protection against infringers, exclusivity also means that a patent serves as an asset. The unitary patent is regarded as an object of property, but in this matter the unitary patent regulation specifies the exclusive application of national law. However, rules such as the transfer of rights and *erga omnes* effects of contractual licensing, are missing from the UPC Agreement. This increases fragmentation.³⁰⁰

The unitary patent regime offers inventors another possibility to obtain patent rights, with a concomitant new court the UPC defending these rights. Another possibility means that defendants may face claims for infringements of national patents, EPs patents outside the scope of the UPC, EPs within the UPC and UPs. Thus, four different co-existing systems with different rules. Truly a challenge for smaller companies.³⁰¹ However, the UPC is not yet operational, as the ratification process is still not completed. Due to this, there is no date for the entry into force of the UPC Agreement. Article 89(1) of the UPC Agreement requires that 13 Member States ratify the UPC Agreement, including Germany, France and the UK. For the time being, 16 Contracting States have completed the ratification process, including France and the UK.³⁰² However, Germany has had constitutional problems with the ratification process. Cases have been submitted before the German Federal Constitutional Court (FCC) concerning the law passed by the German Parliament on the implementation of the UPC Agreement.³⁰³ The UK has also withdrawn from the

299 Article 4 of the Regulation No. 1257/2012.

300 Article 7 of the Regulation No. 1257/2012; Hilty & Jaeger & Lamping & Ullrich 2012, p. 2.

301 Kitchin 2015, pp. 4–5.

302 The current status of ratifications can be found from: < <https://www.consilium.europa.eu/en/documents-publications/treaties-agreements/agreement/?id=2013001&DocLanguage=en> >, last accessed 31 January 2021.

303 For Germany, see A complaint (2 BvR 739/17) was decided by the Second Senate of the Federal Court in 13 February 2020. See < <https://www.bundesverfassungsgericht.de/SharedDocs/Pressemitteilungen/EN/2020/bvg20-020.html> >, last accessed 31 January 2021. The German Bundestag approved ratification bill on the Unified Patent Court Agreement on 26 November 2020 see < <https://www.epo.org/news-events/news/2020/20201126b.html> >, last accessed 31 January 2021. < <http://patentblog.kluweriplaw.com/2020/11/26/german-bundestag-approves-legislation-to-ratify-the-unified-patent-court-agreement/> > < <https://dip21.bundestag.de/dip21/btd/19/228/1922847.pdf> >, last accessed 31 January 2021.

Two complaints were filed (2 BvR 2216/20 and 2 BvR 2217/20) and the FCC has asked the Bundespräsident Frank-Walter Steinmeier, to refrain from signing the bill into law see < <http://patentblog.kluweriplaw.com/2021/01/13/german-ratification-of-unified-patent-court-agreement-put-on-hold/> >, last accessed 31 January 2021.

unitary patent system due to the Brexit.³⁰⁴ As a result, the future of the unitary patent regime is unclear.

The unitary patent system with the introduction of wider protection and common a post-grant phase seems to be a new beginning for the European patent system. This also makes the infringements proceedings more attracting as, for example, the threat of injunctions applies to all EU Member States that will ratify the AUPC.³⁰⁵

4.3. NPEs Enforcing Patents in Europe

The possibility for the abuse of enforcement provides new strategies for companies. NPEs are often organised as patent funds. In this research patent funds are seen as organisational arrangements that facilitate transactions and contractual agreements. Some NPEs engage in activities assisting innovators to obtain a return on their research and development. For example, a patent fund may help innovators by negotiating licenses with manufactures they believe have infringe their patents and when these negotiations fail, they file a patent infringement lawsuit against them. Furthermore, patent funds might cooperate with the operating company and target the rivals of the operating company on a downstream product market.³⁰⁶

Abusive patent enforcement strategies, in general, can be applied by any patent holder.³⁰⁷ NPEs may generate income by acquiring patents for the sole purpose of bringing infringement proceedings against alleged infringers without having any intention of producing or marketing the inventions to which the patents relate. In combination with the growing rate of patents, the operation of NPEs can be particularly harmful to SMEs, for whom the mere threat of litigation may be enough to persuade them to leave a market or desist from a particular line of research or development.³⁰⁸ Furthermore, smaller companies suffer most from the economic uncertainty that NPE suits bring. This is typically due to their lack financial resources to fight extended litigation battles.³⁰⁹

304 Jaeger 2016; Mylly 2017, pp. 1423–1424; McDonagh and Mimler 2017, pp. 159–179; Lamping and Ullrich 2018.

305 Rantasaari 2018, p. 173.

306 Geradin 2020, pp. 207–208; Rantasaari 2020, pp. 361–362.

307 Chien 2009 p. 1574; Strowel and Léonard 2020, p. 3; Rantasaari 2020, p. 361.

308 Pila and Torremans 2016, p. 125.

309 Harhoff 2009, p. 51.

NPEs are active, for example, in Germany, in the Netherlands and in the UK.³¹⁰ It is claimed that NPEs do not litigate against smaller companies. However, there is some evidence that start-up and growth companies are targets of European NPE litigation.³¹¹ In the US, start-up and growth companies constitute the majority of defendants in NPE suits.³¹² Small companies might also be the targets of patent suits as users of technology, for example in the US the Project Paperless, LCC sued small businesses due to their use of digital scanners.³¹³ However, the unitary system potentially offers wider patent protection and European SMEs will become more interesting targets in the future.³¹⁴ Furthermore, the uncertainty typical to any new court system will also attract NPEs.³¹⁵ It is hard to know the real activity of NPEs in Europe. There are two main reasons for this. First, NPEs do not necessarily litigate. NPEs rather threat to litigate and force defendants to settle. Second, the full business activities of NPEs are difficult to identify.

First, the tactic for NPEs is to threat to litigate. Start-ups and growth companies are more vulnerable targets of a threat of litigation as they have less capital and patent litigation is prohibitive. This increases pressure and gives strong incentive for settlements. The NPEs threaten impending costly litigation and then offer settlements with an escalating royalty or a licensing fee. Furthermore, an NPE might demand a company's equity.³¹⁶ The high costs and uncertainty of patent litigation, as well the costs of changing to alternative technology, in most cases force the targeted company to pay royalties or licensing fees to the NPE.³¹⁷

Licensing negotiations and license deals that do not result in litigation are almost always kept secret. Thus, patent litigation studies provides only partial information

310 Love, Helmers, Gaessler & Ernicke 2015; Darts-IP 2018. See also, for example, Feldman 2012; Fusco 2014. A good example of an active European NPE is the Marathon Patent Group purchasing hundreds of patents from the German based Siemens. See Ellis 2018.

311 Start-ups not currently targets of NPE litigation in Europe see for example, Heide, Fischer, Togt & Winnink 2016, p. 50; Thumm and Gabison 2016, p. 32. However, the report states that the unitary patent regime offers wider patent protection making European SMEs more interesting targets for NPEs in the future. For start-ups litigation in Europe, see, inter alia, a recent study by Darts-IP 2018, p. 10.

312 Companies with less than 10 million dollars in revenue accounted for 55 % of unique defendants. Based on the RPX Database. Chien 2012, p. 1. See also Lanjouw and Schanckerman 2001; Meurer and Bessen 2013.

313 Chien 2012, p. 4. See (US) Project Paperless, LCC v. Bluewave Computing, LLC et al., Georgia Northern District Court, 1:12-cv-00995 (2012).

314 Thumm and Gabison 2016, p. 32.

315 McDonagh 2016, p. 142.

316 Chien 2012, p. 11; Thumm and Gabison 2016, p. 5.

317 Mello 2006, p. 388 and 379; Ohly 2008, pp. 790–791; Fusco 2014, p. 444; Chien 2012, pp. 10–11; Rantasaari 2021, p. 362.

on the activities of NPEs.³¹⁸ However, an EU study based on public consultation and expert interviews gave some information. This study evaluated IP litigation cases. According to this study 12 % of the SMEs reported not fighting against the IP infringement. Bilateral negotiations were mentioned by 43 % and court procedures by 35 % of the SMEs. Other mentioned measures were mediation, arbitration and a request for the intervention of authorities.³¹⁹ Bilateral conversations and a quick settlement with the threat of litigation ending in a settlement are also of interest to the NPEs³²⁰

Second, the real definition of business activities is difficult to identify. Under most circumstances, a limited company is regarded as a separate legal entity and distinct from its shareholders. Therefore, although the limited company is liable for its actions, holding the owners or investors liable for the activities of the company is far more complicated. NPEs use shell companies for the specific purpose of shielding their owners or investors from liability. The use of shell companies means the creation of a corporate network that narrowly confines legal claims and provides a firewall to protect the larger company.³²¹ Intellectual Ventures for example has been identified as using more than a thousand shell companies when conducting its intellectual property acquisitions.³²² Organising business activities in this manner hides the identity and, therefore, it is difficult to obtain real evidence of NPE related litigation.

Even though the exact definition of NPEs is difficult, it often includes the idea that they do not manufacture the product based on the technology in question. In addition, the main revenue of NPEs comes from licensing, settlements or court judgments. Start-ups and growth companies have to face a variety of patent funds that focus their own business on patent-related transactions and the operation of NPEs can be particularly harmful for smaller companies. However, patent funds also bring opportunities for start-ups and growth companies. Patent funds support smaller companies by providing new ways to monetise patents. Start-ups and growth companies can for example sell and license their patents. The emerging patent market creates a demand for and transaction in patents and NPEs increase the value of patents. However, the patent enforcement system should have means to mitigate and balance the downside effects.

318 Lemley et al. 2019, pp. 101–102; Strowel and Léonard 2020, p. 3; Rantasaari 2020, p. 362.

319 European Commission 2017, p. 48.

320 Helmerts and McDonagh 2012, p. 5; Ewing and Feldman 2012, p. 24.

321 Ewing and Feldman 2012, pp. 37–38.

322 Ewing and Feldman 2012, p. 3.

4. SUMMARY AND CONTRIBUTION OF ANNEXED ARTICLES

The dissertation consists of the following three articles. This chapter includes the overall objectives and contributions of each article. Article I examines certain procedural safeguards that protect start-up and growth companies in European patent litigation when acting as defendants. Article II explores and compares the multiple defendant rule in the unitary patent regime with the Brussels I Regulation. Article III evaluates the abuse of patent enforcement and analyses the abuse of rights principle, the abuse of a dominant position, the IP Enforcement Directive and unjustified threats.

Full-length articles are provided as annexes to this dissertation.

4.1. Growth companies and procedural safeguards in European patent litigation

4.1.1 Objective and Content

Start-ups and growth companies are recognised as the drivers of growth in new, innovative and emerging areas; especially in those areas where agility is an advantage. One of the key expressed justifications of the unitary patent regime was to support SMEs by securing easier and wider access to patents for them.³²³ One potential concern related to the establishment of the unitary patent regime is the increasing litigation by the NPEs that exploit wider protection. The patent industry and legal scholars are concerned about the possibility of an increase in a NPE related litigation.³²⁴ Start-ups and growth companies might be targets of patent infringement suits as they may

323 Harhoff 2009, p. 51; Sterjna 2016.

324 IP2I is a coalition of innovative companies, who have directly experienced NPEs in the European environment. See < <http://www.ip2innovate.eu> > last accessed 31 January 2021. For legal scholars see for example Harhoff, 2009, p. 50; McDonagh 2014, p. 26; Heide, Fischer, Togt & Winnink 2016, p. 25; Thumm and Gabison 2016, pp. 55–56.

pay nuisance settlements regardless of the merits in fear of costly litigation.³²⁵ In general, smaller companies are more vulnerable targets of litigation and financially constrained having less capital.

The main objective of Article I “Growth companies and procedural safeguards in European patent litigation” is to study procedural safeguards from the perspective of start-ups and growth companies. In this study safeguards are understood as mechanisms that protect defendants against plaintiffs and make the enforcement mechanisms for the plaintiff weaker. In order to achieve the research objective, article I sets the following main research question: *Do the substantive patent norms of the unitary patent system provide safeguards for start-up and growth companies when acting as defendants?* To answer the research question, article I evaluates the procedural safeguards available for start-up and growth companies when accused of infringing the patent holder’s rights. The safeguards addressed in article I are fee shifting, preliminary injunctions, and bifurcation. Fee shifting, preliminary injunctions, and bifurcation have been presented in the legal literature as either preventing or increasing NPE litigation.³²⁶

Fee shifting points to a situation where the losing party has to pay the entire costs of the successful party. Fee shifting deters frivolous lawsuits and thus, is a pure safeguard. Preliminary injunctions and bifurcation, in contrast, increase frivolous lawsuits. Therefore, the main rule that initially allows preliminary injunctions and bifurcation needs exceptions. These exceptions to the main rule have the function of a procedural safeguard.

This article advances two arguments. Firstly, fee shifting can act as a safeguard for defendants. Secondly, preliminary injunctions and bifurcation need efficient exceptions to act as safeguards for defendants.

In order to answer the research question, two-sub-questions are introduced. As the first sub-question, the article asks what kind of exceptions the unitary patent system will provide for preliminary injunctions and bifurcation. As the second sub-question, the article asks do these safeguards reduce uncertainty from the start-up and growth companies’ point of view.

The New Institutional Economics (NIE) forms the theoretical basis for article I. Institutions interaction with organisational arrangements or organisations, namely start-ups and NPEs, form the focus of this article. Institutions are relevant

325 Chien 2014, p. 485.

326 Harhoff 2009; FTC 2011; Helmers and McDonagh 2012; Fusco 2014.

rules analysed in this article: the IP Enforcement Directive, the UPC Agreement, the UPC Rules of Procedure (RoPs) and the Rules of Fees and Recoverable Costs.³²⁷ As the UPC system is still evolving, it is necessary to analyse the current state of European patent litigation in key jurisdictions. These are Germany, the UK and the Netherlands. Furthermore, the organisational and procedural provisions of the UPC Agreement are inspired to a large extent by national judicial systems.

The article begins by analysing the European patent enforcement system, the unitary patent system and discusses the role of patent funds. Currently, there are national patents and European patents granted by the EPO. The unitary patent will provide an additional option for patent protection covering most EU countries with a single application.³²⁸ The current European patent system under the EPC is fragmented as the post-grant phase takes place at a national level. Hence, any infringement of a European patent is dealt with in accordance with national law.³²⁹ As a result, the unitary patent system seems to be a new beginning for the European patent system. This also makes the infringements proceedings more attractive as, for example, the threat of injunctions covers all European Union Members States that ratify the UPC Agreement. Patent funds that are litigation- oriented might take advantage of this new unitary patent regime.

Patent funds in general help to monetise patents by creating a secondary market for patents. Therefore, they have the role of an intermediary.³³⁰ This is essential for start-ups and growth companies as they often lack the financial and knowledge resources to monetise patents. Similar to venture capital funds, patent funds are generally structured as a limited partnership and collect funds from investors. The business model and revenue strategy of patent funds differ. In this article patent funds are divided into a portfolio building and a company financing. The patent funds that focus on building the IP portfolio were indentified as NPEs.

The article argues that start-up and growth companies might be the targets of NPE litigation. In general, smaller companies have less capital. This means that NPEs do not necessarily generate revenues through damage claims. Thus, NPEs threaten

327 Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights, OJ 2004 L 157 (the IP Enforcement Directive or the IPRED); the UPC Agreement; Rules of Procedure for the UPC the latest 18th version has been adopted by the Preparatory Committee in March 2017 (the UPC RoPs). The final draft on Rules on Court Fees and Recoverable Costs has been adopted by the Preparatory Committee in February 2016.

328 Articles 3 and 4 of Regulation No. 1257/2012/EU.

329 Article 64 of the EPC.

330 Yanagisawa and Guellec 2009, p. 8; Bader et al. 2011, p. 101.

smaller companies with expensive litigation and then offer a settlement with an escalating royalty or a licensing fee. Furthermore, an NPE might demand a company's equity.³³¹ In addition, small companies might also be targets of patent suits as users of technology.³³² Smaller companies typically lack financial resources to fight extended litigation battles. As a result, they suffer most from the economic uncertainty that NPE suits bring.³³³ At present, it seems that NPEs have not widely asserted patent suits against European SMEs. However, as NPEs that currently operate in the US explore more opportunities in Europe and the unitary patent regime offers wider patent protection, European SMEs might be more interesting targets in the future.³³⁴ Therefore, it is important to have safeguards when start-up and growth companies are involved in litigation as defendants. These safeguards should be effective, so that transaction costs are kept low. Patent suits in general are considered complex and associated with high transaction costs.³³⁵

In article I it is argued that fee shifting is a pure safeguard and therefore, deters frivolous suits by NPEs. However, the identification of the effect of frivolous suits is complex.³³⁶ In European jurisdiction, the IP Enforcement Directive, has harmonised some parts of the remedies. According to the IP Enforcement Directive, the unsuccessful party should pay reasonable and proportionate legal costs.³³⁷ Furthermore, fee shifting is familiar in the studied European countries and thus, is suitable for European jurisdictions. The Netherlands, the UK and Germany have own fee shifting rules, which have similar elements. The court may for example use discretion and consider proportionality. However, there are also differences in how costs are allocated between the parties. The scale of costs that the Preparatory Committee has presented resembles the value-based system of Germany. The scale of the costs means that the UPC could lower the ceiling for recoverable costs if the unsuccessful party is an SME.³³⁸ Fee shifting in the unitary patent regime has limitations and discretionary elements, such as proportionality, equity, and partial success.³³⁹

Furthermore, for start-up and growth companies, the fee shifting rules are inefficient if the NPE is incompetent to pay the adjudged legal costs. NPEs might use

331 Chien 2014, p. 473; Thumm and Gabison 2016, p. 5.

332 Chien 2014, p. 485.

333 Harhoff 209, p. 51.

334 Thumm and Gabison 2016, p. 32.

335 Harhoff 2009, p. 51; Ball and Kesan 2009, p. 5.

336 Rowe 1984; Eisenberg and Miller 2010; Helmers and McDonagh 2012; Liang and Berliner 2013.

337 Article 14 of the IP Enforcement Directive.

338 Rule 370 of the UPC RoPS.

339 Article 69 of the UPC Agreement

shell companies for the specific purpose of shielding their owners or investors from liability and thus, circumvent the fee shifting rule.³⁴⁰ This is particularly damaging for SMEs. SMEs may have to pay high filing fees to file a nullity suit to defend themselves. However, it cannot recoup those fees after winning due to the lack of funds. The circumvention of fee shifting is potentially prevented by lifting the corporate veil. Lifting a corporate veil in general means various ways courts ignore separate corporate personality and justify granting a remedy where the corporate entity is misused.³⁴¹

This article claims that preliminary injunctions increase frivolous lawsuits, and therefore, it needs to include exceptions to the main rule that initially allows preliminary injunctions. Under the unitary patent regime, it will be possible for NPEs to be granted European wide patent protection, and therefore also the possibility to obtain a European wide preliminary injunction. The possibility to obtain a wide injunction could attract abusive litigation by NPEs and further promote unjustified settlements. Preliminary injunctions are highly effective remedies.³⁴² A preliminary injunction permits patent holders to ban unlicensed products containing the patented technology from the marketplace. The plaintiff may request preliminary injunctions to avoid irreparable harm. However, the plaintiff's intention may also be to harass and to impose financial stress on their rivals. This might be a particularly effective threat to use against start-up and growth companies that have often less capital. Preliminary injunctions are used by NPEs to increase their bargaining power by preventing allegedly infringing product sales in order to achieve greater licensing or settlement fees.³⁴³

According to the UPC Agreement, preliminary injunctions may be used.³⁴⁴ Therefore, the use of preliminary injunctions depends on the interpretation of the word *may*. The right to prevent the use of the invention without the consent of the patent proprietor is seen as the core right of the patentee. This could strengthen the argument that only under very exceptional circumstances will the UPC Agreement use its discretion and does not implement such an order in most instances.

When considering the countries researched, preliminary injunctions are allowed, and are mostly used in the Netherlands, but not in Germany or in the UK. In Germany, the granting of preliminary injunctions is relatively rare due to the overall

340 Ewing and Feldman 2012, pp. 37–39.

341 Ottolenghi 1990; Strasser 2005.

342 Leubsdorf 1978, p. 525; Lanjouw and Lerner, 2001, p. 574.

343 Lanjouw and Lerner, 2001, p. 573 and 601.

344 Article 62 of the UPC Agreement.

speed of regular patent infringement proceedings. Moreover, in the UK, preliminary injunctions are rarely granted due mainly to the existence of the clearing the way doctrine. This could lead to the conclusion that preliminary injunctions are not often allowed if the infringement proceedings are sufficiently rapid or there are other possibilities, similar to the clearing the way doctrine in the UK. The speed of the unitary patent regime remains to be seen when the UPC starts to operate. The option for bifurcation might accelerate the infringement proceedings similar to those in Germany, but at the same time bifurcation might be disadvantageous to start-up and growth companies mainly due to the costs.

When granting preliminary injunctions, the UPC has to evaluate the interest of the parties and take into account the potential damage to either of the parties resulting from the granting or refusal of the injunction.³⁴⁵ The principles of fairness and equity increase the discretionary power of the UPC. In addition, preliminary injunctions should not disturb competition.³⁴⁶ The weighting of interests could be beneficial for start-up and growth companies. Weighting of interests and an issue-based approach allows the UPC to consider whether the plaintiff actually practices the invention. This empowers the UPC judges for example to consider the principles of fairness and equity with respect to possible abusive litigation by NPEs.

In a bifurcated legal system, separate courts decide on infringement and validity independently from one another. Bifurcation increases frivolous lawsuits, and therefore, it needs exceptions to the main rule that initially allows bifurcation.³⁴⁷ Bifurcation is used in a few European countries, including Germany, Austria, and Hungary. Separate patent revocation proceedings increase the cost and the length of disputes and these additional costs are more difficult for SMEs than larger companies. However, it allows for example fast assessment of infringement claims and enables the specialisation of courts. This in turn increases legal certainty regarding the validity of patents.³⁴⁸ The unitary patent regime allows bifurcation when hearing infringement and validity cases. However, the unitary patent regime contemplates discretionary bifurcation. The UPC Agreement gives local or regional courts discretion to refer counterclaims for revocation.³⁴⁹ When making such a decision, the division concerned must take into account all the relevant circumstances of the case. This include the principles of proportionality, flexibility, fairness, and equity. There should be a

345 Articles 62(1) and 62(2) of the UPC Agreement.

346 Articles 42 and 62 of the UPC Agreement.

347 McDonagh 2016, p. 142; Thumm and Gabison 2016, p. 41; Wadlow 2015, p. 39.

348 Cremers, Ernicke, Gaessler, Harhoff, Helmers, McDonagh, Schliessler & van Zeebroeck 2013, p. 10.

349 Article 33(3) of the UPC Agreement.

fair balance between the legitimate interests of all parties.³⁵⁰ Furthermore, bifurcation has strict time-limits.³⁵¹

4.1.2. Main Contributions

These studied arguments seem to be valid. Thus, the studied procedural safeguards provide support for start-up and growth companies and therefore, make the enforcement mechanism for the plaintiff weaker.

The first argument claimed that fee shifting acts as a safeguard. It seems that the fee shifting alone would not be efficient as a safeguard, but fee shifting combined to the high likelihood of losing a case seem to efficiently prevent NPE litigation. Therefore, the high quality of unitary patents that cannot be easily revoked is essential. Fee shifting suits well with European jurisprudence. The main rule of fee shifting is clear. However, an application of fee shifting is more complicated and the allocation of costs is determined by the UPC to a certain extent. Therefore, the UPC could also potentially apply a more issue-based approach, as the UK and the Netherlands have done. For start-up and growth companies it is important to have an issue-based approach where, for example, the type of economic activity or the partial success is considered to be at the discretion of the UPC. Hence, it is possible to lower or raise the ceiling of the recoverable costs on the basis of the economic activity if another party is an NPE.

However, NPEs might use for example shell companies to shield their owners or investors from liability. In this respect lifting the corporate veil potentially prevents the circumvention of fee shifting. The veil could be extended so that imposes the responsibility upon the shareholders or is extended to a cluster of companies. It seems that lifting the corporate veil in order to avoid the legal costs is compatible with the European legislative environment.

The second argument claimed that exceptions are needed to the main rule that allows preliminary injunctions and bifurcation. The UPC Agreement offers such exceptions. Preliminary injunctions are optional. The principle of fairness and equity increase the discretionary power of the UPC. Furthermore, the UPC can evaluate the interests of parties. Weighting of interest and an issue-based approach allows the UPC to consider whether the plaintiff actually practices the invention. Bifurcation is optional, has time limits, and discretionary elements. There is also the possibility of protective measures that might soften the effects of bifurcation. In all the studied

350 Articles 41, 42 and 52(1) of the UPC Agreement.

351 Article 33(6) of the UPC Agreement.

safeguards there is a potential inconsistency in the relevant definitions and clarifications are left for the discretion of the UPC.

4.1.3 Recent Developments

After Article I was published there have been some developments that are briefly discussed here. First, the unitary patent regimes' date for the entry into force of the UPC Agreement is unclear. The FCC has delayed Germany's ratification of the bill concerning the UPC Agreement. The UK has recently announced it will not be a member of the UPC system. Hence, it remains to be seen what the future of the Unitary Patent Regime will be. In any case, there will be more delay in its entry into force.

Second, the German Federal Ministry of Justice and Consumer Protection have published a draft act to modernise German patent law. The draft for example addressed the problem of bifurcation by stating that the patent infringement proceedings are faster than parallel invalidity proceedings. Hence, an injunction may be issued in first instance infringement proceedings before a decision on the validity of the patent proceedings can be obtained. The draft act to modernise German patent law seeks to improve the coordination between infringement and invalidity proceedings by having the Federal Patent Court provide a preliminary assessment of patent validity quickly. In such a preliminary assessment, an infringement court may then stay infringement proceedings until a decision about the parallel invalidity proceedings is achieved.³⁵²

4.2 The European multiple patent defendants rule as a legal constraint for start-ups and growth companies

4.2.1 Objective and Content

Even though European patent enforcement is currently predominantly a national matter, EU law and the CJEU case law have an impact on multinational patent infringement proceedings in Europe. In a European patent infringement context, this

352 Holzapfel 2020; Cotter 2020.

means the application of the Brussels I Regulation.³⁵³ After the unitary patent regime enters into force, it will also include the multiple defendants rule. New patented technologies are able to function simultaneously in a number of countries, causing an increasing number of cross-border cases in European courts.³⁵⁴ Moreover, the unitary patent regime will lead to unitary patents covering most EU countries with a common enforcement mechanism. These phenomena enable the multiple defendants rule to become more significant.

The aim of Article II “The European multiple patent defendants rule as a legal constraint for start-ups and growth companies” is to compare the multiple defendants’ rule in the unitary patent regime with the Brussels I Regulation, and to explore how the multiple defendants rule works under the unitary patent regime for start-up and growth companies. The multiple defendants rule in general means that patent infringement performed in a uniform manner in multiple countries is pursued as a single case in a single court. The article II evaluates the current Brussels I Regulation, the relevant case law of the CJEU and the unitary patent regime from this perspective. In addition to the European-level developments, case law from Germany, the Netherlands and the UK is utilised. New Institutional Economics (NIE) will form the theoretical basis of the article. Institutions evaluated in this article, the UPC Agreement and Brussels I Regulation, impose legal constraints for start-ups and growth companies. This article studies the characteristics of those constraints.³⁵⁵ Institutions are understood as constraints that give a structure to the relationships between society and organisations with others. However, constraints can limit companies’ growth, for example the ability to defend their rights, when not functioning effectively and achieving intended goals.³⁵⁶

The research question of the study is the following: *How does the multiple defendants rule work under the unitary patent regime for start-up and growth companies?* In order to answer the research, question the article II advanced three arguments. First, the multiple defendants’ rule in general is cost-efficient for start-up and growth companies. Secondly, the multiple defendant rule under the unitary patent regime

353 Regulation (EC) No. 22/2001 of the European Parliament and of the Council of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, OJ L 12/1, replaced by the recast version Regulation (EU) No 1215/2012 of the EP and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, [2012] OJ L351/1 (Brussels I Regulation).

354 See, for example Commission Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and of the Council on the enforcement of intellectual property rights COM (2017) 708 final, p. 28; Romandini and Klicznik 2013, p. 527.

355 The IP Enforcement Directive; the UPC Agreement.

356 North 1990, p. 36.

reduces complexity in comparison with the Brussels I Regulation rule. Thirdly, the multiple defendants' rule has features that prevent abusive behaviour by NPEs. One potential concern related to the multiple defendants' rule is the increasing abusive litigation by NPEs. NPEs are interested in suing multiple defendants due to the cost-efficiency.

The article II starts by discussing the territorial aspect of cross-border patent enforcement. In the European context this means that once the EPO has granted and validated a patent, it is subject to the laws and procedures of the state where it applies. Due to this the patent system is unsuitable for the purpose of cross-border exploitation.³⁵⁷ Hence, laws and their applications are partly unfit due to the growing interdependence among different actors in different countries within the patent field.

The cross-border exploitation of patents has increased. There are two main reasons for this: fast technological development and the high degree of connectivity in numerous fields of technology.³⁵⁸ As a corollary, there are more situations where the alleged infringement or the location of the parties is geographically distributed in more than one European jurisdiction. Multiple parties, for example, can infringe the patent in different countries by acting in a similar way and selling the same part of the patent or by selling different parts of the patent. Cloud computing claims illustrate this well.

Next, the article II discusses different patents in Europe and their jurisdiction. The complexity of patent enforcement is increased by the co-existence of different patents: national patents and European patents (EP). After the unitary patent regime becomes operational, there are four different ways of protecting a patent: national patents, EPs outside the scope of the UPC, EPs within the UPC and the EPO granted European Patents with unitary effect (UP). Fragmented enforcement is complex and increases transaction costs. Furthermore, litigation in a number of countries may lead to case duplication and divergent outcomes.³⁵⁹

The article II argues that there is a correlation between the multiple defendant rule and transaction costs. European patent enforcement implies that patents need to be enforced or challenged in proceedings in the national courts of different European Union Member States. Fragmented enforcement is complex and increases transaction costs. Overall, transaction costs associated with patent enforcement have a major

357 Trimble 2012, p. 12; Dinwoodie 2009, pp. 716–717.

358 Galli and Gevovich 2012, p. 675; Min and Wichard 2017, pp. 687–688.

359 Cremers, Ernicke, Gaessler, Harhoff, Helmerts, McDonagh, Schliessler & van Zeebroeck 2013, p. 60; Harhoff 2009, p. 15.

impact on the ability to start-ups and growth companies to defend their patents. A plaintiff might choose to file against a number of defendants in the same case for a variety of reasons. The intention of the plaintiff might be to reduce its enforcement costs, or to increase the pressure for settlements.³⁶⁰ From the defendant's perspective, participating in a lawsuit involving multiple defendants leads to cost-sharing and makes the case more complex, simply because there are more parties involved. Furthermore, defendants might be competitors of one another and therefore, there is a need to control the disclosure and use of companies' confidential information.³⁶¹

For start-ups and growth companies as plaintiffs, in general the intention to file against a number of defendants is to reduce enforcement costs. Cost-efficiency is essential as small companies often have less capital than large companies. In addition, with small companies, the cost-efficiency attracts other plaintiffs such as NPEs. Start-ups and growth companies are more vulnerable targets of NPE litigation as patent litigation in general is prohibitive. This increases pressure for settlements. Thus, the use of multiple defendant rule might also be abusive and grant NPEs the opportunity to sue multiple defendants at the same time due to cost-efficiency.

Next, the article evaluates and compares the current Brussels I Regulation and the UPC Agreement. Article 6(1) of the Brussels I Regulation provides that patent infringement performed in a uniform manner in a number of countries at the same time is pursued as a single case in a single court.³⁶² In *Roche Nederland*, the CJEU ruled for the first time in a case hearing European patent cases collectively.³⁶³ For the multiple defendants rule to apply, the risk of irreconcilable judgements is the main criteria. In the assessment of this risk, the claims must be closely connected, in practice, there must be the same legal situation and the same factual situation. These two are evaluated as principal factors.³⁶⁴ The CJEU referred to Article 64(3) of the EPC. According to that article, any infringement of a European patent should be addressed by using the national law.³⁶⁵ Therefore, the infringement of the different parts of a European patent has to be examined in the light of the relevant national law in force in each of the states for which it has been granted. Furthermore, the defendants were

360 Bessen, Meurer & Ford 2011, p. 31.

361 Eckstein and Buroker 2018.

362 Article 6(1) of the Brussels I Regulation.

363 Case C-539/03 *Roche Nederland BV et al. v Frederick Primus and Milton Goldenberg*, EU:C:2006:458.

364 Case C-539/03 *Roche Nederland BV et al. v Frederick Primus and Milton Goldenberg*, EU:C:2006:458, para 26; Case C-98/06 *Freeport plc v Olle Arnoldsson*, EU:C:2007:595, para 40.

365 Article 64(4) of the EPC. See also Case C-539/03 *Roche Nederland BV et al. v Frederick Primus and Milton Goldenberg*, paras. 29, 30.

different even though the defendant companies belonged to the same group or had acted in a similar manner in accordance with a common policy elaborated by one of them. In *Solvay* infringement refers to the same national part of the European patent in the same country acting in an identical way.³⁶⁶ The evaluation of the same legal and the same factual situation has moderated over the years and for example, the core of the assessment is a balance that has to be decided by the national judge.³⁶⁷ However, the CJEU does not define how the balancing exercise should be done.

The CJEU has denied cross-border patent enforcement and consolidation of proceedings in one forum and thus, reinforced the territoriality principle. An infringement of the different parts of a European patent has to be examined in the light of the relevant national law in force in each of the states for which it has been granted. Therefore, European multiple national patent rights are de facto unenforceable. Currently, European courts can continue to grant cross-border injunctions only as provisional measures.³⁶⁸ However, a functional multiple defendants' rule is essential for start-up and growth companies. For an individual or a small company, it would be impossible to file a lawsuit in multiple countries at the same time due to the high transaction costs. In addition, legal uncertainty increases for the patent owner due to the complexity of the multiple defendants' rule under the current Brussels I Regulation.

The UPC Agreement has set certain criteria on the joining together of multiple defendants. First, the defendants have to have a commercial relationship. Second, the action has to relate to the same alleged infringement.³⁶⁹ The term *commercial relationship* is not defined in the UPC Agreement. There is no definition in EU company law either. It is obvious that the criterion of commercial relationship in the UPC Agreement is not met if the defendants have acted independently and without knowledge of each other. Whereas it seems to be unclear whether the defendants actually have to belong to the same group of companies. The term commercial relationship seems to indicate that there is no such a requirement. However, the criterion of the commercial relationship in the UPC Agreement means a linkage between the anchor defendant and the co-defendants, for example collaboration in a joint infringement.³⁷⁰ In addition to the demand for a commercial relationship, the action

366 Case C-616/10 *Solvay SA v Honeywell Fluorine Products Europe BV and Others et al.*, EU:C:2012:445, paras 24, 26, 27, 30.

367 Case C-145/10 *Eva-Maria Painer v Standard Verlags GmbH and Others*, EU:C:2011:798 Case C-145/10, paras 80, 81, 83. See also Case C-98/06 *Freeport plc v Olle Arnoldsson*, EU:C:2007:595.

368 Article 35 of the Brussels I Regulation.

369 Article 33(1)(b) of the UPC Agreement.

370 Larsen 2017, p. 750; Fawcett and Torremans 2011, p. 5.143.

has to relate to the same alleged patent infringement. This requirement is similar to the requirement of the substantially identical law. Therefore, the infringement has to relate to the same patent, or the patent family. In the UPC Agreement, the same alleged infringement is met due to the unitary character of the UP. However, claims have a special importance in infringement proceedings by defining the patented invention and its scope.

4.2.2 Main Contributions

The main conclusion of the article II is that under the unitary patent regime the application of the multiple defendants' rule seems to be an accessible enforcement mechanism for start-ups and growth companies. The multiple defendant rule under the unitary patent regime clarifies the complexity. This article evaluated cost-efficiency, complexity, and abusive litigation threats by NPEs from the perspective of the unitary patent regime and smaller companies. The tested arguments seem to be valid.

The first argument claimed that the multiple defendant rule is cost-efficient for start-up and growth companies. Transaction costs are lowered as there is a real option to consolidate infringement proceedings in one court. From the defendant's perspective, the multiple defendant rule increases complexity, but it also leads to cost-sharing and thus, transaction costs are lowered. For plaintiffs, the multiple defendant rule provides cost-efficiency.

The second argument claimed that the multiple defendant rule under the unitary patent regime clarifies the complexity. Therefore, the definition under the UPC Agreement is less ambiguous. The limitations on the joining of multiple defendants are different when comparing the Brussels I Regulation with the UPC Agreement. The same identical law is fulfilled due to the unitary character of the UP. The Brussels I Regulation requires acting within a common policy elaborated by either of these organisations. The current CJEU practice has been strict in interpreting what it means to act in accordance with a common policy elaborated by one of these organisations. The scope of the definition that the UPC Agreement provides seems to be broader and it requires a commercial relationship between the defendants. The definition of the commercial relations means a linkage between defendants. However, it also leaves room for judges from different European legal traditions to interpret the multiple defendant rule from their own national perspective.

The third argument claimed that the multiple defendant rule prevents abusive behaviour by NPEs. From the plaintiff's perspective, there is a potential threat that unrelated start-ups and growth companies will be sued by NPEs. For this particular matter, the UPC Agreement provides a safeguard as the requirement of the commercial

relationship makes directing NPE lawsuits at multiple unrelated defendants impracticable. This only applies to lawsuits directed to multiple unrelated defendants. Hence, the NPEs still have the opportunity to file for patent infringements, but only in cases where defendants are related. However, there are other grounds of jurisdiction which might be abusively used by an NPE.

4.2.3 Recent Developments

Uncertainties related to the unitary patent regime mean that the complexity of the multiple defendant rule remains. Hopefully when the UPC starts to operate, the CJEU will adopt a more flexible interpretation of Article 8(1) of the Brussels I Regulation when applied to IP infringement cases, and the interpretation of the multiple defendant rule between the UPC Agreement and the Brussels I Regulation will resemble each other. This would answer most of the questions that remain currently unclear and unanswered. However, for the time being we are uncertain when the UPC will start to operate. In addition, some fundamental questions remain unanswered, such as: How many countries and how many influential patent markets will eventually join the unitary patent regime?

4.3. Abuse of Patent Enforcement: How Can Start-ups and Growth Companies Fight Back?

4.3.1 Objective and Content

The aim of Article III “Abuse of Patent Enforcement: How Can Start-ups and Growth Companies Fight Back?” is to examine whether smaller companies have any adequate measures to defend themselves against abusive claims. Patent holders can assert their patents inappropriately, thus going against the functions of patents, and going outside the claims and boundaries of what is protected. This is more damaging for smaller companies as they have fewer financial resources. As a corollary, it is necessary for start-ups and growth companies to be able to defend themselves against abusive claims.

Article III evaluates the abuse of patent enforcement and analyses the abuse of rights principle, the abuse of dominant position, the IP Enforcement Directive and unjustified threats.³⁷¹ The question arises of *whether the abuse of rights the abuse of*

371 Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights, OJ 2004 L 157 (the IP Enforcement Directive or the IPRED).

dominant position, the IP Enforcement Directive and unjustified threats provide tools for start-ups and growth companies when acting as defendants in patent infringement cases that could be considered abusive. The article analyses whether these elements provide tools for start-ups and growth companies when acting as defendants in patent infringement cases that could be considered abusive. Abuses of rights are strategies of illegitimate exploitation of an existing legal position.³⁷² For patent holders the use of patents may be abusive if the initial objectives of the patent system are not followed.³⁷³ Abusive purposes decrease legal certainty and cause increasing transaction costs and, for example, deter or delay companies' entry into markets.³⁷⁴ Hence, it is essential to provide tools for start-ups and growth companies that are facing abusive claims or a threat of litigation.

The article III starts by analysing the abuse of patent enforcement and presents NPEs as an example of abusive practices. Abuse of patent enforcement typically relates to situations when an invalid patent is asserted or there is no patent infringed. In addition, right holders may attempt to extend the actual scope of protection and to weaken the competitor's market position. Furthermore, excessive remedies might lead to the abuse of enforcement.³⁷⁵ Various changes in the market and legal environments have accelerated rent-seeking activities and abusive patent litigation. There are several reasons for this, such as, the increase in the number of patents, the fact that patents are becoming more valuable, the emergence of a growing market for the sale of patents and the introduction of new entities specialised in patent licensing and litigation.³⁷⁶ In addition, an increasing number of products incorporate a combination of multiple components and each of these components may be subject to one or more patents. This leads to product holders constantly being subject to patent disputes.³⁷⁷

Next, the article III analyses the abuse of rights principle in the CJEU case law and in the European Union Member States' national practices. The doctrine of abuse has been codified, for example in Germany and in the Netherlands. In Common law systems, there is no general recognition of the principle of the prohibition of the abuse of rights. The CJEU has developed the abuse of rights doctrine as a general principle since the *Van Binsbergen* case, concerning the freedom to provide

372 Saydé 2014, pp. 29–30. See also Lenaerts 2010, pp. 1127–1122; Léonard 2016, p. 2.

373 Love 2015, p. 1; Strowel and Léonard 2020, p. 1.

374 For an analysis, see Meurer 2003, p. 519 and 521.

375 Kesselheim 2007, p. E307–E308; Hilty and Lui 2011, p. 25; Hilty 2015, pp. 381–382.

376 Meurer 2003, pp. 519–520.

377 Lemley and Shapiro, 2007, p. 1992.

services.³⁷⁸ Thereafter, the idea of restricting abusive practices has been adopted by other areas of EU law.

The formal doctrine of the abuse of rights was developed by the CJEU in *Emsland-Stärke*.³⁷⁹ The first objective test focused on the purpose of the right, and the second subjective test focused on the intention of the party.³⁸⁰ An abuse requires a combination of objective circumstances in which, despite the formal observance of the conditions laid down by the Union rules, the purpose of those rules has not been achieved.³⁸¹ The subjective part consists of the intention to obtain an advantage and seeks to determine whether the legal norm's conditions of application have been fulfilled artificially, and whether such an act is compatible with the purpose of the legal regime affected.³⁸² The objective part resembles the teleological method of interpretation and requires the Court to pronounce on the purpose of a given rule.³⁸³ The artificiality test enquires into the economic reality of the transaction. Hence, if the transaction has some genuine economic explanation other than the regulatory benefit claimed, it is not artificial.³⁸⁴

Abuse of rights is formally exercised in conformity with the conditions laid down in the rule granting the right, whilst the legal outcome is against the objective of that rule. Often a doctrine of abuse is associated with situations where there is no visible infringement of a formal legal requirement. Thus, the principle of the prohibition of the abuse of rights functions as a corrective mechanism and has an interpretative function that ensures the underlying objectives or purposes of the rules are being respected.³⁸⁵ It is for the national court to establish the existence of the objective and

378 Case C-33/74 *Van Binsbergen v Bestuur van de Bedrijfsvereniging voor de Metaalnijverheid*, ECLI:EU:C:1974:313.

379 Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*, ECLI:EU:C:2000:695

380 Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*, ECLI:EU:C:2000:695, paras 52 and 53. See also Joined Cases C-116/16 and C-117/16 *T Skatteministeriet v T Danmark and Y Denmark Aps*, ECLI:EU:C:2019:135, para 74.

381 Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*, ECLI:EU:C:2000:695, para 52. In addition, see for example Case C-206/94 *Brennet AG v Victoria Paletta*, ECLI:EU:C:1996:182, para 25; Case C-212/97 *Centros Ltd v Erhvervs- og Selskabsstyrelse*, ECLI:EU:C:1999:126, para 25.

382 Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*, ECLI:EU:C:2000:695, para. 52 and 53. See also Case C-255/02 *Halifax plc, Leeds Permanent Development Services Ltd., County Wide Property Investments Ltd v Commissioners of Customs & Excise*, ECLI:EU:C:2006:121, paras 81 and 82.

383 Snell 2011, p. 220; Saydé 2014, p. 93.

384 Saydé 2014, p. 89.

385 Drexel 2008; Lenaerts 2010, p. 1122; Strowel and A Léonard 2020, p. 14

subjective elements, whether the application of the rule would serve its purpose and whether reliance on the rule would be abusive in certain circumstances.³⁸⁶

After the abuse of rights principle, the article III evaluates the abuse of dominant position. The term abuse appears in the context of a dominant position as part of EU competition law and applies to patent-related activities. Litigation instigated by a dominant undertaking can be considered abusing a dominant position under Article 102 the Treaty on the Functioning of the European Union (the TFEU) when the abuse occurs within the internal market or in a substantial part of it and the possibility that trade between Member States has been affected. Abusive litigation commenced by a dominant undertaking goes back to the *ITT Promedia* decision.³⁸⁷ In addition, the *Astra Zeneca* and *Huawei Technologies v ZTE* addressed abusive litigation from their own perspectives.³⁸⁸ The *Astra Zeneca* case addressed the misuse of enforcement procedures and *Huawei Technologies v ZTE* was concerned with standard essential patent (SEP) disputes.

The access to the Court is a fundamental right. It is also a general principle ensuring the rule of law. Hence, only in wholly exceptional circumstances are the legal proceedings capable of constituting an abuse of a dominant position within the meaning of Article 102 of the TFEU.³⁸⁹ The Commission established the presence of wholly exceptional circumstances with the help of two cumulative criteria that have been confirmed by the General Court. First, the action cannot reasonably be considered an attempt to assert the rights of the undertaking concerned and legal proceeding only serve to harass the opposing party. Second, the aim of the action must be to eliminate competition. Both criteria must be fulfilled in order to establish an abuse.³⁹⁰

The first cumulative criterion means that the action must be from an objective view manifestly unfounded.³⁹¹ This first cumulative criterion has a broad concept *manifestly unfounded*. This leaves much room for interpretation.³⁹² According to the second cumulative criterion, the litigation must be planned to have a goal of

386 Vogenauer 2011, p. 543. See also Case C-8/92 General Milk Products GmbH v Hauptzollamt Hamburg-Jonas, ECLI:EU:C:1993:82, para. 21; Case 110/99 Emsland-Stärke v Hauptzollamt Hamburg-Jonas, ECLI:EU:C:2000:695, para 54.

387 Case T-111/96 ITT Promedia NV v Commission, ECLI:EU:T:1998:183.

388 Case C-457/10 P AstraZeneca v Commission, ECLI:EU:C:2012:770; Case C-170/13 Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH, ECLI:EU:C:2015:477.

389 Case T-111/96 ITT Promedia NV v Commission, ECLI:EU:T:1998:183, para 60.

390 Case T-111/96 ITT Promedia NV v Commission, ECLI:U:T:1998:183, paras. 55 and 56.

391 Case T-111/96 ITT Promedia NV v Commission, ECLI:EU:T:1998:183, para 56.

392 Moritz 2013, p. 239.

eliminating the competition.³⁹³ The objective nature of the concept of abuse means interpretation that a dominant undertaking has special responsibility not to further hinder the entry of competitors to a market and to weaken the competition.³⁹⁴ It is difficult to distinguish between abusive and non-abusive litigation by a dominant undertaking without resulting in subjective concepts such as the intention of the dominant undertaking. In the *AstraZeneca* case, a pharmaceutical company had withdrawn registration for a product in a specific form and at the same obtained registration for the same product in a slightly different form. This strategy was aimed at delaying the entry of generic producers and parallel traders.³⁹⁵ This leads to consider the subjective intentions such as withdrawing and obtaining regulatory approvals without any false statement or other misrepresentation towards the regulatory body.³⁹⁶

The third element evaluated was the IP Enforcement Directive. Article 3(2) demands that states take appropriate measures, procedures and remedies against the abuse of enforcement procedures.³⁹⁷ In a recent copyright case *Bastei Lübbe* the CJEU ruled that the Member States should provide effective and dissuasive measures, procedures and remedies in respect of infringements of copyright and related rights.³⁹⁸ In a copyright case *Stowarzyszenie 'Olawska Telewizja Kablowa'* a loss calculated on the basis of twice the amount of the hypothetical royalty clearly exceeds the loss actually suffered. As a corollary, a claim to that effect could constitute an abuse of rights.³⁹⁹ So far, the IPRED has been applied to cases evaluating remedies and, in this context, objectivity is the relevant criteria.⁴⁰⁰

The fourth dimension evaluated was unjustified threats; this refers to the situation in which the alleged infringing act falls, for example, outside the scope of the claim or because the patent is invalid meaning that enforcement proceedings are abused. Unjustified threat is an affirmative defence. A patent holder sends warning letters to the manufactures or commercial distributors concerning alleged goods

393 Case T-111/96 *ITT Promedia NV v Commission*, ECLI:U:T:1998:183, para. 55 and 56.

394 See for example Case C-457/10 P *AstraZeneca AB and AstraZeneca Plc v European Commission*, EU:C:2012:770, para. 134; Case T-111/96 *ITT Promedia NV v Commission*, EU:T:1998:183, para. 138; Case 85/76 *Hoffman- La Roche & Co AG v Commission*, EU:C:1979:36, para. 91

395 Negrinotti 2008, p. 296.

396 Moritz 2013, p. 239.

397 Article 3(2) of the IP Enforcement Directive.

398 See C-149/17 *Bastei Lübbe GmbH & Co. KG v Michael Strotzer*, EU:C:2018:841, para 37.

399 See Case C-367/15 *Stowarzyszenie 'Olawska Telewizja Kablowa' w Olawie Stowarzyszenie Filmowców Polskich w Warszawie*, EU:C:2017:36, para 31.

400 Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*, EU:C:2000:695, para 53.

infringements, and it later turns out there was no infringement, or the patent was invalid. The idea behind these warning letters is to threaten with infringement action unless the allegedly infringing behaviour stops. Unjustified threats are mentioned in the Paris Convention that prohibits false allegations in the course of trade of such a nature as to discredit the establishment, the goods, or the industrial or commercial activities of a competitor.⁴⁰¹ The Paris Convention therefore requires protection against the use of unjustified threats in infringement proceedings. In Europe, the law in this area is not harmonised. A threat allows the addressee to join a pending opposition or appeal proceedings before the European Patent Office (EPO).⁴⁰² The IPRED does not address unjustified threats or warning letters. In some jurisdictions, unjustified threats or warning letters are implemented through domestic law and used as a basis for the action.⁴⁰³ The UK has a specific threat provision addressing unjustified threats to patents. In Germany and the Netherlands groundless threats are addressed as an aspect of the general tort law or through unfair competition law.

4.3.2 Main Contributions

The article argues that the studied elements the abuse of rights principle, the abuse of a dominant position, the IPRED and unjustified threats mitigate the potential ill effects of abusive legal proceedings to a certain extent. However, there are limitations, and, in addition, national practises vary. The outcome is that these legal tools are rather complicated for start-ups and growth companies to apply.

The general prohibition of the abuse of rights means that the issue of the abuse of rights is addressed through general legislation. However, it seems rather impracticable that a court would apply such general provisions in the case of an abusive exertion of an IP right. For example, those Civil Law countries that lack balancing instruments of equity might face difficulties making use of such unspecified legislation.⁴⁰⁴

The *ITT Promedia* decision, the *Astra Zeneca* and *Huawei Technologies v ZTE* all addressed abusive litigation from their own perspectives. The doctrine of abuse covers abusive claims when there is a visible infringement of the law such as the infringement of Article 102 of the TFEU. One indicator is that the legal proceeding causes distress to the opponent. The most obvious example of such a situation seems to be a situation where the dominant undertaking has wilfully enforced a patent

401 Article 10bis 3 ii of the Paris Convention for the Protection of Industrial Property (20 March 1883) 1160 UNTS 231 (as revised).

402 Article 105 of the European Patent Convention

403 Brack 2006 p. 31; Heath 2008, p. 308.

404 Hilty 2015, p. 391.

knowing that the patent is invalid, or the patent is stretched to cover activities outside the granted scope. Hence, the subjective part is central to the analysis. However, although two cumulative criteria provide a good starting point for an analysis of abuse of process by dominant undertaking, several questions remain open, such as the concept of being manifestly unfounded and the requirement of proof that the litigation is baseless. This also increases uncertainty in the application of the abuse of rights principle and creates opportunities for alleging an abuse of a dominant position limited in national courts; thus, making national doctrines of abuse more relevant.

Under the IPRED and abuse of enforcement, the subjective intention could play a role when remedies for example are evaluated under the IPRED. There is even institutional support for this as the division into the intentional and unintentional character brings the definition of the abuse closer to the doctrine of the abuse of rights developed by the CJEU and to the subjective criteria.

In relation to unjustified threats, a defendant should be able to bring an action for the inappropriate use of IP rights, rather than having to wait to be sued for infringement as a defence. There are differences between the examined EU member States as regards addressing unjustified threats in legislation, cases, and approaches. These national differences make the threshold for a reaction to unjustified threats by start-ups and growth companies very high. A company that asserts its patent rights at a European level must consider the unjustified threat element on a case-by-case basis in each jurisdiction. This increases the costs of the transaction. Even though there is no harmonisation addressing unjustified threats in Europe the essential aim of benefiting from an improper advantage lies behind the unjustified threats and warning letters. This resembles the CJEU case law under the abuse of rights doctrine. Hence, there are similarities that could have relevance in national jurisdiction.

The third article claims that start-ups and growth companies evaluated elements can act as a safeguard for start-ups and growth companies and make the enforcement mechanisms for the plaintiff such as NPE weaker. The abuse of rights principle alters abusive claims into a legal constraint that can be defended in different forms. The opportunistic angle of patent claims leading to patent holders inappropriately asserting their patents lowers the legal certainty. Hence, the abuse of rights principle applied to the patent enforcement by means of the abuse of dominant position, the Enforcement Directive and unjustified threats protects start-ups and growth companies from this inappropriate behaviour and promotes legal certainty.

However, all three elements have limitations and uncertainties. First, the abuse of a dominant position under Article 102 of the TFEU applies only to a situation where the plaintiff is a dominant undertaking and has a sufficient market power. The CJEU

case law related to abusive litigation in EU competition law is limited and to a certain extent applies to specific situations such as the misuse of enforcement procedure and SEP (standard essential patent) disputes. Second, the abuse under the IPRED applies to remedies according to CJEU case law. Third, the unjustified threats seem to be rather complex for start-ups and growth companies due to the lack of harmonisation at the EU level.

4.3.3 Recent Developments

There are very few changes in the legislation that have not been taken into consideration at the time of writing Article III. However, the patent disputes between SEP holders and standard implementers are an increasingly interesting topic that I regard worth consideration. Courts issuing injunctions preventing one party from conducting a parallel litigation in another jurisdiction (anti-suit injunctions). In response, courts in other countries have issued anti-anti-suit injunctions to prevent parties seeking anti-suit injunctions that would hinder their own proceedings.⁴⁰⁵ These battles have significance when addressing the abuse of enforcement. The anti-suit injunctions could be used as a measure against a misuse when the patent holder is a non-practising entity.⁴⁰⁶ However, in these disputes the parties are often established companies and/or NPEs, for example suing Nokia suing Daimler or Unwired Planet suing Huawei Technologies.⁴⁰⁷ However, these cases are not directly addressing start-ups and growth companies.

In addition, there are recent EU competition law cases that address abusive patent enforcement practices and excessive pricing in the pharmaceutical sector. Recently, the Commission was concerned that Aspen was breaching the EU competition rules by engaging into abusive pricing practices and also using abusive negotiation practices. In the findings, it was found that Aspen had abused its dominant position.⁴⁰⁸ There are also similar cases within the focus of other national competition authorities such as the Danish Competition Council investigating in CD Pharma.⁴⁰⁹ This behaviour influences the degree of competition in the market and may for example prevent other companies from entering into the market and competing on their own merits.

405 Yu and Contreras 2020, p. 1.

406 Bonadio and McDonagh 2020, p. 150.

407 See for example (UK) Unwired Planet v. Huawei [2020] UKSC 37 on appeals from [2018] EWCA Civ 2344 and [2019] EWCA Civ 38; (DE) Landgericht LG München, Urteil vom. 2 October 2019, 21 O 9333/19; (DE) Landgericht LG München, Urteil vom 30 August 2019, 21 O 9512/19.

408 Case COMP/AT.40394 – Aspen, 10 February 2021.

409 (DK) Case CD Pharma Ab. See the Maritime and Commercial High Court of Denmark, 2 April 2020 – Case No. BS-3038-2019.

5. CONCLUSIONS, POLICY RECOMMENDATIONS AND FUTURE RESEARCH

In this final chapter, the overall conclusions of the dissertation are discussed along with the resulting policy recommendations. In addition, suggestions for areas of future research are presented.

5.1 Conclusions

Start-ups and growth companies can fight against patent infringements. However, limited financial resources, increasing cross-border exploitation of patents, lack of harmonisation in the European patent enforcement, and entities such as patent funds, create complexities that have to be confronted. Not all patent funds are detrimental. They have a central role as a market intermediary helping smaller countries in their innovation and patenting entities.

This dissertation investigated the adequate measures necessary for defending start-up and growth companies when they are confronted with patent enforcement litigation. These safeguards should be effective, so that transaction costs are kept low, and efficiency and legal certainty increased. I set two normative goals for this research: efficiency and legal certainty. When safeguards are working, non-practising entities (NPEs) lose their ability to litigate in order to obtain financial compensation, while the start-ups and growth companies gain the value of the patent as they are not forced for example to license, pay royalties, pay settlement fees, comply with injunctions or to pay damages. In this research, patent funds that have a litigation-oriented business model were called NPEs. However, patent funds also support smaller companies, for example, by providing new ways to monetise patents.

The dissertation consisted of the three articles. Article I studied procedural safeguards such as fee shifting, preliminary injunctions and bifurcation. Article II compared the multiple defendants' rule in the unitary patent regime with the Brussels I Regulation, and further studied the potential safeguards that prevent abusive behaviour by NPEs. Article III studied the abuse of rights principle, the abuse of dominant position, the IP Enforcement Directive and unjustified threats.

When these procedural safeguards are working, then a Kaldor-Hicks efficiency is achieved. Essentially, NPEs use of patents when used solely for the purpose of litigation or to threaten litigation is unproductive. This behaviour does not lead to any new innovation activities such as to the discovery of new products, services or processes for the benefit of the company or society. Hence, in this context of start-ups and growth companies, the gainers gain more than the losers lose. However, a Kaldor-Hicks efficiency evaluates solely the outcomes of the process. The adaptive efficiency instead has a focus on the institutions. Thus, the focus of adaptive efficiency is on vexatious litigation that can be seen as a legal constraint limiting companies' growth.

Article I showed that procedural safeguards provide support for start-ups and growth companies and therefore, make the enforcement mechanism for the plaintiff weaker. Fee shifting can act as a safeguard. In addition, preliminary injunctions and bifurcation have exceptions necessary to the main rule. Article II indicated that there is real option to consolidating infringement proceedings to one court under the UPC Agreement. This would lower transaction costs, for example through cost-sharing. In relation to NPEs, the UPC Agreement provides a safeguard as the requirement of the commercial relationship makes NPE lawsuits directed at multiple unrelated defendants implausible. In this respect, efficiency is seen in a manner of adaptive efficiency. When the multiple defendant rule is working and thus preventing NPE lawsuits directed at multiple unrelated defendants, then it averts abusive litigation that in turn lowers transaction costs. Article III demonstrated that the abuse of rights principle, the abuse of dominant position, the IP Enforcement Directive and unjustified threats in different forms protect defendants against plaintiffs and provide a safeguard against abusive claims. These safeguards seem to improve efficiency by lowering transaction costs and by altering abusive claims into a legal constraint that can be defended in different forms.

The legal certainty reflects the legitimate exceptions for start-ups and growth companies. Through legislation and official documents, the patent regimes' goal is to promote innovation. Thus, the legitimate exception of start-ups and growth companies is designed to promote their innovation activities. If there are no safeguards available for protecting innovation activities when facing an infringement suit then the goal to promote legitimate exceptions is not verified.

These procedural safeguards, to a certain extent, reduce uncertainty from the start-up and growth companies' point of view. In fee shifting, there is one rule specific to start-up and growth companies, which is that the UPC can lower the scale of the ceiling for recoverable costs if the unsuccessful party is a small or medium size company. Furthermore, for start-up and growth companies it is important to

have an issued-based approach. Fee shifting, preliminary injunctions and bifurcation have the elements of an issue-based approach. Legal principles play an important role. However, in general, bifurcation might increase uncertainty, as smaller companies are less likely to challenge the validity of patents. However, bifurcation under the UPC Agreement has discretionary elements. NPEs might use shell companies to shield their investors from liability and therefore, circumvent the fee-shifting rule. Lifting the corporate veil could potentially prevent this circumvention. The UPC Agreement seems to clarify complexity in relation to the multiple defendant's rule. The abuse of dominant position, the IP Enforcement Directive and unjustified threats protect start-ups and growth companies from patent holders asserting their patents inappropriately.

However, in fee shifting, preliminary injunctions, and bifurcation there is a potential inconsistency in the relevant definitions and clarifications that are left open to the discretion of the UPC. Discretion leaves room for judges from different legal traditions to interpret the unitary patent rules from their own national perspective. This might cause difficulties, at least initially, before the Court of Appeal has harmonised the practice of the local and regional divisions. For example, uncertainty might increase forum shopping between the local and regional divisions. This also applies to the multiple defendant rule and terms such as commercial relationships. In relation to the abuse of patent enforcement there are also uncertainties. The abuse of rights principle has not been applied to patent litigation cases by the CJEU. The CJEU case law related to abusive litigation in EU competition law is limited and to a certain extent applies to specific situations such as the misuse of enforcement procedures and SEP disputes. The abuse under the IPRED applies to remedies according to the CJEU case law. The unjustified threats lacks harmonisation at the EU level.

The unpredictable behaviour of NPEs increases uncertainty. The safeguards studied, fee shifting, preliminary injunctions and bifurcation, prevent NPE litigation from each of their own perspectives. This is similar to the abuse of rights principle applied to the patent enforcement by means of the abuse of dominant position, the IPRED and unjustified threats. The multiple defendant rule prevents abusive behaviour by NPEs only in relation to unrelated start-ups and growth companies. Thus, there are other grounds of jurisdiction which might be abusively used by an NPE. All these means can act as a safeguard for start-ups and growth companies and make the enforcement mechanisms weaker for plaintiffs such as NPEs. However, increasing cross-border exploitation of patents and the lack of harmonisation make the use of these safeguards complex for start-ups and growth companies. Thus, vast financial resources and also IP expertise are needed.

Overall, when safeguards are working start-ups and growth companies do not

lose the value of their patent and the European patent litigation does not resemble a Hobbesian state of war where the strongest and those with the deepest pockets win. Thus, revenues are not lost to high litigation costs and smaller companies can continue their research and innovation activities and further commercialise their innovations. The measures studied in this research provide separate tools for start-ups and growth companies when defending their rights. As regards certain tools, the coherence of a judicial interpretation is achieved. However, when the adequacy of these tools from a legal certainty point of view are considered from an overall perspective, then improvements are still needed. The complexity of these measures and the uncertainty of the unitary patent regime will reduce their potential to act as a safeguard. Therefore, it can be acknowledged that the goal of legal certainty reflecting the patent regime's aim to promote innovation for start-ups and growth companies is not fully achieved.

5.2 Implications and Policy Recommendations

This dissertation provides new information on the patenting activities and patent enforcement from the perspective of start-ups and growth companies. Start-ups and growth companies are facing constraints and these constraints can be legal or financial. Legal constraints can limit a company's growth, for example, when not functioning effectively they can prevent the company's ability to defend rights and achieve the intended goals such as legal certainty and efficiency. In addition, smaller companies are also financially constrained and have less capital. As a result, we should aim for a patent enforcement system that is effective and increases legal certainty and efficiency. This in turn will lower transaction costs.

Political and legal institutions controlling society cannot and should not control entirely how patents are used by different market participants. Thus, it is beneficial for start-ups and growth companies that patents can be transferred and monetised. For example, companies can concentrate on non-core technologies and earn profits for their innovate and commercialisation activities. The evolving patent market has both positive and negative consequences. The negative consequences should be prevented as far as possible. When the focus of patent enforcement activities is on harassing or forcing settlements then society should have mechanisms to prevent such actions. However, the assumption is not that all litigation by patent funds is abusive. Thus, a good understanding of the case and the business model of the patent fund such as vexatious litigation is needed. Vexatious litigation leads to unproductive use of patents and then the value of the patent is decoupled from the value of producing new inventions and the production of goods or services.

One way is to prevent such adverse effects is to protect the defendant against

the plaintiff by weakening the enforcement mechanisms for the plaintiff. Defendants can be protected by using efficient procedural safeguards. These procedural safeguards were further evaluated in this dissertation. These mechanisms should be for the benefit of smaller companies and other entities. This knowledge also prevents adverse-effects. If the harassing party knows that the possibilities of winning the legal proceedings are weak then the threshold for starting a process is high, and the means of bringing pressure are not effective.

The UPC Agreement has preventive elements that works safeguards. For the UPC Agreement it would be essential to have the largest patent markets participating in the unitary patent regime. This would also balance the activities so that a situation could not develop where there was only one influential market. The organisational and procedural provisions are inspired by national judicial systems and in the future, also by the case law of the UPC. In addition, when discussing the European patent enforcement, it has to be remembered that there are countries within Europe, but outside the EU. For example, the UK has a significant patent market which now falls outside of the EU.

However, the complexity of European patent enforcement is not only a question of the IPR related legislation. There are also other potential measures. Lifting the corporate veil concerning limited companies is one possibility to prevent the circumvention of fee shifting, and would also increase efficiency. Furthermore, another example is to compare the activities of patent funds to other funds such as alternative investment funds.⁴¹⁰ These and other possible alternative measures provide interesting topics for future research.

European countries should continue to harmonise patent enforcement across countries. The essential aim of an effective patent enforcement system from the perspective of SMEs should guide these initiatives. In this harmonisation process, further harmonisation of the IP Enforcement Directive is an important tool. If the UPC Agreement transpires to be a utopia, then the work should continue in order to find a functioning system that hopefully covers all the EPC contracting states.

However, this is not only a question for Europe, as many of the start-ups and growth companies are born internationals and Europe is only one piece of the puzzle.

410 Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulation (EC) No 1060/2009 and (EU) No 1095/2010, [2011] OJ L 174.

The growing cross-border dimension demands global initiatives such as principles that may serve as models for national, regional and international legislators.

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ABBREVIATIONS

AI	artificial intelligence
CJEU	the Court of Justice of European Union
DK	Denmark
EPC	European Patent Convention
EPO	European Patent Office
EU	European Union
EUIPO	European Intellectual Property Office
FCC	German Federal Constitutional Court
DE	Germany
GP	general partner
IoT	Internet of Things
IMF	International Monetary Fund
LP	limited partner
NIE	New Institutional Economics
NPE	non-practising entity
OECD	Organization for Economic Co-Operation and Growth
OHIM	Office for Harmonization in the Internal Market
PAE	patent assertion entity
PE	private equity
R&D	research and development
IP	intellectual property
IPR	intellectual property rights
SEP	standard essential patent
SPV	special purpose vehicle
SME	small and medium size company
UPC	Unitary Patent Court
UK	United Kingdom
US	United States
VC	venture capital

Original Publications

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Abstract

The unitary patent system with the establishment of the Unified Patent Court will lead to unitary patent protection covering most European Union countries. Moreover, it will lead to litigation with the same geographical reach. One potential concern related to increasing litigation is the so-called ‘patent trolls’ (non-practicing entities) that purchase patents for the purpose of portfolio building or company financing. One of the key expressed justifications of the unitary patent system was to support small- and medium-sized enterprises by securing them easier and wider access to patents. The aim of this article is to examine procedural safeguards from the perspective of the start-up and growth companies. These safeguards protect start-up and growth companies when acting as defendants. As a corollary, they weaken the enforcement mechanisms from the perspective of the plaintiff. The safeguards addressed in this article are fee shifting, preliminary injunctions, and bifurcation. As the Unified Patent Court system is still evolving, the current state of European patent litigation in key jurisdiction countries (Germany, the United Kingdom and the Netherlands) is analysed. This article explores how these safeguards evolve in the unitary patent regime and their potential to reduce uncertainty for start-up and growth companies when acting as defendants.

Keywords

Unitary patent, patent enforcement, litigation, SME, start-up, growth companies

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1. Introduction

Small, innovative growth companies can easily adjust to the rapid changes of modern society. They are often recognised as the drivers of economic growth in new, innovative and emerging areas.¹ The protection of small- and medium-sized enterprises has been one of the key expressed justifications of the unitary patent system.² The Unitary Patent will provide broad patent protection covering most European Union countries with a single application.³ Patent trolls, also known as non-practising entities (NPEs), exploit wider protection.⁴ They are patent monetizing entities, which purchase patents from others. Their operation might eventually lead to aggressive patent litigation. Small companies might also be targets of patent suits as they may pay nuisance settlements regardless of the merits of the case in fear of costly litigation. The patent industry and legal scholars are concerned about the possibility of an increase in patent trolling.⁵ However, the

1. OECD, 'OECD Innovation Strategy 2015: An agenda policy for action', *OECD* (2015), <http://www.oecd.org/sti/OECD-Innovation-Strategy-2015-CMIN2015-7.pdf>, p. 8.
2. I.B. Sterjna, *The Parliamentary History of the European 'Unitary Patent'*. Verbatim protocol of selected meetings in the European Parliament and its Legal Affairs Committee (Tredition GmbH, 2016). Besides start-up and growth companies, the term 'SME' (Small and Medium Size Company) will also be used. SMEs are defined in Commission Recommendation No. 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, [2003] OJ L 124/36. The term start-up and growth companies is used as this research has focus on companies that are relatively small and highly intensive in their innovation activities.
3. The new unitary patent system will be evaluated as it forms one of the core recent European developments in this area. The unitary patent system consist of Regulation No. 1257/2012/EU of the European Parliament and of the Council of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection, [2012] OJ L361/1 (Regulation No. 1257/2012/EU); Council Regulation No. 1260/2012/EU of 17 December 2012 implementing enhanced cooperation in the area of creation unitary patent protection with regard to the applicable translation arrangements, [2012] OJ L 361/89 and the Agreement on a Unified Patent Court, [2013] OJ C 175/1 (AUPC Agreement). Of further relevance are the Rules of Procedure for the UPC (the RoP) the latest 18th version has been adopted by the Preparatory Committee in March 2017 and the Rules on Court Fees and Recoverable Costs final draft has been adopted by the Preparatory Committee in February 2016. See, Unified Patent Court, 'Draft rules of Procedure – updated March 2017', *UPC* (2017), <https://www.unified-patent-court.org/news/draft-rules-procedure-updated-march-2017> (UPC RoPs). The Unified Patent Court (UPC) will be a court common to the contracting Member States and thus, part of their judicial system.
4. It is extremely difficult to define an NPE. The body of literature on the definition is rich and varied. For some brief overviews on the matter, see, inter alia, T. Ewing and R. Feldman, 'Giants Among Us', 1 *Stanford Technology Law Review* (2012); C. Helmers and L. McDonagh, 'Trolls at the High Court', *Law, Society and Economy Working Papers* No. 13/2012 (2012), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2154958; S. Fusco, 'Markets and Patent Enforcement: A Comparative Investigation of Non-Practicing Entities in the United States and Europe', 20 *Michigan Telecommunications and Technology Review* (2014).
5. IP2I is a coalition of innovative companies, who have directly experienced NPEs in the European environment. See IP2I, 'Homepage', *IP2I* (2018), <http://www.ip2innovate.eu>. For legal scholars see for example, D. Harhoff, 'Economic Cost-Benefit Analysis of a Unified and Integrated European Patent Litigation System', *Institute for Innovation Research, Technology Management and Entrepreneurship* (2009), http://ec.europa.eu/internal_market/indprop/docs/patent/studies/litigation_system_en.pdf, p. 50; L. McDonagh, 'Exploring Perspectives of the Unified Patent Court and Unitary Patent Within the Business and Legal Communities', *UK Intellectual Property Office* (2014), <http://openaccess.city.ac.uk/12605/>, p. 26; M. de Heide et al., 'Study on the Changing Role of Intellectual Property in the Semiconductor Industry – Including Non-Practicing Entities', *European Commission* (2014), <https://ec.europa.eu/digital-single-market/en/news/study-changing-role-intellectual-property-semiconductor-industry-including-non-practicing-0>, p. 25; N. Thumm et al., 'Patent Assertion Entities in Europe. Their Impact on Innovation and Knowledge Transfer in ICT Markets', *JRC Science Policy Report* (2016), <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/patent-assertion-entities-europe-their-impact-innovation-and-knowledge-transfer-ict-markets>, p. 55-56.

Vice President of the European Digital Single Market, Anrup Ansip, claims that the unitary patent system, more exactly the Agreement on a Unified Patent Court (AUPC), provides safeguards against patent trolls.⁶ NPEs exist in Europe, and are active, for example, in Germany and in the United Kingdom. NPEs account for approximately 10% of patent suits litigated in Germany and in the UK.⁷

The main research question in this article is: Do the substantive patent norms of the unitary patent system provide safeguards for start-up and growth companies when acting as defendants? If not, then the European patent litigation resembles a Hobbesian state of war where the strongest with the deepest pockets win. To answer the research question, this article evaluates the procedural safeguards available for start-up and growth companies when accused of infringing the patent owner's rights. The safeguards evaluated are fee shifting, preliminary injunctions, and bifurcation. Here safeguards are understood as mechanisms that protect defendants against plaintiffs and make the enforcement mechanisms for the plaintiff weaker. Fee shifting, preliminary injunctions, and bifurcation have been presented in the legal literature as either preventing or increasing NPE litigation.⁸

'Fee shifting' refers to a situation where the losing party has to pay the entire costs of the successful party, thereby deterring frivolous lawsuits. Thus, this is a pure safeguard. Preliminary injunctions and bifurcation, in contrast, increase frivolous lawsuits. Therefore, the main rule that initially allows preliminary injunctions and bifurcation needs exceptions. These exceptions to the main rule have the function of a procedural safeguard. Preliminary injunctions imply an order to withdraw the potentially infringing technology from the marketplace. The threat of an extensive EU-wide injunction could attract abusive litigation and furthermore, promote unjustified settlements for start-up and growth companies. 'Bifurcation' refers to the procedural separation of validity, and infringement claims potentially increase the cost and length of the dispute. This article advances two arguments. Firstly, fee shifting can act as a safeguard for defendants. Secondly, preliminary injunctions and bifurcation need efficient exceptions to act as safeguards for defendants. As the first sub-question, the article asks what kind of exceptions the unitary patent system will provide for preliminary injunctions and bifurcation. As the second sub-question, the article asks do these safeguards reduce uncertainty from the start-up and growth companies point of view.⁹

6. Intellectual Property 2 Innovate (IP2I) has recently called for the European Commission to take concrete action to prevent abuses from patent trolls. See <http://www.ip2innovate.eu>. For the correspondence see, A. Ward, 'European Patent Troll Boom Spurs Google, Adidas, Intel & Daimler Backed IP2Innovate to Demand Commission Get Tough with US Patent Trolls', *IP Watchdog* (2017), <http://ipkitten.blogspot.co.uk/2017/04/european-patent-troll-boom-spurs-google.html>.

7. C. Helmers et al., 'Patent Assertion Entities in Europe', *Santa Clara Law Digital Commons* (2015), p. 2. See also for example T. Ewing and R. Feldman, 1 *Stanford Technology Law Review* (2012); C. Helmers and L. McDonagh, *Law, Society and Economy Working Papers* No. 13/2012 (2012); S. Fusco, 20 *Michigan Telecommunications and Technology Review* (2014).

8. For overview on the matter, see, inter alia, D. Harhoff, *Institute for Innovation Research, Technology Management and Entrepreneurship* (2009); S. Michel et al., 'The Evolving IP Marketplace: Aligning Patent Notices and Remedies with Competition', *Report of the Federal Trade Commission* (2011), <http://www.ftc.gov/os/2011/03/110307patentreport.pdf>; C. Helmers and L. McDonagh, *Law, Society and Economy Working Papers* No. 13/2012 (2012); S. Fusco, 20 *Michigan Telecommunications and Technology Review* (2014).

9. Law and economics emphasize normative analysis and point to desirable legal rules and institutions to achieve certain goals. For example, according to D.C. North, the major role of institutions is to reduce uncertainty. Hence, the major role of the institutions is not to increase efficiency as traditionally in law and economics. See, on this point, D.C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge University Press, 1990), p. 6-7.

These studied arguments seem to be valid, as fee shifting does act as a safeguard and preliminary injunctions and bifurcation do provide exceptions to the main rule. The studied safeguards reduce uncertainty from the start-up and growth companies' point of view. All the studied safeguards had elements of an issue-based approach. Furthermore, legal principles, such as proportionality, equity and fairness to the parties, play an important role.

New Institutional Economics (NIE) will form the theoretical basis of this article. The article thus evaluates the studied safeguards as institutions. Their interaction with certain organisational arrangements, namely start-up and growth companies and NPEs, will form the focus of the article.¹⁰ In addition to European-level development, case law from Germany, the UK and the Netherlands will be utilised.¹¹ The impact of NPE lawsuits on start-up and growth companies in particular is still a relatively novel research area.¹²

In the following sections, Section 2 analyses the European patent enforcement system, the unitary patent system, and the increased litigation from the point of view of start-up and growth companies, and discusses the role of patent funds, which function as NPEs. Sections 3 and 4 evaluate how institutions facilitate transactions and how fee-shifting, preliminary injunctions and bifurcation work as safeguards. This article concludes with final remarks.

2. Unitary patent and infringement

The unitary patent will provide extensive patent protection covering all the EU Member States that ratify the AUPC. Thus, it will not cover the full area of the Internal Market. Currently, 16 Contracting Member States have completed the ratification process.¹³ Article 89(1) of the AUPC requires that the AUPC is ratified by 13 states, including France, Germany and the UK. France and recently the UK have ratified the Agreement. The Constitutional Court of Germany has put the ratification process on hold. Due to these reasons, there is no date for the entry into force of the AUPC and for the Unified Patent Court (UPC) to become operational.¹⁴

10. The Organizations and institutions term is adopted from the NIE. The NIE studies institutions and how these interact with organizational arrangements. See D.C. North, *Institutions, Institutional Change and Economic Performance*; C. Ménard and M.M. Shirley, 'Introduction', in C. Ménard and M.M. Shirley (eds.), *Handbook of New Institutional Economics* (Springer-Verlag, 2008); E.G. Furubotn and R. Richter, *Institutions & Economic Theory* (University of Michigan Press, 2005).

11. These countries handle the majority of European patent cases and, therefore, are the most relevant ones for this research. For the relevance of these jurisdictions in litigation see Taylor Wessing, 'Global Intellectual Property Index Report (GIP1)', *Taylor Wessing* (2016), <http://www.taylorwessing.com/ipindex>. In the UK, there is no unified legal system.

12. An exception to this is a relatively recent study by C. Chien, 'Start-ups and Patent Trolls', *Santa Clara Law Digital Commons, Faculty Publications* (2012), <https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1554&context=facpubs>. Also, Bessen and Meurer claim that SMEs are often defendants for NPE litigation. See, on this point, J. Bessen and M. Meurer 'The Direct Costs from NPE Disputes', 99 *Cornell Law Review* (2014), p. 387-424.

13. For an updated overview of the ratification process, see European Council, 'Agreement on a Unified Patent Court', *Consilium* (2017), <http://www.consilium.europa.eu/en/documents-publications/agreements-conventions/agreement/?aid=2013001>

14. For analysis of the ratification process, see J. Alberti, 'New Developments in the EU system of Judicial Protection: the Creation of the Unified Patent Court and its Future Relation with the CJEU', 24 *Maastricht Journal of European and Comparative Law* (2017), p. 10-11; T. Müller-Stoy, 'Unitary Patent and Unitary Patent Court stopped Just before the Finish Line', *Bardehle Pagenberg* (2017), <https://www.bardehle.com/ip-news-knowledge/ip-news/news-detail/unitary-patent-and-unified-patent-court-stopped-just-before-the-finish-line-perspectives-after-the.html>. For the analysis of the post-Brexit in UK, see T. Jaeger, 'Reset and Go: The Unitary Patent System Post-Brexit', *SSRN Discussion*

Currently, there are national patents and European patents granted by the European Patent Organisation. The unitary patent will provide an additional option for patent protection. A unitary patent is a European patent to which, at the request of its proprietor, a unitary effect is given.¹⁵ The registration of a unitary effect thus requires a European patent to be granted under the rules of the European Patent Convention. This makes it a unique construct under EU law, as the EU title is granted on the basis of a right conferred under an international convention.¹⁶ A unitary patent will be subject to the same legal rules in all Member States. The UPC will have exclusive jurisdiction with respect to unitary patents as well as after a transitional period when European Patents will be designated by one or more Member States.¹⁷

A unitary patent gives the right of exclusivity.¹⁸ Exclusivity protects patent owners against infringers. For the unitary patent, the AUPC provides a broad set of rules on infringements and their exceptions.¹⁹ For the practical implementation of the AUPC, the relevant element is the work of the Preparatory Committee. The Preparatory Committee of the AUPC was set up in March 2013 by the 25 Member States that have signed the AUPC. The Preparatory Committee will exist until the UPC is established.²⁰ The procedural details of the AUPC have been developed in the Rules of Procedure (RoP).²¹ Furthermore, the Rules on Fees and Recoverable Costs are important. The Preparatory Committee has agreed on the draft RoP and on the Rules of Fees and Recoverable Costs. Therefore, these rules are final and accepted by the Preparatory Committee, but they lack formal adoption.²²

In addition to protection against infringers, exclusivity also stipulates that a patent serves as an asset. The unitary patent is regarded as an object of property, but in this matter the unitary patent regulation specifies the exclusive application of national law. Therefore, as an object of property for a given unitary patent, only one national law would apply throughout the territories of enhanced cooperation.²³ Therefore, in this respect different national laws apply to different unitary patents. This applies, for example, to the transfer of rights and erga omnes effects of contractual licensing.²⁴

Paper (2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2884671. For the entry into force, see above all, the official UPC website.

15. Articles 3 and 4 of Regulation No. 1257/2012/EU. The unitary patent is also referred to as the EPUE (the European Patent with Unitary Effect). See A. Kaisi, 'Finally a Single European Right for the EU? An analysis of the substantive provisions of the European patent with unitary effect', 36 *European Intellectual Property Review* (2014), p. 170.

16. S. Luginbuehl, *European Patent Law. Towards Uniform Interpretation* (Edward Elgar Publishing, 2011), p. 47.

17. Articles 3 and 4 of Regulation No. 1257/2012/EU.

18. Article 5 of Regulation No. 1257/2012/EU.

19. Articles 5-8 of Regulation No. 1257/2012/EU.

20. For more information, see the official UPC website.

21. Article 41 of the AUPC Agreement.

22. At the time of writing, the latest 18th draft of the RoP will be under scrutiny by the European Commission on the compatibility of the Rules of Procedure with Union law and will be later be subject to formal adoption by the UPC Administrative Committee. Furthermore, the Preparatory Committee agreed on the Rules on Fees and Recoverable Costs on the 25 February 2016. More information, see the official UPC website.

23. Article 7 of Regulation No. 1257/2012/EU.

24. R. Hilty and J. Drexler, 'The Unitary Package: Twelve Reasons for Concern', *Max Planck Institute for Intellectual Property and Competition Law* (2012), https://www.ip.mpg.de/fileadmin/ipmpg/content/stellungnahmen/mpii-ip-twelve-reasons_2012-10-17_01.pdf, p. 2.

The current European patent system under the European Patent Convention is fragmented. The post-grant phase takes place at a national level.²⁵ Therefore, the unitary patent system seems to be a new beginning for the European patent system covering most European countries. This also makes the infringements proceedings more attracting as, for example, the threat of injunctions applies to all EU Member States that will ratify the AUPC.

3. Patent funds and the monetisation of patents

For future growth, the effective use of patents is significant. Patent funds in general help to monetise patents by creating a secondary market for them. Therefore, they have the role of an intermediary.²⁶ This is essential for start-ups and growth companies as they often lack the resources to monetise patents. As a corollary, patent funds might create a threat of litigation and incur costs. Some patent funds have a litigation-oriented business model, also referred to as 'NPE'.

Patent funds can be seen as organisational arrangements. Organisational arrangements are the different modes of governance that market actors implement to facilitate transactions and contractual agreements.²⁷ To generate a better understanding about patent funds, comparison to venture capital is useful. Patent funds have similar elements to venture capitalists in their fund structures, fund raising and sources of inventions.²⁸

Patent funds are issued to finance major investment projects. Similar to venture capital funds, patent funds are generally structured as a limited partnership.²⁹ Investors can subscribe only for a

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25. Before the era of the UPC system, patents were territorial rights pursuant to Article 64(3) of the Convention on the grant of European Patents, signed in Munich on 5 October 1973 as revised on 17 December 1991 and on 29 November 2000. Hence, any infringement of a European patent is dealt with in accordance with national law. This could lead to a duplication of court cases and contradictory patent enforcement decisions across jurisdictions within Europe. The post-grant phase refers to infringement litigation and revocation actions. For a broader overview on this topic, see D. Harhoff, *Institute for Innovation Research, Technology Management and Entrepreneurship* (2009), p. 38-40; K. Cremers et al., 'Patent Litigation in Europe', *Centre for European Economic Research Discussion Paper* No. 13-072 (2013), <https://orca-mwe.cf.ac.uk/65389/1/Patent%20Litigation%20in%20Europe.pdf>, p. 1; F. Baldan and E. Van Zimmeren, 'The future of the Unified Patent Court in Safeguarding Coherence in the European Patent System', 52 *Common Market Law Review* (2015), p. 12; D. Kitchin, 'Introductory Remarks: A Judicial Perspective', in J. Pila and C. Wadlow (eds.), *The Unitary EU Patent System* (Hart Publishing, 2016), p. 1-2.
 26. Japanese Patent Office, 'New Intellectual Property Policy for Pro-Innovation. Intellectual Property System as Global Infrastructure', *Report of Policy Committee on Innovation and Intellectual Property* (2008), https://www.jpo.go.jp/iken_e/pdf/iken_e_innovation/draf_report.pdf, p. 148; T. Yanagisawa and D. Guellec, 'The Emerging Patent Marketplace', *OECD Science, Technology and Industry Working Papers* No. 2009/09 (2009), https://www.oecd-ilibrary.org/science-and-technology/the-emerging-patent-marketplace_218413152254, p. 8. The most prominent intermediaries have been patent auctions and patent funds. See, in particular, M. Bader et al., 'Creating a Financial Market for IPR', *Final Report for EU Tender No. 3/PP/ENT/CIP/10/A/NO2S003* (2011), p. 101.
 27. C. Ménard and M.M. Shirley, in C. Ménard and M.M. Shirley (eds.), *Handbook of New Institutional Economics*, p. 1.
 28. Venture capital (VC) is a broad subcategory of private equity and refers to investments typically made in innovative companies in the early stages of their development that have potential for high growth and are typically driven by technological innovation. For some overviews on venture capital and private equity, see, inter alia, E. Talmor and F. Vasvari, *International Private Equity* (John Wiley & Sons Ltd, 2011); K.P. Jarboe and R. Furrow, 'Intangible Asset Monetization. The Promise and the Reality', *Athena Alliance* (2008), <https://intangibleeconomy.files.wordpress.com/2016/02/intangibleassetmonetization.pdf>; T. Meyer and P. Mathonet, *Beyond the J-Curve* (John Wiley & Sons Ltd, 2005).
 29. T. Meyer and P. Mathonet, *Beyond the J-curve*, p. 10; G. Buchtela et al., 'See.IP Fund Feasibility Study', *South-East European Co-operation of Innovation & Finance Agencies* (2010), http://www.see-ifa.eu/_uploaded/_editor/file/SEE_IP_Fund_Feasibility_Study.pdf, p. 13.

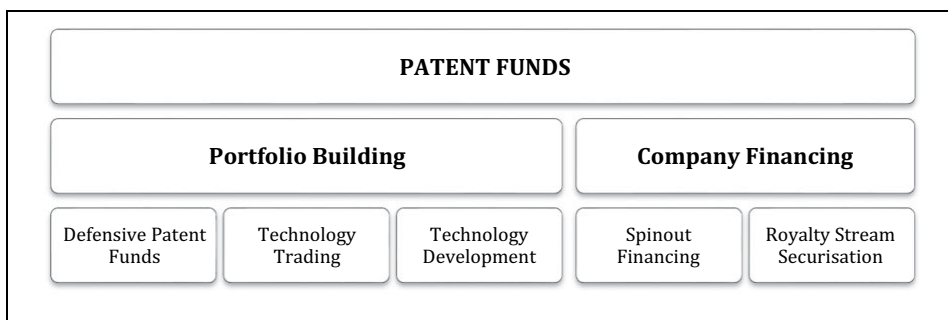


Figure 1. Overview of the business methods of different patent funds.

specific period. The fund is dissolved or liquidated after the expiry of a predefined period and the shares are distributed among members. Thus, investors cannot withdraw their capital until the fund is terminated. Therefore, they are called ‘closed funds’.³⁰ The largest entities collect funds to finance activities. Funding sources of patent funds come from investors such as larger companies, hedge funds, venture capital funds, academic institutions, and even other state-controlled bodies.³¹ As with venture capital funds, patent funds are often blind pools of capital. An investor does not typically know which patents will be invested in, whereas an asset pool has its investment targets defined in advance. Sources for investments are, for example, universities, research institutes, and start-up and growth companies.³²

The business model and revenue strategy of patent funds vary. In the figure below, funds are divided into portfolio building and company financing. Figure 1 summarises the different business models of patent funds.

The entities in the first group of patent funds focus on building the intellectual property (IP) portfolio. They build their patent portfolios based on patents generated through the strategic acquisition of other parties’ patents. The acquisition strategies vary. In some acquisition activities, the entities purchase the majority of an operating company’s patents and patent applications. Patent funds have also engaged in unusual acquisition approaches, including purportedly purchasing the rights to all future inventions by researchers at universities.³³ IP portfolio building funds attempt to establish licensing programmes based on their patent portfolios, and generate revenues from such licensing activities. Technology development funds have their own research and development to develop products further, but do not generally produce any products or services.

30. The fund can also be open (also called mutual fund), which allows investors to join at any time. Furthermore, the fund is obliged to return investments. Purchase and sales prices are identified in the market on a daily basis as well. Most of venture capital funds have a contractually limited ten-year lifetime, with potential extensions of two-three years. During that time the investor’s capital is often unavailable. See G. Buchtela et al., *South-East European Co-operation of Innovation & Finance Agencies* (2010), p. 14; E. Talmor and F. Vasvari, *International Private Equity*, p. 27-28; N. Thumm et al., *JRC Science Policy Report* (2016), p. 5.

31. Other entities are for example nations such as China, France, South Korea and Taiwan. See T. Ewing and R. Feldman, 1 *Stanford Technology Law Review* (2012), p. 1-2.

32. G. Buchtela et al., *South-East European Co-operation of Innovation & Finance Agencies* (2010), p. 14.

33. T. Ewing and R. Feldman, 1 *Stanford Technology Law Review* (2012), p. 1-2.

Technology trading funds trade technology without further development of the IP. Defensive Patent Funds function as strategic protection to maintain the owners' freedom to operate.³⁴

The second group of patent funds fosters patent transfer through financing companies. The business model can be IP spinout financing. These funds provide capital for their counterpart against its IP. They might also provide traditional venture capital. Furthermore, there are also royalty stream securitisation companies, which are Special Purpose Vehicles (SPV). The patent owner transfers patents to the SPV and receives money and, optionally, a share of the SPV. Consumers buy products protected by the IP asset, and payments and royalties flow into the SPV.³⁵

Start-up and growth companies might be the targets of patent troll litigation. Patent funds that are litigation-oriented and accused of patent troll litigation are NPEs. NPEs can be, for example, a defensive patent fund or a technology development fund. In general, smaller companies have less capital, therefore NPEs do not necessarily generate revenues through damage claims. NPEs mean a threat of impending costly litigation and offers for a settlement with an escalating royalty or a licensing fee. Furthermore, an NPE might demand a company's equity.³⁶ Small companies might also be targets of patent suits as users of technology, for example in the United States Project Paperless, the limited liability company sued small businesses due to their use of digital scanners.³⁷ Furthermore, smaller companies suffer most from the economic uncertainty that NPE suits bring. This is due to the reason that they typically lack financial resources to fight extended litigation battles.³⁸

In research made in the USA, start-up and growth companies constitute the majority of defendants in NPE suits.³⁹ At present, it seems that NPEs have not widely asserted patent suits against European small- and medium-sized enterprises (SMEs). However, as US-based NPEs explore more opportunities in Europe and the unitary system offers wider patent protection, European SMEs might be more interesting targets in the future.⁴⁰

4. Procedural safeguards for defendants

A. Procedural safeguards as legal institutions

The legal institution sets the general environment where institutional arrangements take place. The unitary patent system can be recognised as a legal institution. Institutions determine the costs of

34. M. Bader et al., *Final Report for EU Tender No 3/PP/ENT/CIP/10/A/NO2S003* (2011), p. 101-104; T. Yanagisawa and D. Guellec, *OECD Science, Technology and Industry Working Papers* No. 2009/09 (2009), p. 22-25.

35. T. Yanagisawa and D. Guellec, *OECD Science, Technology and Industry Working Papers* No. 2009/09 (2009), p. 29; M.A. Gollin, *Driving Innovation. Intellectual Property Strategies for a Dynamic World* (Cambridge University Press, 2008), p. 323-324.

36. C. Chien, *Santa Clara Law Digital Commons, Faculty Publications* (2012), p. 11; N. Thumm et al., *JRC Science Policy Report* (2016), p. 5.

37. C. Chien, *Santa Clara Law Digital Commons, Faculty Publications* (2012), p. 4.

38. D. Harhoff, *Institute for Innovation Research, Technology Management and Entrepreneurship* (2009), p. 51.

39. Companies with less than \$10 M in revenue accounted for 55% of unique defendants. Based on the RPX Database. C. Chien, *Santa Clara Law Digital Commons, Faculty Publications* (2012), p. 1. See also J.O. Lanjouw and M. Schanckerman, 'Characteristic of Patent Litigation: a Window on Competition', 32 *Rand Journal of Economics* (2001); M. Meurer and J. Bessen, 'The Patent Litigation Explosion', *Boston University School of Law Working Paper* No. 05-18 (2005), <http://law.bepress.com/cgi/viewcontent.cgi?article=1532&context=alea>.

40. N. Thumm et al., *JRC Science Policy Report* (2016), p. 32.

transactions and thus effective institutions can lower transaction costs.⁴¹ One of the main reasons to create the unitary patent system was to lower transaction costs for SMEs. Further reasons were the existence of parallel enforcement decisions, and the existence of judicial incoherence. Overall, the new unitary patent system can be praised as well as criticised. On the one hand, the wider patent protection and the common post-grant phase may foster innovation and help companies in their patenting activities. On the other hand, additional litigation and the threat of litigation may impose more costs and complexity that attract NPE litigation. In the research literature, the threat of increasing NPE litigation has also been one of the key concerns as regards the unitary patent system.⁴² Patent suits in general are considered complex and thus, associated with high transaction costs. This is naturally more evident in NPE-oriented frivolous lawsuits.⁴³

The centralised patent system of unitary patents and the new business models might lead to the filing of damage claims for infringement.⁴⁴ Furthermore, the uncertainty inherent in any new court system will itself attract NPEs.⁴⁵ This will cause harm particularly for start-up and growth companies as they have fewer resources for defending their case in court. Therefore, it is important to have safeguards when start-up and growth companies are involved in litigation as defendants. These safeguards should be effective, so that transaction costs are kept low. The safeguards are seen as institutions that provide a framework for the interaction between institutions and organisations. The major role of institutions is to reduce uncertainty by establishing a stable structure for the interaction.⁴⁶ The studied institutions are the substantive patent norms that provide safeguards: the AUPC, the draft rules of the RoP, and the draft rules of the Rules of Fees and Recoverable Costs. The relevant aspects of these norms are detailed in the following sub-sections.

As the UPC system is still evolving, it is necessary to analyse the current state of European patent litigation in key jurisdictions. These are Germany, the UK and the Netherlands.⁴⁷ Furthermore, the organisational and procedural provisions of the AUPC are inspired to a large extent by national judicial systems.⁴⁸ The AUPC and the RoP are analysed in the following sub-sections.

41. Transaction cost is a central concept for NIE. See D.C. North, *Institutions, Institutional Change and Economic Performance*; E.G. Furubotn and R. Richter, *Institutions & Economic Theory*, p. 7.

42. See for example L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court* (Edward Elgar, 2016), p. 14; N. Thumm et al., *JRC Science Policy Report* (2016), p. 9; C. Helmers et al., *Santa Clara Law Digital Commons* (2015), p. 18-19.

43. See D. Harhoff, *Institute for Innovation Research, Technology Management and Entrepreneurship* (2009), p. 51; G. Ball and J. Kesan, 'Transaction Costs and Trolls: Strategic Behaviour by Individual Inventors, Small Firms and Entrepreneurs in Patent Litigation', *Illinois Law and Economics Paper Series No. LE09-005* (2009), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1337166, p. 5.

44. See D. Harhoff, *Institute for Innovation Research, Technology Management and Entrepreneurship* (2009), p. 29-50; D. Xenos, 'The European Unified Patent Court: Assessment and Implications of the Federalisation of the Patent System in Europe', 10 *Scripted* (2013), p. 252; S. Fusco, 20 *Michigan Telecommunications and Technology Review* (2014), p. 463.

45. L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 142.

46. See on this point D.C. North, *Institutions, Institutional Change and Economic Performance*, p. 6. The role to reduce uncertainty is not necessarily efficient.

47. For the relevance of these jurisdictions in litigation see Taylor Wessing, 'Global Intellectual Property Index Report (GIPI)', *Taylor Wessing* (2016). In the UK there is no unified legal system. England and Wales, Scotland, and Northern Ireland have separate legal systems and courts. The enforcement system in England and Wales is the most important jurisdiction with respect to patent litigation. See L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 18-19.

48. See for example A. Ilardi, *The New European Patent* (Bloomsbury Publishing, 2015), p. 55.

In addition, the Rules of Fees and Recoverable Costs are analysed in the section dealing with fee shifting.

B. Fee shifting

In this article it is argued that fee shifting is a pure safeguard. It has a positive impact as it makes the loser pay and therefore, deters frivolous suits by NPEs.

In the USA, the rise of frivolous lawsuits by NPEs has been partly explained by the fact that costs are not recoverable. Therefore, each party is generally responsible for paying its own attorney's fee. Fee-shifting rules have been proposed as one way to deter patent suits that are brought for their nuisance value, and has led to several proposed legislation bills.⁴⁹ The current legislation already permits a district court to award reasonable attorneys' fees and costs to the prevailing party in exceptional cases. District courts may determine whether a case is exceptional in a case-by-case exercise considering the totality of the circumstances.⁵⁰

In general, the identification of the impact of frivolous suits is difficult.⁵¹ Fee shifting could also be done selectively to sanction parties who litigate objectively weak patents.⁵² The empirical research conducted by Helmers and McDonagh regarding the UK and Wales shows that the combination of a high likelihood of losing a case and the liability for paying the winner's costs of engaging in the legal action may prevent the NPE action.⁵³ Therefore, it seems that the fee-shifting rule alone would not be efficient as a safeguard, but combined with the likelihood of losing a case it could prevent frivolous lawsuits. Thus, under such conditions, NPEs would not litigate weaker patents.⁵⁴

In European jurisdictions, the IP Enforcement Directive⁵⁵ has harmonised some parts of the remedies, even though they are mainly governed by national law. According to the IP Enforcement Directive, the unsuccessful party should pay reasonable and proportionate legal costs and other expenses.⁵⁶ Furthermore, measures should be fair, equitable, not unnecessarily complicated or costly, or entail unreasonable time limits or unwarranted delays.⁵⁷ In the Netherlands, for example,

49. (US) For example, the proposed bill Saving High-Tech Innovators from Egregious Legal Disputes Act (SHIELD Act, H.R. 845). See C. Chien, *Santa Clara Law Digital Commons, Faculty Publications* (2012), p. 22.

50. See, (US) 35 U.S.C. § 285 (2012). This was clarified for example in (US) *Octane Fitness LLC v. ICON Health & Fitness Inc.*, 134 S. Ct. 1749, Syllabus, 7-8 (April 29, 2014). In this case it was claimed that an exceptional case is simply one that stands out from the others with respect to the substantive strength of a party's litigation position (considering both the governing law and the facts of the case) or the unreasonable manner in which the case was litigated.

51. The body of literature on frivolous lawsuits and their impact is extremely rich. For some overviews, see, inter alia, T. Rowe, 'Predicting the Effects of Attorney Fee Shifting', 47 *Law and Contemporary Problems* (1984), p. 139-171; T. Eisenberg and G. Miller, 'The English vs. the American Rule on Attorneys Fees. An Empirical Study of Attorney Fee Clauses in Publicly-Held Companies Contract', 98 *Cornell Law Review* (2013).

52. M. Liang and B. Berliner, 18 *Virginia Journal of Law & Technology* (2013), p. 136.

53. C. Helmers and L. McDonagh, *Law, Society and Economy Working Papers* No. 13/2012 (2012), p. 20.

54. There is evidence from the US that shows that NPE's are losing a substantial share of their lawsuits, which is a much larger fraction than that of the producing companies. See M. Risch, 'Patent Troll Myths', 42 *Seton Hall Law Review* (2012), p. 461.

55. Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights, [2004] OJ L 157/45 (the IP Enforcement Directive).

56. Article 3 of the IP Enforcement Directive.

57. Article 14 of the IP Enforcement Directive.

this rule shifted the cost to the losing party. Before the implementation of the IP Enforcement Directive, the Dutch Courts typically shifted only a small amount of the fees.⁵⁸ The Netherlands, the UK and Germany have fee-shifting rules, which all have similar elements. The court can, for example, use discretion and consider proportionality. However, there are also differences in how costs are allocated between the parties.⁵⁹

The UK applies a fee-shifting rule. Typically, in the UK, costs are allocated via an issue-based approach on a proportionate basis.⁶⁰ The Patents High Court stated in *Research in Motion UK Ltd v Visto Corp* that the costs ought to be divided on a proportionate basis to the issues won in trial. The Patents High Court also noted that there was a disproportionate burden between both sides and gave guidance to the costs assessment judge. In England and Wales, the substantive legal issues and the costs are dealt with separately. Hence, it seems that in the UK courts are unwilling to cap costs, even where great disparity between parties exists, although cost assessment guidance can be given.⁶¹

The Netherlands applies a fee-shifting rule as well. In the Netherlands, legal costs have to be reasonable and proportionate.⁶² Legal costs are calculated on the basis of the procedure and the financial interests involved. Furthermore, parties can also agree on the amount of costs and inform the court on their agreement about costs.⁶³

Germany applies a fee-shifting rule, but the costs are not fully shifted. Germany has a value-based fee system where the costs are statutory fees, which depend on the estimated value of the dispute. The estimated value is used as a basis for the court to divide the costs between the loser and the winner. Therefore, costs are not the actual costs, meaning that the winning party is unlikely to recuperate all of its legal costs. As a result, the costs are not fully shifted to the loser. In cases where the plaintiff's request is only partially granted, the costs are split in accordance with the degree of success.⁶⁴

58. J. Brinkhof, 'The Enforcement of Patent Rights in the Netherlands', 31 *International Review of Industrial Property and Copyright Law* (2000), p. 706, 721; K. Cremers et al., 'Patent Litigation in Europe', 44 *European Journal of Law and Economics* (2016). See, (NL) *Danisco A/S v. Novozymes A/S*, Court of Appeal The Hague, 26 February 2013, Case no. 200.094.921/01.

59. (UK) for the UK, see Section 44.3 of the Civil Procedure Rules 1998 (SI 1998/3132) (CPR 1998); (DE) for Germany, see the § 91(1) of the German Code for Civil Procedures (*Zivilprozessordnung*) (ZPO); (NL) for the Netherlands, see § 1019 h of the Dutch Code of Civil Procedure (*Wetboek van Burgerlijke Rechtsvordering*) (DCC).

60. (UK) Section 44 of the CPR 1998; L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 27. See, in particular, (UK) *Research in Motion UK Ltd v. Visto Corp*, [2008] EWHC 819 (Pat), 31(5) I.P.D. 31033.

61. C. Helmers and L. McDonagh, 'Patent Litigation in England and Wales and the Issue-based Approach to Costs', 32 *Civil Justice Quarterly* (2013), p. 377, 382. See also (UK) *Research in Motion UK Ltd v. Visto Corp*, [2008] EWHC 819 (Pat), 31(5) I.P.D. 31033. In England and Wales, the substantive legal issues and the costs are dealt with separately.

62. See, (NL) § 1019 h of the DCC; K. Cremers et al., 'Invalid but Infringed? An Analysis of Germany's Bifurcated Patent Litigation System', *Max Planck Institute for Innovation and Competition Research Paper* No. 14-14 (2014), <http://ftp.zew.de/pub/zew-docs/dp/dp14072.pdf>; J. Brinkhof, 31 *International Review of Industrial Property and Copyright Law* (2000), p. 721–722.

63. (NL) § 1019 h of the DCC; J. Brinkhof, 31 *International Review of Industrial Property and Copyright Law* (2000), p. 721–722.

64. (DE) §92 of the ZPO; §39.1 of the German Code for Court Costs (*Gerichtskostengesetz*) (GKG). See, also, (DE) the Remuneration Code for Lawyers' Costs (*Rechtsanwaltsvergütungsgesetz*) (RVG). H. Marshall, *IIC*, p. 668; L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 41–42; K. Cremers et al., 44 *European Journal of Law and Economics* (2016).

Under the unitary patent regime and the AUPC, the losing party must pay the legal costs and other expenses incurred by the successful party, as a general rule. The AUPC leaves room for the discretion of the UPC. There are a number of principles that limit the fee-shifting rule in article 69 of the AUPC. Firstly, only reasonable and proportionate legal costs and other expenses may be recovered. Secondly, equity serves as a ground for rendering the general rule inapplicable. Thirdly, in the case of a partial success or in exceptional circumstances, the UPC may order the parties to bear their own costs, or apply a different apportionment of costs, based on equity. Fourthly, unnecessary costs caused to the UPC or the other party have to be borne by the party incurring them.⁶⁵

The Preparatory Committee has set out the scales of costs that a successful party may recover from their opponent. However, the ceilings of the recoverable costs can be amended to a certain extent. Therefore, in limited situations the UPC may raise or limit the ceiling. For example, the UPC may raise or limit the ceiling in the light of the principle of fair access to justice if the case is complex, multiple languages are used, or the financial capability of parties differs.⁶⁶ Furthermore, the UPC may lower the ceiling applicable if the unsuccessful party is, for example, an SME and the recoverable cost would threaten their economic existence. In its discretion, the UPC considers all available information on the parties. The analysed information might be the procedural behaviour of the parties, the applicable level of the ceiling for recoverable costs in comparison with the annual turnover of both parties, the type of economic activities of both parties, and the impact the lowered ceiling would have on the other party.⁶⁷ It is unclear from the current texts if the successful party recovers the court fees from the unsuccessful party. Based on the AUPC, this seems to be the case as other expenses are mentioned, but the decision on the scale of ceilings for recoverable costs indicates that these ceilings only apply to representation costs, which suggests that court fees cannot be recovered.⁶⁸

As there is inherent uncertainty regarding a patent's value, patent cases feature a high degree of complexity. Thus, these fee-shifting limitations in Article 69 of the AUPC and the discretion of UPC are important. According to Helmers and McDonagh, in an issue-based approach, where judges use their discretion, a fairer outcome is more likely, as it is rare to find an overall winner in patent cases. For example, if a company wins the case overall, it may still have to pay costs for the issues that they did not win.⁶⁹ Similar to the UK and in Germany, the AUPC states that in a case of partial success, the UPC may order the parties to bear their own costs.⁷⁰

It is important that the type of economic activity could also lead to the lowering or raising of the ceiling of the recoverable costs that a successful party may recover from their opponent. For example, the US Supreme Court and evidently the UK High Court have used the status of the NPE as part of their analysis. The US Supreme Court rejected both a general rule supporting the granting of a permanent injunction following a finding of patent infringement, and expansive principles supporting the denial of a patentee who did not practise its invention and was willing to license.⁷¹ Similarly, in the UK in a High Court case it was confirmed that the German company IPCom must

65. Article 69 of the AUPC Agreement.

66. UPC, 'Preparatory Committee Rules on Fees and Recoverable Costs', *UPC* (2016), https://www.unified-patent-court.org/sites/default/files/agreed_and_final_r370_subject_to_legal_scrubbing_to_secretariat.pdf, p. 12, Recitals 1 and 2.

67. UPC, 'Preparatory Committee Rules on Fees and Recoverable Costs', *UPC* (2016), p. 12, Recital 3.

68. Article 69 of the AUPC Agreement. See also the Preparatory Committee Rules on Fees and Recoverable Costs.

69. C. Helmers and L. McDonagh, 32 *Civil Justice Quarterly* (2013), p. 382.

70. Article 69 of the AUPC Agreement.

71. See (US) *eBay Inc. v. MercExchange LLC*, 547 U.S. 388 (15 May 2006); (UK) *Nokia Oyj (Nokia Corporation) v. IPCom GmbH & Co Kg*, [2012] EWCA Civ. 567: for an analysis of the *Nokia Oyj* case see, F. Mueller, 'the UK High

abide by the commitments it made to the European Commission and cannot seek injunctions under standard-essential patents against companies such as Nokia, who are prepared to take a license on fair, reasonable and non-discriminatory terms. Furthermore, it was clarified that IPRCom was seen as a non-practicing entity.⁷² Even though the exact definition of NPEs is controversial, it often includes the idea that they do not manufacture the product based on the technology in question and their main revenue comes from licensing and court judgments.⁷³ The UPC may lower the ceiling of the recoverable costs if the unsuccessful party is an SME. Further, the UPC may consider the type of economic activity relevant. Hence, it is possible to lower or raise the ceiling of the recoverable costs on the basis of the economic activity when the other party is a NPE.

Overall, fee shifting can act as a safeguard. Fee shifting combined with the high likelihood of losing a case seem to efficiently prevent NPE litigation. Therefore, the high quality of unitary patents that cannot be easily revoked is essential. Fee shifting is familiar in the studied European countries and thus, suits European jurisdictions. The scale of costs that the Preparatory Committee has set out resembles the value-based system of Germany. The UPC could lower the ceiling for recoverable costs if the unsuccessful party is an SME. Fee shifting in the unitary patent system has limitations and discretionary elements; for example, proportionality, equity and partial success. Therefore, the UPC could also potentially apply a more issue-based approach, as the UK and the Netherlands have done. For start-up and growth companies it is important to have an issue-based approach where, for example, the type of economic activity or the partial success is considered to be at the discretion of the UPC.

C. Lifting the corporate veil prevents circumvention

Under most circumstances, a corporation is regarded as a separate legal entity and distinct from its shareholders. Therefore, although the company is liable for its actions, holding the owners or investors liable for the activities of the company is far more complicated. NPEs might use shell companies for the specific purpose of shielding their owners or investors from liability and thus circumvent the fee-shifting rule. The use of shell companies means the creation of a corporate network that narrowly confines legal claims and provides a firewall to protect the larger company.⁷⁴ For example, the German fund IPRCom is structured as an SPV and therefore, as an SPV, it is not connected to the assets of the patent fund.⁷⁵ When the NPE loses litigation and a court orders it to pay the legal costs, as an SPV it claims that it is unable to do so. This is particularly hard for SMEs who have paid high filing fees to bring a nullity action to defend themselves and then cannot recoup those fees after winning.⁷⁶

Court Denies a Patent Injunction against Nokia in Light of a FRAND Commitment', *Foss Patents* (2012), <http://www.fosspatents.com/2012/05/uk-high-court-denies-patent-injunction.html>.

72. (UK) *Nokia Oyj (Nokia Corporation) v. IPRCom GmbH & Co Kg*, [2012] EWCA Civ. 567. Furthermore, in a hearing, Judge Roth referred to a classic case: *Shelfer v. City of London Electric Lighting Co*, [1895] 1 Ch. 287. This case laid out criteria based on which injunctive relief can be denied because monetary compensation is considered sufficient. Since this ruling, it has been applied to a number of patent cases in the UK.

73. See G. Ball and J. Kesan, *Illinois Law and Economics Paper Series* No. LE09-005 (2009), p. 6.

74. T. Ewing and R. Feldman, 1 *Stanford Technology Law Review* (2012), p. 37–38.

75. C. Colleen, *Santa Clara Law Digital Commons, Faculty Publications* (2012), p. 41.

76. IP2innovate, 'Promoting a Robust, Balanced & Flexible European Patent Ecosystem to Prevent Abusive Patent Practices of Patent Assertion Entities', *IP2I* (2017), http://ip2innovate.eu/wp-content/uploads/2017/04/IP2I_Coalitionscopeandobjectives_v15_040317.pdf.

The circumvention of fee shifting could be potentially prevented by lifting the corporate veil. Lifting (or piercing) the corporate veil is a metaphor for various ways courts ignore separate corporate personality, and justify granting a remedy where the corporate entity has been misused.⁷⁷ Here the interest is in extending the veil so that it imposes the responsibility upon the shareholders or is extended to a bunch of companies; for example, by treating the holding company as responsible for the acts of its subsidiary. In the USA, the veil piercing principles have been followed for many years. In commercial matters, courts will look through the corporate veil and impose the company's liability on its shareholders after considering two aspects: first, if the company is merely an alter ego for another entity or corporation; second, if the corporation facilitates a fraud or other inequitable consequences.⁷⁸ The carefully crafted legal structures make it particularly difficult to disregard the corporate form.⁷⁹

Misuse of the company form or legal obligations could lead to the piercing of the corporate veil, for example, in Sweden. The Swedish Supreme Court held shareholders liable for a certain company's obligation to compensate the opposing party's legal expenses that had accrued during a dispute. The shareholders were viewed to have used the company to avoid the statutory obligation to compensate the opposing party's legal expenses.⁸⁰ Similarly, the piercing of the corporate veil has previously been permitted in the German Federal Supreme Court. A shareholder, who removes the company's assets, leaving it without sufficient funds to fulfil its third-party obligations, may be personally liable under the law of tort.⁸¹ In the UK, the UK Supreme Court (formerly the House of Lords) has confirmed that English courts are permitted to pierce the veil if there are no other legal methods for achieving an equivalent result and the piercing of the veil prevents the abuse of corporate legal personality.⁸²

For start-up and growth companies, the fee-shifting rules are inefficient if the NPE is unable to pay the adjudged legal costs. It seems that lifting the corporate veil to avoid the legal costs is compatible with the European legislative environment. Therefore, lifting the corporate veil could potentially prevent the circumvention of fee shifting.

D. European-wide preliminary injunction

Under the unitary patent regime, it will be possible for NPEs to be granted European-wide patent protection, and therefore also the possibility to obtain a European-wide preliminary injunction. The threat of a wide EU-wide injunction could attract abusive litigation by NPEs and further promote unjustified settlements as regard to start-up and growth companies. This article claims that preliminary injunctions increase frivolous lawsuits, and therefore, it needs to include exceptions to the main rule that initially allows preliminary injunctions.

Preliminary injunctions are highly effective remedies available to a patent holder in case of an infringement.⁸³ A preliminary injunction permits patent holders to ban unlicensed products containing the patented technology from the marketplace, which under the Unitary Patent will cover

77. S. Ottolenghi, 'From Peeping Behind the Corporate Veil, Ignoring It Completely', 53 *Modern Law Review* (1990), p. 338–353; K.A. Strasser, 'Piercing the Veil in Corporate Groups', 27 *Connecticut Law Review* (2005), p. 637–665; R. Cowper and M. Dockterman, 'Teasing the Corporate Veil', 32 *International Financial Law Review* (2013), p. 43.

78. R. Cowper and M. Dockterman, 32 *International Financial Law Review* (2013), p. 43.

79. T. Ewing and R. Feldman, 1 *Stanford Technology Law Review* (2012), p. 40–41.

80. (SE) Högsta Domstolen, T 2133-14 (11 December 2014), p. 5–6.

81. (DE) Bundesgerichtshof, BGH, Urteil vom. 24 July 2002, II ZR 300/00.

82. (UK) *Prest v. Petrodel Resources limited and other*, [2013] EWCA Civ. 1395.

83. J. Leubsdorf, 'The Standard for Preliminary Injunctions', 91 *Harvard Law Review* (1978), p. 525; J. Lanjouw and J. Lerner, 'Tilting the Table? The Use of Preliminary Injunctions', 44 *The Journal of Law & Economics* (2001), p. 574.

all unitary patent Member States as a single patent jurisdiction.⁸⁴ The plaintiff may request preliminary injunctions to avoid irreparable harm, but also to impose financial stress on their rivals. This might be a particularly effective threat to use against start-up and growth companies that are often capital-constrained defendants.⁸⁵ Preliminary injunctions are used by NPEs to increase their bargaining power by preventing allegedly infringing product sales in order to achieve greater licensing or settlement fees.

In Germany, preliminary injunctions can be granted based exclusively on an assessment of infringement claims. In practice, the granting of preliminary injunctions is relatively rare due to the overall speed of regular patent infringement proceedings. They are used mainly in simple cases, or in situations where it is relatively easy to decide whether there is an infringement. To obtain a preliminary injunction, the plaintiff must show the existence of a relevant legal claim and a legal reason. Furthermore, the plaintiff must indicate the necessity for an injunction to prevent considerable disadvantages. The examination process balances the probabilities.⁸⁶ In the UK, injunctions are equitable remedies, which in general can be issued where the court considers it to be just and convenient. Moreover, in the UK, preliminary injunctions are rarely granted due mainly to the existence of the doctrine of 'clearing the way'. Clearing the way means that potential infringers are encouraged to file a claim to revoke a competitor's patent, or to obtain a declaration that their product does not infringe the competitor's patent.⁸⁷ In the Netherlands a preliminary injunction can be used and may be obtained within two weeks after filing a case. At the preliminary hearing, the plaintiff and the defendant have to provide oral arguments and the court's decision is made swiftly.⁸⁸

The UPC may order preliminary injunctions according to Article 62 of the AUPC. Use of the word 'may' indicates that the AUPC can implement a defendant-favourable position but that preliminary injunctions are not automatic. The AUPC recognises the right to prevent the use of the invention without the consent of the patent proprietor as being the core right of the patentee. This could lead to an interpretation that only under very exceptional circumstances will the AUPC use its discretion and does not implement such an order in most instances. Furthermore, remedies should be used in a fair and equitable manner, so as not to distort competition.⁸⁹ This is a case-by-case discretion that allows the UPC to consider elements such as whether the plaintiff actually practises the invention.⁹⁰ This empowers the UPC judges to consider the principles of fairness and equity with respect to possible abusive litigation by NPEs.

84. J. Leubsdorf, 91 *Harvard Law Review* (1978), p. 541.

85. J. Lanjouw and J. Lerner, 44 *The Journal of Law & Economics* (2001), p. 573, 601.

86. (DE) §935 of the ZPO; J. Klink, 'Cherry Picking Cross-Border Patent Infringement Actions: a Comparative Overview of German and UK Procedure and Practice', 11 *European Intellectual Property Review* (2004), p. 497; M. Norrgård and A. Nylund, 'The Requirements for Preliminary Injunctions in the Unified Patent Court', in R. M. Ballardini, M. Norrgård and N. Bruun (eds.), *Transitions in European Patent Law. Influences of the Unitary Patent Package* (Kluwer Law International, 2015), p. 202; L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 37. See also (DE) Oberlandesgericht, OLG Celle, Urteil vom. 17 March 1993 - 14 U 74/93.

87. L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 23. See for example, (UK) *SmithKline Beecham & Anor v. Apotex Europe Ltd & Ors*, [2002] EWHC 2556.

88. J. Brinkhoff, 'The Enforcement of Patent Rights in the Netherlands', 31 *International Review of Intellectual Property and Competition Law* (2000), p. 706, 709–711.

89. Articles 42 and 62 of the AUPC Agreement.

90. Currently in the US, courts could deny injunctive relief on a case-by-case basis depending on other characteristics that differ by industry, such as whether the plaintiff actually practices the invention. See, (US) *eBay Inc. v. MercExchange*

When exercising this discretion, the UPC has to evaluate the interests of the parties and in particular take into account the potential damage to either of the parties resulting from the granting or refusal of the injunction.⁹¹ The AUPC refers to the weighing of interests, but there is no reference to how this weighing is to be done. There are some decision-theoretical models, which can help to make the requirements for preliminary injunctions more precise. The use of preliminary injunctions may cause irreparable loss to both sides and the court's task is to minimise this loss. According to Leubsdorf's decision-theoretical model, minimizing the loss can be done by analysing the factors of the likelihood of the victory and the probable loss. Thus, the harms and likelihood of success are determined concurrently. Norrgård and Nylund propose an inverse sequential approach in which the court would start by weighing the interests of the parties, which in turn would define the standard of proof required. Thus, the greater the harm to the defendant compared with the plaintiff, the higher the threshold for a preliminary injunction.⁹²

The UPC can also consider the use of alternative measures. According to the RoP, the UPC should take into account whether the patent has been upheld in an opposition procedure before the European Patent Office or any other court; the urgency of the action; whether the applicant has requested provisional measures without hearing the defendant and the reasons therefore; and if any protective letter has been filed by the defendant.⁹³ The protective letter is intended to give a defendant an opportunity to defend himself in case provisional measures are to be sought *ex parte*. Provisional measures may include injunctions.⁹⁴

In summary, according to the AUPC, preliminary injunctions may be used. Therefore, the use of preliminary injunctions depends on the interpretation of the word 'may'. The right to prevent the use of the invention without the consent of the patent proprietor is seen as the core right of the patentee. This could lead to an interpretation that the UPC would often allow preliminary injunctions. When considering the countries researched, preliminary injunctions are allowed and are mostly used in the Netherlands, but not in Germany or in the UK. This could lead to the conclusion that preliminary injunctions are not often allowed if the infringement proceedings are fast enough or there are other possibilities, similar to the 'clearing the way' doctrine in the UK. The speed of the unitary patent regime remains to be seen when the UPC starts to operate. The option for bifurcation might accelerate the infringement proceedings similar to those in Germany, but at the same time bifurcation might be disadvantageous to start-up and growth companies mainly due to the costs. Furthermore, the AUPC allows other measures; for example, a protective letter filed by the defendant.

There are exceptions to the main rule of preliminary injunctions. The principles of fairness and equity increase the discretionary power of the UPC. Furthermore, the weighting of interests could

L.L.C., 547 U.S. 388 (15 May 2006), 391. See also, (US) 35 U.S.C. § 283. Instead, relying on the express language of the Patent Act, which provides that district courts may issue injunctions in accordance with the principles of equity, the court looked to traditional equitable principles. Traditional equitable principles are: an irreparable injury, the remedies available in law are inadequate, the balance of hardships between parties, and the public interest. For an analysis of *eBay Inc. v. MercExchange L.L.C.* see L.D. Burk and M.A. Lemley, *The Patent Crisis and How the Courts Can Solve It* (University of Chicago Press, 2009), p. 160.

91. Articles 62(1) and 62(2) of the AUPC Agreement.

92. J. Leubsdorf, 91 *Harvard Law Review* (1978), p. 541; M. Norrgård and A. Nylund, in R. M. Ballardini, M. Norrgård and N. Bruun (eds.), *Transitions in European Patent Law. Influences of the Unitary Patent Package*, p. 203–205.

93. Rule 209 of the UPC RoPs.

94. Rule 207 of the UPC RoPs.

be beneficial for start-up and growth companies. Weighting of interests and an issue-based approach allows the UPC to consider whether the plaintiff actually practises the invention. Therefore, an issue-based approach prevents NPE litigation.

E. Separating infringement and validity with bifurcation

Bifurcation increases frivolous lawsuits,⁹⁵ and therefore, it needs exceptions to the main rule that initially allows bifurcation. In a bifurcated legal system, separate courts decide on infringement and validity independently from one another. Currently, bifurcation is used in a few European countries, including Germany, Austria and Hungary.⁹⁶ Separate patent revocation proceedings increase the cost and the length of disputes and these additional costs are more difficult for SMEs than larger companies.

In Germany, regional courts (*Landgerichte*) have the competency to hear patent infringement cases. The *Landgerichte* have no jurisdiction to decide on the validity of a patent either in the form of a defence against the patentee's claims for patent infringement or in the form of a counterclaim for declaratory judgment of validity. Instead, revocation proceedings are placed before/considered by the European Patent Organisation, the German Patent and Trademark Office (*Deutsches Patent- und Markenamt*), and the Federal Patent Court (*Bundespatentgericht*).⁹⁷

It seems that an alleged infringer will refrain from challenging the validity in a bifurcated system even if the likelihood of seeing the patent invalidated is relatively good. Cremers et al.⁹⁸ have analysed the impact of bifurcation in Germany. They found that smaller firms are less likely to challenge the validity of a patent even when they are accused of infringement. The bifurcated system can also be criticised based on an inconsistent claim construction. In the Court of Appeal for England and Wales, Lord Justice Jacob referred to Professor Mario Franzosi's comparison of an Angora cat: the patentee will try to make a patent's claims look as broad as possible when infringement is determined; whereas when the validity is determined, the patent's claims are presented as narrowly as possible. This allows different constructions for claims in different courts.⁹⁹ This is not just a theoretical question as there are cases relevant to this issue before the national courts in Germany, like *IPCom v. HTC* and *Dr Johannes Heidenhain GmbH v. iC-haus GmbH*. The latter case shows this issue is relevant also for smaller companies.¹⁰⁰

95. See for example L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 142; C. Helmers and L. McDonagh, 32 *Civil Justice Quarterly* (2013), p. 369; N. Thumm et al., *JRC Science Policy Report* (2016), p. 41; See also C. Wadlow, 'An Historical Perspective II: The Unified Patent Court', in J. Pila and C. Wadlow (eds.), *The Unitary EU Patent System* (Hart Publishing, 2015), p. 39. C. Wadlow claims that bifurcation increases uncertainty that in turn attracts NPEs.

96. L. McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court*, p. 99. Here, the main focus is to analyse the rules of bifurcation within Germany. Therefore, the existing procedural rules of the EU are not explained further.

97. K. Cremers et al., 44 *European Journal of Law and Economics* (2016).

98. K. Cremers et al., *Max Planck Institute for Innovation and Competition Research Paper No. 14-14* (2014), p. 22. See also R. Carpenter, and B. Petersen, 'Is the Growth of Small Firms Constrained by Internal Finance?', 84 *The Review of Economics and Statistics* (2002), p. 298–309; B. Hall, 'The Financing of Research and Development', 18 *Oxford Review of Economic Policy* (2002), p. 35–51.

99. K. Cremers et al., *Max Planck Institute for Innovation and Competition Research Paper No. 14-14* (2014), p. 10; D. Kitchen, in J. Pila and C. Wadlow (eds.), *The Unitary EU Patent System*, p. 6; C. Wadlow, in J. Pila and C. Wadlow (eds.), *The Unitary EU Patent System*, p. 39. See also, (UK) *European Central Bank v. DSS*, [2008] EWCA Civ. 192.

100. R. Vary, 'Bifurcation: Bad for Business. Our Experience', *Presentation in the UK IPO Concept House* (2012), https://www.unitary-patent.eu/sites/www.unitary-patent.eu/files/nokia_vary_bifurcation.pdf, p. 2–3; K. Cremers et al., *Max*

On the other hand, a strong presumption of validity, which puts considerable faith in the pre-grant examination of patent offices, allows a fast assessment of infringement claims because validity is not assessed simultaneously.¹⁰¹ Moreover, bifurcation offers the advantage of specialisation. The court, charged with validity cases, can utilise technical judges and therefore, accumulate experience specifically in the assessment of patent validity. This should result in a coherent and well-founded claim construction, thereby increasing legal certainty regarding the validity of patents.¹⁰² It is claimed that the general high quality of European and German patents supports this.¹⁰³

The unitary patent system allows for a choice between bifurcation and an integrated process for hearing infringement and invalidity cases. Therefore, the unitary patent system contemplates discretionary bifurcation. The AUPC gives local or regional courts discretion to refer counterclaims for revocation to the central division and, depending on the circumstances of the case, either suspend or proceed with the infringement action. However, the local division may also decide to hear both actions, or transfer them both to the central division with the agreement of the parties.¹⁰⁴ In making such a decision the division concerned will take into account all the relevant circumstances of the case, including the principles of proportionality, flexibility, fairness and equity. There should be a fair balance between the legitimate interests of all parties.¹⁰⁵ There is also a possibility for the panel to stay the infringement proceedings when the success of the revocation claim is highly probable.¹⁰⁶ Furthermore, the UPC has strict time limits. The proceedings should be terminated within a year, and there is only a three-month period for the revocation of counterclaims.¹⁰⁷

In practice, bifurcation might lead to a situation where the infringement action is decided and enforced before validity has been determined. Thus, infringement is decided under the presumption that a granted patent is valid, but later the patent might be invalidated.¹⁰⁸ Even though it is empirically difficult to prove the negative effect on the firms concerned, it seems the defendant's business will incur costs and lost sales during the period.¹⁰⁹ There are also protective measures that might soften the effect of potential bifurcation. Firstly, it is possible that some form of security could be ordered against the granting of an injunction, to reduce the impact on the alleged infringer should the patent subsequently be found to be invalid. Secondly, the likelihood of proving validity may be taken into account.¹¹⁰

Planck Institute for Innovation and Competition Research Paper No. 14-14 (2014), p. 2–3; (DE) *IPCom v. HTC* at Germany's Patent Federal Court, *Johannes Heidenhain GmbH and iC-haus GmbH* at the Regional Court Düsseldorf. Patent concerned in the first case was EP 1186189 and patent concerned in the second case was EP1168120.

101. K. Cremers et al., *Max Planck Institute for Innovation and Competition Research Paper No. 14-14 (2014)*, p. 10; S. Luginbuehl, *European Patent Law. Towards Uniform Interpretation*, p. 40.

102. K. Cremers et al., *Max Planck Institute for Innovation and Competition Research Paper No. 14-14 (2014)*, p. 10.

103. S. Luginbuehl, *European Patent Law. Towards Uniform Interpretation*, p. 40.

104. Article 33(3) of the AUPC Agreement.

105. Articles 41, 42 and 52(1) of the AUPC Agreement.

106. Rule 37(4) of the UPC RoPs.

107. Article 33(6) of the AUPC Agreement. In Germany the plaintiff of the nullity proceedings can prepare his attack without any direct time limits.

108. Sometimes called as an 'injunction gap'. See for example D. Kitchin, in J. Pila and C. Wadlow (eds.), *The Unitary EU Patent System*, p. 6.

109. K. Cremers et al., *Max Planck Institute for Innovation and Competition Research Paper No. 14-14 (2014)*, p. 3.

110. Articles 62(2) and (3) of the AUPC Agreement; Rule 211(2) and 211(5) of the UPC RoPs.

In the unitary patent regime of the Member States, bifurcation is not widely used; however, it is used in Germany. It might transpire in practice that some local divisions then favour bifurcation more than others, encouraging forum shopping.¹¹¹ In general, bifurcation seems to be particularly harmful for start-up and growth companies. As a corollary, in the unitary patent regime bifurcation is discretionary and has time-limits. There are also protective measures that might soften the effects of bifurcation, but their effect remains to be seen in the practices of the UPC. Furthermore, the UPC must take into account all the relevant circumstances of the case. In addition, a fair balance between the parties is also taken into the consideration. Hence, in the unitary patent regime there are exceptions to bifurcation that could be used as a safeguard for defendants.

5. Conclusion

Start-up and growth companies have to face a variety of patent funds that focus their own business on patents-related transactions. Patent funds are involved in patent monetisation and as a corollary, in litigation. This article has evaluated fee shifting, preliminary injunctions and bifurcation as safeguards. It seems that it is not a Hobbesian state of war, as there are safeguards for start-up and growth companies when acting as defendants. The tested arguments seem to be valid. Thus, the studied procedural safeguards provide support for start-up and growth companies and therefore, make the enforcement mechanism for the plaintiff weaker.

The first argument claimed that fee shifting acts as a safeguard. Fee shifting combined with the high likelihood of losing a case prevents NPE litigation. Fee shifting fits well with European jurisprudence. The main rule of fee shifting is clear, but the reality of fee shifting is much more complicated and the allocation of costs is determined by the UPC to a certain extent. Lifting the corporate veil could potentially prevent the circumvention of fee shifting.

The second argument claimed that exceptions are needed to the main rule that allows preliminary injunctions and bifurcation, because previously preliminary injunctions and bifurcation had the function of a procedural safeguard for the defendant. However, the AUPC does offer exceptions. Thus, preliminary injunctions and bifurcation can operate as a safeguard for the defendant. As the UPC may grant preliminary injunctions, preliminary injunctions are optional. Furthermore, the UPC considers equity and fairness and can evaluate the interests of parties. There is also a possibility of alternative measures. Furthermore, bifurcation is optional, has time limits, and discretionary elements. There is also the possibility of protective measures that might soften the effects of bifurcation. Bifurcation and preliminary injunctions are not very common in European jurisprudence. Currently, preliminary injunctions are used in the Netherlands, not in Germany or in the UK. Bifurcation exists in Germany.

These procedural safeguards seem to reduce uncertainty from the start-up and growth companies' point of view. In fee shifting there is one rule specific to start-up and growth companies, which is that the UPC can lower the scale of ceiling for recoverable costs if the unsuccessful party is an SME. NPEs might use shell companies to shield their investors from liability and therefore, circumvent the fee-shifting rule. Lifting the corporate veil could potentially prevent the circumvention. Furthermore, for start-up and growth companies it is important to have an issue-based approach. All the studied safeguards had elements of an issue-based approach. Legal principles, such as proportionality, equity and fairness to the parties, play an important role. However, in

111. S. Luginbuehl, *European Patent Law. Towards Uniform Interpretation*, p. 6–7.

general, bifurcation might increase uncertainty, as smaller companies are less likely to challenge the validity of patents. Behind this criticism is the experience from the legal system of Germany. Bifurcation under the AUPC seems to be divergent in comparison with the German system. Hence, there are elements that make it discretionary.

In all the studied safeguards there is a potential inconsistency in the relevant definitions and clarifications that are left open for the discretion of the UPC. Discretion leaves room for judges from different legal traditions to interpret the unitary patent rules from their own national perspective. This might cause difficulties, at least initially, before the Court of Appeal has harmonised the practice of the local and regional divisions. For example, uncertainty might increase forum shopping between the local and regional divisions. When the UPC starts to operate and there will be court cases, it will be fruitful to test these procedural safeguards again. Furthermore, in relation to fee shifting the revocation of Unitary Patents offers an interesting research area in coming years.



Krista Rantasaari
The European multiple patent defendants rule
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companies

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The European multiple patent defendants rule as a legal constraint for start-ups and growth companies

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1. Introduction

'Lost paradise', 'complexity', 'chaos', are all words that have been used to describe the multiple defendants rule in Europe. The reason for these descriptions is the current controversy over the judgments of the Court of Justice of the European Union (CJEU).¹ Even though European patent (EP) enforcement is currently predominantly a national matter, European Union (EU) law and the CJEU case law have an impact on multinational patent infringement proceedings in Europe. In an EP infringement context, this means the application of Brussels I Regulation, as inherently patent cases are civil and commercial cases and therefore fall within the scope of Brussels I Regulation.² After the unitary patent regime possibly enters into force, it will provide broad patent protection covering most EU countries with a single application and with a common enforcement mechanism.³ This also includes the multiple defendants rule.

New technologies, computer-implemented solutions, artificial intelligence, and biotechnology, for example, make the cross-border use of patented inventions a common practice.⁴ Hence, European courts have an increasing number of cross-border cases. As a corollary, there is a need for clarification of the multiple defendant rule.

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This article

- The aim of this article is to compare the multiple defendants rule in the unitary patent regime with the Brussels I Regulation and to explore how the multiple defendants rule works under the unitary patent regime for start-up and growth companies.
- The unitary patent system with the establishment of the Unitary Patent Court (UPC) will lead to unitary patents covering most European Union countries with a common enforcement mechanism. This also applies to the multiple defendants rule and amends the current legal state. One potential concern related to the multiple defendants rule under the unitary patent regime is the increasing abusive litigation by non-practicing entities (NPEs). NPEs are interested suing multiple defendants due to the cost-efficiency. Even though start-up and growth companies often have less capital, they might be targets of NPE suits.
- The article evaluates the current Brussels I Regulation, the relevant case law of the Court of Justice of the European Union and the unitary patent regime from this perspective. The main conclusion of the article is that the multiple defendant rule under the unitary patent regime seems to be an accessible enforcement mechanism for start-ups and growth companies.

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1 For the controversy of these cases, see, inter alia, A Kur, 'A Farewell to Cross-border Injunctions? The ECJ Decisions GAT v. LuK and Roche Nederland v. Primus and Goldenberg' [2006] 37 IIR 844; S Luginbuehl, *European Patent Law. Towards Uniform Interpretation* (Edward Elgar Publishing 2011); M Trimble, *Global Patents. Limits of Transnational Enforcement* (OUP 2012); P Torremans, 'Intellectual Property Puts Article 6(1) Brussels I Regulation to the Test' [2013] CREATe Working Paper 2013/8, <<https://zenodo.org/record/8378/files/CREATe-Working-Paper-2013-08.pdf>> accessed 15 October 2019; J Pila and P Torremans, *European Intellectual Property Law* (OUP 2016); E Min and JC Wichard, 'Cross-border Intellectual Property Enforcement' in R Dreyfuss and J Pila (eds), *The Oxford Handbook of Intellectual Property Law* (OUP 2017).

2 Brussels I Regulation means the Council Regulation (EC) No 22/2001 of the European Parliament and of the Council of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, OJ L12/1, replaced by the recast version Regulation (EU) No 1215/2012 of the EP and of the Council of 12 December 2012

on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters [2012] OJ L351/1 (Brussels I Regulation).

3 The unitary patent regime consist of the Regulation (EU) No 1257/2012 of the European Parliament and of the Council of 17 December 2012 implementing enhanced cooperation in the area of creation of unitary patent protection [2012] OJ L361/1 (Regulation 1257/2012), Regulation (EU) No 1260/2012 of 17 December 2012 implementing enhanced cooperation in the area of creation unitary patent protection with regard to the applicable translation arrangements [2012] OJ L361/89 and the Agreement on a Unified Patent Court [2013] OJ C175/1 (AUPC Agreement).

4 In the field of information and communication technologies, for example, innovations are typically implemented in a network of computers. See, for example, Commission Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and of the Council on the enforcement of intellectual property rights COM (2017) 708 final, 28; R Romandini and A Klicznik, 'The territoriality Principle and Transnational Use of Patented Inventions – The Wider Reach of a Unitary Patent and the Role of the CJEU' [2013] 44 IIC 527.

This article compares the multiple defendants rule under the unitary patent regime to the Brussels I Regulation. The multiple defendants rule in general means that patent infringement carried out in a uniform manner in multiple countries is pursued as a single case in a single court. This article focuses on the issues involved from the perspective of start-up and growth companies.⁵ It evaluates the Brussels I Regulation, the relevant case law of the CJEU and the unitary patent regime. In addition to the European-level developments, case law from Germany, the Netherlands and the UK will be utilized.⁶

The article advances three arguments. First, the multiple defendants rule in general is cost-efficient for start-up and growth companies. Secondly, the multiple defendants rule under the unitary patent regime reduces complexity in comparison with the Brussels I Regulation rule. Thirdly, the multiple defendants rule has features that prevent abusive behaviour by non-practicing entities (NPEs). Patent funds, sometimes also known as NPEs, acquire patents and use the threat of litigation to obtain financial compensation.⁷ The use of the multiple defendants rule might also be abusive as it potentially allows multiple defendants to join claims and this may afford NPEs the opportunity to sue multiple defendants at the same time, with advantages in terms of cost-efficiency. This abuse might increase as a

result of the unitary patent regime, as the new regime offers wider patent protection and may render the European market more attractive for NPEs. These entities already exist in Europe, and are active, for example, in Germany, in the Netherlands and in the UK.⁸ Contrary to what has been asserted by research earlier, start-up and growth companies are targets of European NPE litigation.⁹

New Institutional Economics (NIE) will form the theoretical basis of the article. Therefore, the central focus of this article is on the interaction between institutions and organizational arrangements.¹⁰ Under the conditions of limited information and computational ability, institutions, that are inherently constraints, are a prerequisite.¹¹ The institutions evaluated here, the Agreement on a Unified Patent Court (AUPC) and Brussels I Regulation, impose legal constraints for start-ups and growth companies and this article evaluates the characteristics of such constraints. Hence, institutions should be understood as constraints that give a structure to the society and organizations' relations with others. Constraints can also limit the companies' growth, for example, the ability to defend their rights, when not functioning effectively and achieving intended goals such as legal certainty.¹²

This article is structured as follows. Section 2 analyses the territoriality of cross-border patent enforcement,

5 Besides start-up and growth companies, the term SME (Small and Medium Size Company) is used. The term SME is defined in the Commission Recommendation No 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises [2003] OJ L124/36. The term start-up and growth companies is used as this research is focused on companies that are relatively small, young and highly intensive in their innovation activities.

6 These countries handle the majority of EP cases and, therefore, are the most relevant ones for this research. For the relevance of these jurisdictions in litigation, see T Wessing, 'Global Intellectual Property Index Report (GIPI)' (Taylor Wessing, 2018) <<http://www.taylorwessing.com/ipindex>> accessed 15 October 2019.

7 It is difficult to give an exact definition of an NPE. The body of literature on the definition is varied. For some overview on the matter, see, inter alia, T Ewing and R Feldman, 'Giants among Us' [2012] 1 Stan Tech L Rev 1–61; C Helmers and L McDonagh, 'Trolls at the High Court' [2012] Law, Society and Economy Working Papers <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2154958> accessed 15 October 2019; S Fusco, 'Markets and Patent Enforcement: A Comparative Investigation of Non-practicing Entities in the United States and Europe' [2014] 20 Michigan Telecomm Tech Rev 439–465. For a brief comparison of patent funds to venture funds, see K Rantasaari, 'Growth Companies and Procedural Safeguards in European Patent Litigation' [2018] 25 MJ 173, 174.

8 C Helmers and others, 'Patent Assertion Entities in Europe' [2015] 2 Santa Clara LDC 1–31; Darts-IP, 'NPE Litigation in the European Union. Facts and Figures' [2018] <<https://www.darts-ip.com/npe-litigation-in-the-european-union-facts-and-figures-2/>> accessed 15 October 2019. See also, for example, Ewing and Feldman (n 7); Helmers and McDonagh, *ibid*; Fusco, *ibid*. A good example of an active European NPE is the Marathon Patent Group purchasing hundreds of patents from the German based Siemens. See J Ellis, 'Siemens Marathon Deal Highlights the Growing Importance of ex-US Assets for Monetization-focused

Business Models' (IAM Market, 2018) <<http://iam-market.com>> accessed 15 October 2019.

9 Start-ups not currently targets of NPE litigation in Europe see, for example, M de Heide and others, 'Study on the Changing Role of Intellectual Property in the Semiconductor Industry – Including Non-practicing Entities' (European Commission, 2014) 50 <https://ec.europa.eu/internal_market/indrop/docs/patent/studies/litigation_system_en.pdf> accessed 15 October 2019; N Thumm and G Gabison, 'Patent Assertion Entities in Europe. Their Impact on Innovation and Knowledge Transfer in ICT Markets' [2016] JRC Science for Policy Report, European Commission 32. However, the report states that the unitary patent regime offers wider patent protection making European SMEs more interesting targets for NPEs in the future. For start-ups litigation in Europe, see, inter alia, a recent study Darts-IP, *ibid* 10.

10 Institutions are rules and norms that humans devise to reduce uncertainty, transaction costs and control the environment. Organizational arrangements are the different modes of governance that agents implement to support production and exchange. For an overview on the matter see, inter alia, DC North, *Institutions, Institutional Change and Economic Performance* (CUP 1990); C Ménard and MM Shirley, 'Introduction' in C Ménard and MM Shirley (eds), *Handbook of New Institutional Economics* (Springer-Verlag 2008); EG Furubotn and R Richter, *Institutions & Economic Theory* (2nd edn, University of Michigan Press 2005).

11 North, *ibid* 6; Furubotn and Richter, *ibid* 7; North, *ibid* 36.

12 The constraints term is adopted from the Douglas C North. See North (n 10) 45. Economic literature classifies constraints broadly to internal, financial and legal. See, for example, T Beck and others, 'Financial and Legal Constraints for Growth: Does Firm Size Matter?' [2005] 1 J Fin 137–177. One of the major roles of institutions is to reduce uncertainty in institutions North (n 10) 6.

different patents in Europe, and their jurisdiction, and discusses the correlation between the multiple defendant rule and transaction costs. Section 3 evaluates how the multiple defendants rule is applied under the Brussels I Regulation and the AUPC. Section 4 draws conclusions, explains how the multiple defendants rule is regulated from the start-up and growth companies' point of view and considers whether the unitary patent regime promotes cost-efficiency, solves complexity and prevents abusive litigation threat by NPEs.

2. EP enforcement complexity

2.1. Territoriality and cross-border patent enforcement

National patent regimes and territoriality have dominated the patent enforcement. Any reflection on cross-border patent enforcement initiates from the territoriality principle, which is an outcome of territory, sovereignty, and property rights.¹³ Territoriality means that patent protection relies on national or regional legislation.¹⁴ In Europe, once the European Patent Office (EPO) has granted and validated a patent, each patent is subject to the laws and procedures of the state where it applies.¹⁵

The patent system is unsuitable for the cross-border exploitation of patents because it functions on a territorial basis. Hence, patent laws and their application are challenged by the growing interdependence among different actors in different countries within the patent field. As the actors become more numerous, disputes involving multiple defendants in different states also become more frequent.¹⁶ The cross-border exploitation of patents accelerates due to technological development and the high degree of connectivity in numerous fields of technology. For example, client-server systems, peer-

to-peer systems, cloud computing¹⁷ and artificial intelligence might be synchronized in a number of countries. There are multiple parties interacting with the multiple components of a system in a distributed environment.¹⁸ As a corollary, there are more situations where the alleged infringement or the location of the parties is geographically distributed in more than one European jurisdiction.

Cross-border patent enforcement can be identified via four elements: the location of the infringing act, the location of the parties to the case, the location of the infringing Intellectual property right and the location of the damage. Most of the cases address more than one cross-border element.¹⁹ All European courts have a rising number of cross-border cases. In Germany, for example, a patent suit was based on a client-server system located in Ireland. The Düsseldorf Court of Appeal ruled that a patent would be infringed if at least one of the infringing activities took place in Germany, and the actions outside of Germany are intended to have a direct impact on Germany.²⁰ Similarly, in a UK case, the server was located in Canada and the reception of the message had taken place in England. The High Court of England and Wales ruled that there was no infringement as the method claim was drafted from the point of the server, which was located in Canada. However, the Düsseldorf Court of Appeal examined also economic effects, as infringement might occur if there is a direct impact on the market in Germany.²¹

The rising number of cross-border IP disputes and the advantages of hearing those cases jointly have led to the discussion of whether there are any alternatives to territoriality. Therefore, academics and industry practitioners have developed principles such as the CLIP Principles (European Max-Planck Group on Conflict of Laws in Intellectual Property).²² The CLIP Principles

13 P Drahos, *The Universality of Intellectual Property Rights: Origins and Development* (WIPO 1999) <http://www.wipo.int/edocs/mdocs/tk/en/wipo_unhchr_ip_pnl_98/wipo_unhchr_ip_pnl_98_1.pdf> accessed 15 October 2019.

14 Min and Wichard (n 1) 688.

15 Trimble (n 1) 12; G Dinwoodie, 'Developing a Private Intellectual Property Law. The Demise of Territoriality' [2009] Oxford Legal Research Studies Research Paper 52, 716–17 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1502228> accessed 15 October 2019; Romandini and Klicznik (n 4) 530; P Torremans, *Intellectual Property and Private International Law* (Elgar Research Reviews in Law 2015); Pila and Torremans (n 1) 556.

16 Min and Wichard (n 1) 688.

17 See, for cloud-computing claims, ND Galli and E Gevovich, 'Cloud Computing and the Doctrine of Joint Infringement: Current Impact and Future Possibilities' [2012] 11 J Marshall Rev Intell Prop L 673, 679–80.

18 For example, in client-server systems, the communication between the server and the client is established via a computer network, like the Internet. Hence, the computer server can be located at any desired place. See Galli and Gevovich, *ibid* 675; Min and Wichard (n 1) 687–88.

19 AF Christie, 'Private International Law Principles for Ubiquitous Intellectual Property Infringement – A Solution in Search of a Problem?' [2017] 13 J Priv Int L 161.

20 The relevant patent was a method of processing prepaid telephone calls. For the case referred, see the Düsseldorf Court of Appeal, Urteil vom 10 March 2010 Xa ZR 8/10. For comments of the case see, for example, Romandini and Klicznik (n 4) 532–33; Min and Wichard (n 1) 709.

21 The relevant patent was a method of operating a messaging gateway system. For the case referred, see the High Court of England and Wales in the matter of High Court [2010] EWHC 118 (Pat). For comments of the case see, for example, Romandini and Klicznik (n 4) 532–33.

22 T Kono, 'Intellectual Property and Private International Law: Comparative Perspectives' (Hart Publishing 2012) 18–19; Dinwoodie (n 15) 711, 721; Min and Wichard (n 1) 690. The Max Planck European Group on Conflicts of Law in Intellectual Property has commenced work on this field. As a corollary, the Principles of Conflict of Intellectual Property (the CLIP Principles) was finalized in 2011. See A Kur, 'Applicable Law: An Alternative Proposal for International Regulation – The Max Planck Project on International Jurisdiction and Choice of law' [2005] 30 Brooklyn J Int'l L 951.

maintain the principle of territoriality of IP rights but include the need to facilitate efficient cross-border litigation. The purpose of the CLIP Principles is to interpret or supplement international and domestic law and the law of regional organizations for economic integration where applicable. Furthermore, they may serve as a model for national, regional and international legislators.²³ The Principles are not suitable as an instrument that binds countries legally.

In a European private international law context, the Brussels I Regulation and the Lugano Convention 2007 are applied to IP law cases.²⁴ The CLIP Principles can act as a model for legislators or supplement laws. The EP system will take a further step forwards when the Unitary Patent Court (UPC) starts its operation.²⁵ The unitary character of the territory of protection means that it is possible to assess all the infringing acts committed by the same actor or actors in the contracting Member States under one court proceeding, even if these acts are distributed over the territory of several Member States. The UPC has not yet started its operation, as the ratification process is still not completed.²⁶ In the *Prepaid* case, the UPC could have aggregated acts committed in Ireland and in Germany, and based on this aggregation, found unitary patent infringement and issued an injunction through the territory of the unitary patent regime.²⁷ However, with the introduction of wider protection, Europe also becomes a more attractive jurisdiction for NPEs and their patent enforcement activities.

2.2. Diversity of EPs and jurisdiction

Currently, there are national patents granted by national patent offices in Europe and EPs granted by the EPO under the provisions of the European Patent

Convention (EPC). However, EPs are enforced at national level. After the unitary patent regime becomes operational, there will be four different ways of protecting a patent: national patents, EPs outside the scope of the UPC, EPs within the UPC and EPO-granted EPs with unitary effect (UP).²⁸ An EP granted under the EPC benefits from the unitary effect in the participating Member States provided that the owner of the EP has requested and registered the unitary patent protection.²⁹ The UP has a unitary character, meaning that the effect of the unitary patent will include all the participating Member States as a single and indivisible entity to which the territorial boundaries of each contracting state do not apply.³⁰

The Brussels I Regulation applies to national patent and EPs. After the entry into force of the UPC, it will apply to the EPs outside the scope of the UPC. The rules on jurisdiction in the Brussels I Regulation have been amended to ensure a combined and coherent coordination between the Brussels I Regulation and the UPCA.³¹ The Regulation clarifies that there are two common courts to several Member States: the Unified Patent Court (UPC) and the Court of Justice.³² In relation to the international jurisdiction, Article 31 of the AUPC refers to the Brussels I Regulation. The AUPC applies to the EP within the UPC and to the EPO-granted EP with a unitary effect (UP). The UPC will hear disputes regarding the infringement of UPs and the EPs within the UPC. EPs are also subject to a transitional period. As a corollary, there is a potential inconsistency during the transitional period for the EPs that have opted-out. The problem confronted here is the fact that the relevant national laws are not fully nor formally harmonized.³³

23 Part I: Purpose and Scope of the CLIP Principles; Kono (n 22) 43.

24 The Lugano Convention of 16 September 1988 on jurisdiction and the enforcement of judgments in civil and commercial matters (1988) OJ L339. See, for example, Pila and Torremans (n 1) 557.

25 Before the era of the UPC system, patents were solely territorial rights pursuant to art 64(3) of the Convention on the grant of European Patents (the EPC), signed in Munich on 5 October 1973 as revised on 17 December 1991 and on 29 November 2000. Hence, any infringement of an EP was dealt with in national law. This also applies to EPs outside the scope of the UPC after the entry into force of the AUPC and the UPC.

26 art 89(1) of the AUPC requires that 13 Member States ratify the AUPC, including Germany, France and the UK. For the time being, 16 Contracting States have completed the ratification process, including France and recently the UK. Germany has put the ratification process on hold. A case is currently pending before the German Federal Constitutional Court (FCC) concerning the law passed by the German Parliament on the implementation of the AUPC. A complaint (2 BvR 739/17) made to the German Constitutional Court will apparently be decided in 2019. See the Court's list of cases: <https://www.bundesverfassungsgericht.de/EN/Verfahren/Jahresvorausschau/vs_2019/vorausschau_2019.html> accessed 15 October 2019. For the analysis of the post-Brexit in UK, see T Jaeger, 'Reset and Go: The Unitary Patent System Post-

Brexit' [2016] SSRN Discussion Paper. For the entry into force, see above all, the official UPC website, <<https://www.unified-patent-court.org>> accessed 15 October 2019.

27 See, for example, Romandini and Klicznik (n 4) 535.

28 Therefore, any infringement of an EP is addressed by national law with the EPO having no legal competence to address and to decide on patent infringements in the Member States of the EPC art 64.1 of the EPC.

29 art 3.1. of the AUPC.

30 art 2 of the AUPC; Romandini and Klicznik (n 4) 535.

31 See, inter alia, A Ilardi, 'The New European Patent' (Bloomsbury 2015) 61–63; S Luginbuehl and D Stauder, 'Application for Revised Rules on Jurisdiction under Brussels I Regulation to Patent lawsuits' [2015] 10 *JIPLP* 135–144; P Torremans, 'International Perspective II' in J Pila and C Wadlow (eds), *The Unitary EU Patent System* (Hart Publishing 2015).

32 art 71b of the Brussels I Regulation. The Benelux Court of Justice is for Belgium, the Netherlands and Luxembourg. See the Lugano Convention (n 24).

33 art 82.1 of the AUPC. See also L McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court* (Edward Elgar 2016) 110; Luginbuehl and Stauder (n 31) 149–50.

2.3. Multiple defendant rule lowers transaction costs

The present EP enforcement denotes that patents need to be enforced or challenged in proceedings in the national courts of different Member States. Fragmented enforcement is complex and increases transaction costs. Litigation in a number of countries may lead to case duplication and divergent outcomes.³⁴

In general, a plaintiff might choose to file against a number of defendants in the same case for a variety of reasons. The intention of the plaintiff might be to reduce the enforcement costs, or to increase the pressure for settlements. This latter aim relates to a situation where one of the defendants has settled, and there is increasing request for the others to settle.³⁵ From the defendant's perspective, participating in a lawsuit involving multiple defendants leads to cost-sharing and makes the case more complex, simply because there are more parties involved. Furthermore, the defendants might be competitors and, therefore, there is a need to control the disclosure and use of confidential information.³⁶ In the CJEU case *Painer*, for example, the defendant consisted of five different competing companies in two separate countries.³⁷

For start-ups and growth companies as plaintiffs, the intention to file against a number of defendants is to reduce enforcement costs. The costs of litigating in multiple countries can overwhelm small companies.³⁸ Cost-efficiency is crucial as small companies often have less capital than large companies. Besides small

companies, the cost-efficiency attracts other plaintiffs such as NPEs.³⁹ Start-ups and growth companies are more vulnerable targets of NPE litigation due to their size and the costs involved in patent litigation. This increases pressure for settlements. Furthermore, start-ups and growth companies might be the targets of patent suits as users of technology.⁴⁰ NPEs have been causing abusive litigation for years in the USA, targeting multiple defendants and settling with each of them in exchange for a non-exclusive licence.⁴¹ There have been several legislative initiatives to prevent this behaviour, including the Leahy-Smith America Invents Act (AIA), passed by the US Congress in 2011, which implemented limitations to the NPEs' aggressive patent infringement suits strategically directed to multiple unrelated defendants.⁴²

The transaction costs associated with patent enforcement also have a major impact on the ability to start-ups and growth companies to defend their patents. When institution such as the multiple defendant rule functions effectively, institutions reduce uncertainty and lower transaction costs.⁴³

3. Multiple defendants rule in EP enforcement

3.1. Complex Brussels I Regulation

As cross-border patent enforcement increases, disputes involving multiple defendants located in different states

34 Duplication here refers to cases that involve the same patent and same litigating parties in multiple jurisdictions. A relatively recent data reveal that the share of duplicated cases is low in Germany (2%); however, for the UK and the Netherlands, the percentage is higher, the UK (26%) and the Netherlands (15%). See K Cremers and others, 'Patent Litigation in Europe' [2013] Discussion Paper No 13-072, Centre for European Economic Research 60. In addition, national courts' interpretations of the EPC might vary. For instance, the London High Court of Justice has ruled that Nokia has not infringed IPCOM's patents. However, the German Regional Court LG Mannheim has ruled the opposite even though the patents belong to the same family. Both cases concerned the EP No EP1186189.

35 J Bessen and others, 'The Private and Social Costs of Patent Trolls' [2011] 34 Regulation EBSOhost.

36 M Eckstein and B Buroker, 'Multiple Defendant Patent Infringement Cases: Complexities, Complications and Advantages', (*Hunton & Williams LLP*, 2018) <<http://www.hunton.com/images/content/3/1/v3/3157/Multiple-Defendant-Paper-AIPLA.pdf>> accessed 15 October 2019. See also John R Allison and others, 'Patent Quality and Settlement among Repeat Patent Litigants' [2010] Stanford Law and Economics Olin Working Paper No 398, 22–23 <<https://ssrn.com/abstract=1677785>> accessed 15 October 2019.

36 Eckstein and Buroker, *ibid*.

37 Case C-145/10 *Painer v Standard Verlags GmbH v OHIM* (2011) EU:C:2011:798. *Painer* concerns the copyright of a photograph. Ms Painer sued the German and Austrian newspapers publishers before the Austrian Court.

38 Trimble (n 1) 40–41.

39 It is difficult to give an exact definition of an NPE. The body of literature on the definition is vast and varied. For some overview on the matter, see, *inter alia*, Ewing and Feldman (n 7); Helmers and McDonagh (n 7); Fusco (n 7).

40 In a survey by C Chien, 40% of the start-ups responded that they were being sued because of their innocent use of another's technology or a widely available technology. C Chien, 'Start-ups and Patent Trolls' [2012] Santa Clara Law Digital Commons, Faculty Publications 23–24; Darts-IP (n 8) 10.

41 MA Lemley and R Feldman, 'Patent Licensing, Technology Transfer & Innovation' [2016] Stanford Law and Economics Olin Working Paper No 484 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2738819> accessed 15 October 2019. See also JR Allison and others, 'Extreme Value or Trolls on Top?' [2009] 1 U Pa L Rev 1–37.

42 Prior to the AIA, the multiple defendants rule followed was governed by r 20 of the Federal Rules of Civil Procedure, and a minority of the jurisdiction had followed an interpretation of r 20 that allowed plaintiffs to successfully maintain a multiple defendants rule. Primarily, this was allowed in the Eastern District of Texas. See, for example, D Shen, 'Misjoinder or Mishap? The Consequences of the AIA Joinder Provision' [2014] 4 Berkeley Tech LJ 545. According to the AIA, parties may be joined as defendants in an action for infringement only if they may be liable jointly, separately or alternatively with respect to the common transaction or occurrence and questions of fact common to all defendants will arise in the action. See 35 USC, ch 29, s 299.

43 Furuotn and Richter (n 10) 7.

also become more common. The Brussels I Regulation deals with this scenario and provides that patent infringement carried out in a uniform manner in a number of countries at the same time is pursued as a single case in a single court.⁴⁴ This provision has allowed some European courts to apply the multiple defendants rule. The Dutch courts have consolidated proceedings in one court and granted cross-border injunctions.⁴⁵ In Germany, it was possible to obtain a judgment against a Germany-based defendant with regard to the German patent and the European counterparts of that patent. The UK courts refused to assume jurisdiction over foreign patents, at least when the defence raises questions of invalidity. For such issues, the national courts should have jurisdiction only in their own country.⁴⁶

Evidently, there were differences between countries in the application of the Brussels I Regulation, and the CJEU was expected to solve these problems. The practice that allowed consolidating proceedings in one court was halted by the CJEU. In *Roche Nederland*, the CJEU ruled for the first time on the potential application of Article 6(1) in a case hearing EP cases collectively.⁴⁷ For the multiple defendants rule to apply, the claims must be closely connected, in practice, there must be a substantially identical law and the same factual situation.⁴⁸ For the multiple defendants rule to apply, the risk of irreconcilable judgments is the main criteria. In the assessment of this risk, the claims must be closely connected, in practice, there must be the same legal

situation and the same factual situation. These were evaluated as the two principal factors.⁴⁹

The CJEU argued in *Roche Nederland* that this case was not even subject to the same law. The CJEU referred to Article 64(3) of the EPC. According to that article, any infringement of an EP should be addressed by using the national law.⁵⁰ Therefore, as the EP consists of a number of national patents, each of these patents are subject to national patent law. The infringement of the different parts of an EP has to be examined in the light of the relevant national law in force in each of the states for which it has been granted.⁵¹

A few years later, *Freeport* and *Painer* introduced some flexibility into the 'identical law' requirement. According to *Freeport*, claims brought against multiple defendants with different legal bases are not precluded from the application of Article 6(1).⁵² In *Painer*, the identical law was only one relevant factor among others when assessing whether there was a connection between different claims. The emphasis was on all the elements of the case.⁵³

In relation to the same factual situation according to the CJEU, in *Roche Nederland*, the defendants were different. Furthermore, the accused infringements were committed in different EPC Contracting States. Therefore, the factual situation was not the same.⁵⁴ According to the CJEU, even though the defendant companies belong to the same group or have acted in a similar manner in accordance with a common policy

44 art 8(1) of the Brussels I Regulation, art 8(1) of the Brussels I Regulation was earlier art 6(1) of the Brussels I Regulation. The content of the article remained similar in the recast of the reg (EU) No 2015/2012.

45 The Dutch Court applied the spider in the web doctrine, which means that a central unit based in the Netherlands has conceived the strategy and the local branches merely carried out this strategy. As a corollary, patentees could start infringement proceedings against the defendant in Dutch Court based not only on a Dutch patent or the Dutch part of an EP but also on parallel patents in other EU Member States. See Court of Appeal of the Hague, *Expandable Grafts Partnership v Boston Scientific BV* [1999] FSR 352; Torremans (n 1) 3; J Büehling, 'Cross-border Injunctions in Patent Infringement Cases: Paradise Lost' [*Building and Enforcing Intellectual Property Value*, 2007] <<http://buildingipvalue.com>> accessed 15 October 2019, 173; Trimble (n 1).

46 Büehling, *ibid* 173. See, for example, *Fort Dodge Animal Health Ltd v Akzo Nobel NV* [2008] EWCA Civ 3096.

47 Case C-539/03 *Roche Nederland BV et al v Frederick Primus and Milton Goldenberg* (2006) EU:C:2006:458. In *Roche Nederland*, two joint owners of an EP domiciled in the USA filed an infringement suit against a Dutch company Roche Nederland BV and other members of Roche group based in a different Contracting State. In practice, the infringement was performed in each country, every time by the local branch of the Roche group, but the case was handled and coordinated by the group's central unit.

48 TB Larsen, 'Multiple Defendants in IP Litigation' [2017] 9 *JIPLP* 750. See also *Roche Nederland*, *ibid*, para 26; Case C-98/06 *Freeport plc v Olle Arnoldsson* (2007) EU:C:2007:595, para 40. The judgment of the CJEU in *Roche Nederland* refers to the Advocate General's opinion stating that when decisions are regarded as contradictory it is not sufficient that there is divergence in the outcome of the dispute, but that the divergence must

also arise in the context of the same situation as regards law and fact. Opinion of Advocate General Philippe Léger in *Roche Nederland*, *ibid*, para 113.

49 Torremans (n 1) 10; Larsen, *ibid* 750. See also *Roche Nederland* (n 47), para 26; *Freeport plc*, *ibid*, para 40. The judgment of the CJEU in *Roche Nederland* refers to the Advocate General's opinion stating that when decisions are regarded as contradictory it is not sufficient that there is divergence in the outcome of the dispute, but that the divergence must also arise in the context of the same situation as regards law and fact. Opinion of Advocate General Philippe Léger in *Roche Nederland* (n 47) para 113.

50 art 64(4) of the EPC. See also *Roche Nederland* (n 47) paras 29 and 30.

51 *Roche Nederland* (n 47) paras 29 and 30. In addition, the Rome II Regulation provides a framework for applicable law in IP infringements. Rome II regulation applies the principle of *lex loci protectionis*. Regulation (EC) No 864/2007 of the European Parliament and of the Council of 11 July 2007 on the law applicable to non-contractual obligations [2007] OJ L199 (Rome II Regulation).

52 *Freeport plc* (n 48) paras 40 and 47. Even though Advocate General Verica Trstenjak claims that the basis of *Freeport* seems to be somehow unclear regarding the identical law requirement the CJEU referred to in *Roche Nederland*, it can be claimed that *Freeport* adds some flexibility to the requirement. Unclear approach of the CJEU is claimed by the Advocate General Opinion of Advocate General Verica Trstenjak Case C-145/10 *Painer v Standard Verlags GmbH v OHIM* (2011) EU:C:2011:239, para 85.

53 *Painer* (n 37) paras 80, 81 and 83.

54 *Roche Nederland* (n 47) paras 27 and 33. See also Opinion of Advocate General Philippe Léger in *Roche Nederland* (n 47) para 130.

elaborated by one of them, the factual situation is not the same.⁵⁵ *Solvay* specifies that Article 6(1) applies to all scenarios where two or more defendants infringe the same national part of the EP in the same country by acting in an identical way.⁵⁶ In *Solvay*, infringement refers to marketing the same patent in different countries.

At present there is no option to consolidate infringement proceedings in one court, making European multiple national patent rights de facto unenforceable. In addition, a relevant drawback is the high legal uncertainty for a patent owner due to the complexity of the multiple defendants rule under current Brussels I Regulation.⁵⁷ The CJEU's approach to multiple defendants rule under the Brussels I Regulation has been criticized for being confusing and inflexible.⁵⁸ However, it is still possible for European courts to grant cross-border injunctions as provisional measures, for example, *kort geding* proceedings in the Netherlands.⁵⁹ The evaluation of the same legal and the same factual situation has softened over the years and the core of the assessment is a balance that has to be decided by the national judge, following *Painer* and *Freeport*. However, the CJEU has not clarified how to exercise this balancing. For example, are the same factual situation and the same legal situation assessed separately or jointly?⁶⁰ *Solvay* refers to an infringement of the same national part of the EP and to similar activities in a number of countries. This does not clarify what happens when multiple parties infringe different claims of the same patent in multiple countries.

3.2. Unitary patent regime brings new rules

The Unitary Patent regime applies when the UPC has jurisdiction over each of the defendants and includes defendants who are domiciled in a Member State. Furthermore, it adds the option to sue persons not domiciled in a Member State where the actual or threatened infringement have occurred, or before the Central Division.⁶¹ A patent proprietor can sue a defendant not domiciled in the EU for patent infringement before the UPC and claim for damages caused by the infringement of an EP outside the borders of the EU. However, the jurisdiction of the UPC will only arise where there is no jurisdiction under the Brussels I Regulation and where assets belonging to the defendant are situated in one of the Contracting States to the AUPC.⁶² In relation to a legal person, co-defendant should have at least a place of business in the area of regional division.⁶³ On the international jurisdiction, Article 31 of the AUPC refers to Article 8(1) of Brussels I Regulation.⁶⁴

The division of the UPC, which is competent to hear the case, is determined where one of the defendants has to have its residence, or principal place of business. If there is no local division, then the regional division in which the Member State participates is competent.⁶⁵ Contrary to the AUPC, the Brussels I Regulation uses the phrase 'a person's domicile' to define where a defendant is based.⁶⁶ The AUPC refers directly to both natural and legal persons. The term residence is not defined in the AUPC. The CLIP principles, however, provide an explanation.⁶⁷

⁵⁵ *Roche Nederland* (n 47) para 41. See also Opinion of Advocate General Philippe Léger in *Roche Nederland* (n 47) paras 68 and 128. Advocate General Philippe Léger also states that this solution is rather unsatisfactory and reveals limitations of the present system. See para 69.

⁵⁶ *Solvay* sued companies of the Honeywell group for the infringement of an EP. Case C-616/10 *Solvay SA v Honeywell et al.* (2012) EU:C:2012:445, paras 24, 26, 27 and 30. See also *Freeport plc* (n 48) para 26; *Roche Nederland* (n 47) para 79.

⁵⁷ For a high legal uncertainty, see B Van Pottelsberghe, *Lost Property: The European Patent System and Why It Doesn't Work* (Bruegel Blueprint Series 2009) 13–15.

⁵⁸ See, for example, Büehling (n 45); Torremans (n 1); Pila and Torremans (n 1). For example, the CJEU could have referred to a Dutch spider in the web doctrine as *Roche* was a reference for a preliminary ruling from the Dutch Supreme Court.

⁵⁹ art 35 of the Brussels I Regime. The Dutch Court asked the CJEU to interpret art 22(4) if a defense of validity is raised in interim proceedings in *Solvay* (n 56) para 51. For an analysis, see M Döring and F Van Velsen, 'Is Cross-border Relief in European Patent Litigation at an End?' [2006] 13 *JITLP* 858; Luginbuehl (n 1) 66–69; Trimble (n 1).

⁶⁰ According to the Torremans, the balancing exercise should be done by keeping the two conditions separate and applying them cumulatively. This would prevent the risk of incompatible judgments. *Freeport* provides guidance for the analysis of a single legal situation. As for a single legal situation, it is fulfilled with a minimum alignment between the actions of defendant. See Torremans (n 1) 10–11.

⁶¹ art 33(1) of the AUPC and r 303 of the Rules of Procedure (RoP). The UPC will be comprised a Court of First Instance, consisting of central divisions and local and/or regional divisions. The procedural details of the AUPC have been developed in the RoP. At the time of writing, the latest 18th draft of the RoP will be under scrutiny by the European Commission on the compatibility of the RoP with Union law and will later be subject to formal adoption by the UPC Administrative Committee. More information: <www.unified-patent-court.org> accessed 15 October 2019.

⁶² arts 71b(2) and 71 b(3) of the Brussels I Regulation. For a detailed analysis, see Luginbuehl and Stauder (n 31) 138–41. The UPC may also separate proceedings into two or more separate proceedings against different defendants. See art 33(1) of the AUPC and r 303 of the RoP.

⁶³ art 33(1)(b) of the AUPC and r 303(1) of the RoP.

⁶⁴ See also P Torremans, 'An International Perspective II: A View from Private International Law' in J Pila and C Wadlow (eds), *The Unitary EU Patent System* (Hart Publishing 2015) 171–72; McDonagh (n 33) 83–84.

⁶⁵ art 33(1)(b) of the AUPC and r 303(1) of the RoP.

⁶⁶ art 8(1) of the Brussels I Regulation. For the analysis, see TB Larsen, 'Rules of Jurisdiction in the Agreement on a Unified Patent Court' [2014] 4 *NIR* 358.

⁶⁷ arts 2:101, 2:601 and 2:206 of the CLIP Principles. See also art 2:207 of the CLIP Principles.

The AUPC sets criteria for the joining of multiple defendants. According to Article 33(1)(b) of the AUPC, defendants should have a commercial relationship. Furthermore, the action has to relate to the same alleged infringement. Thus, the AUPC prevents multiple parties from various geographic locations joining in a single action unless parties are sufficiently related in terms of a commercial relationship and an infringement activity.

The term 'commercial relationship' is not defined in the AUPC. There is no definition in EU company law either. Article 8(1) of Brussels I Regulation does not mention commercial relationship, but there are similarities to the requirement of the same factual situation. In the CJEU case law, there was no need for a certain form of coordinated behaviour.⁶⁸ It is evident that the criterion of commercial relationship in the AUPC is not met if the defendants have acted independently and without knowledge of each other. Similarly, in *Painer*, the CJEU said it may be relevant whether the defendants have acted independently or not.⁶⁹ Advocate General Trstenjak went further and opined that in order to be able to predict that they can be sued where the anchor defendant is sued, co-defendants should have knowledge of each other.⁷⁰ It is unclear whether the defendants actually have to belong to a same group of companies. The concept of commercial relationship seems to indicate that there is no such a requirement. In Germany, multiple parties can be sued jointly. The joint contribution to a patent infringement can result from a commercial relationship between them, where several parties promoted the sales of the same product.⁷¹ The interpretation of commercial relationship needs flexibility—for example, to include distributors for same patented product if there is a commercial relationship.

In Article 33(1)(b) of the AUPC and Article 8(1) of Brussels I Regulation, a certain form of coordinated action is not needed in order to fulfil the criteria of the commercial relationship. In addition, in Article 33(1)(b) of the AUPC parallel infringements do not have to be imposed by a single directing party and can be consensually agreed by the parties. However, the criterion of commercial relationship in the AUPC means a linkage between the anchor defendant and the co-defendants, for example, collaboration in a joint infringement, needs to be present.⁷² The demand for a commercial relationship also makes NPE lawsuits directed to multiple unrelated defendants inconceivable. But NPEs still have the possibility to file for patent infringement against related defendants.

In addition to the demand for a commercial relationship, the action has to relate to the same alleged patent infringement. This requirement is similar to the requirement of the substantially identical law. In *Solvay*, 'same factual situation' meant infringement of the same national part of the EP in the same country by acting in an identical way.⁷³ Therefore, the infringement has to relate to the same patent or patent family. In the AUPC, the same alleged infringement criterion is met due to the unitary character of the UP.⁷⁴

In practice, when the UPC assesses the multiple defendant rule, there is evidently no requirement for a consolidation between Article 33(1)(b) of the AUPC and Article 8(1) of Brussels I Regulation, as the patent norms in the AUPC place these norms beyond the judicial review of the CJEU unless the UPC interprets Union Law and requests a preliminary ruling.⁷⁵ There are also significant differences in the rules, as the unitary patent regime has a requirement of commercial relationship. Furthermore, the demand of identical law is

68 There is a reference to the requirement acting in accordance with a common policy elaborated by one of them, but if companies are established in different Member States, there is no need to consider this further. See *Roche Nederland* (n 47) para 34.

69 *Painer* (n 37) para 83.

70 Advocate General Opinion of Advocate General Verica Trstenjak in *Painer* (n 52) para 85. Similarly according to Recital 16 of the Brussels I Regulation, the defendant should reasonably foresee where to be sued.

71 H Holzapfel and M Königs, 'Germany' [McDermott Will & Emery, 2018] <<https://gettingthedealthrough.com/area/25/jurisdiction/11/patents-german>> accessed 15 October 2019. See also 598, 605 and 615 of the German Code of Civil Procedure (*Zivilprozessrecht*, ZPO). In Germany, it is possible for several defendants to join in one civil action, provided that the claims are factually and legally related. However, defendants are still treated individually and each part's claim must be examined on its own merits.

72 Larsen (n 48) 750; J Fawcett and P Torremans, *Intellectual Property and Private International Law* (Oxford Private International Series 2011) 5.143.

73 In *Solvay*, Solvay sued companies of the Honeywell group for the infringement of an EP. *Solvay* (n 56) paras 24, 26, 27 and 30. See also *Freeport plc* (n 48) para 26; *Painer* (n 37) para 79.

74 Once registered, a UP will have a unitary effect in all participating states from the date of publication of it being granted in the EP Bulletin. See art 4.1 of the reg 1257/2012. See also McDonagh (n 33) 114. Furthermore, the owner of the EP is free to decide between art 33(1)(b) of the AUPC and art 8(1) of Brussels I Regulation for a transitional period of seven years after the entry into force of the AUPC. For this, see art 83(1) of the AUPC.

75 According to the Recital 10 of the AUPC, the UPC must in particular cooperate with the CJEU in properly interpreting Union law by relying on the latter's case law, and requesting preliminary rulings in accordance with art 267 of the TFEU. Furthermore, the UPC must respect and apply Union law in collaboration with the CJEU. See A Dimopoulos, 'An Institutional Perspective II: The Role of the CJEU in the Unitary Patent System' in J Pila and C Wadlow (eds), *The Unitary EU Patent System* (Hart Publishing 2015) 77; J Alberti, 'New Developments in the EU System of Judicial Protection: The Creation of the Unified Patent Court and Its Future Relation with the CJEU' [2017] 24 MJ 16. Even in such cases, the UPC might in practice abstain from making references to the CJEU as the UPC is a highly specialized patent court with its own power to interpret patent cases. For this analysis, see T Mylly, 'Hovering Between Intergovernmentalism and Unionization – The Shape of Unitary Patents' [2017] 5 Common Market Law Review 1381–1425.

met due to the unitary character of the UP. However, the unitary regime may influence the Brussels I Regulation when the balancing exercise of the same legal situation and the same factual situation is made by national judges.

4. Conclusion

The current multiple defendant rule under the Brussels I Regulation seems to be an inefficient legal constraint, which gives start-up and growth companies no option to consolidate infringement proceedings in one court. This article evaluated cost-efficiency, complexity and abusive litigation threat by NPEs from the perspective of the unitary patent regime and smaller companies. The tested arguments seem to be valid.

The first argument claimed that the multiple defendant rule is cost-efficient for start-up and growth companies. Transaction costs are lowered as there is a real option to consolidate infringement proceedings in one court. From the defendant's perspective, the multiple defendant rule increases complexity, but it also leads to cost-sharing, and thus transaction costs are lowered. For plaintiffs, the multiple defendant rule provides cost-efficiency.

The second argument claimed that the multiple defendant rule under the unitary patent regime clarifies the existing complexity in the area. The AUPC uses the term 'residence' when defining where a defendant is based and refers directly to both natural and legal persons. In addition, the limitations on the joining of multiple defendants are different when comparing Brussels I Regulation with the AUPC. The same identi-

cal law is fulfilled due to the unitary character of the UP. Brussels I Regulation requires acting within a common policy elaborated by either of these organizations. The current CJEU practice has been strict in interpreting what it means to act in accordance with a common policy elaborated by one of these organizations. The AUPC, in contrast, requires a commercial relationship between the defendants. The scope of the definition that the AUPC provides seems to be broader. Commercial relation implies a linkage between defendants, but also leaves room for judges from different European legal tradition to interpret the multiple defendant rule from their own national perspective.

The third argument claimed that the multiple defendant rule prevents abusive behaviours by NPEs. From the plaintiff's perspective, there is a potential risk for unrelated start-ups and growth companies to be sued by NPEs. For this particular matter, the AUPC provides a safeguard as the requirement of commercial relationship makes NPE lawsuits directed at multiple unrelated defendants inconceivable. However, there are other grounds of jurisdiction, which might be abusively used by an NPE.

In summary, under the unitary patent regime's multiple defendant rule legal certainty increases and transaction costs lower. It is hoped that, as the UPC starts to operate, the CJEU will adopt a more flexible interpretation of Article 8(1) when applied to IP law, and the interpretation of the multiple defendant rule between the AUPC and Brussels I Regulation will resemble each other. This will answer most of the questions that remain, at this time, open.

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Abuse Of Patent Enforcement In Europe How
Can Start-ups And Growth Companies Fight Back?

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Abuse Of Patent Enforcement In Europe How Can Start-ups And Growth Companies Fight Back?

Krista Rantasaari

Abstract

The aim of this article is to examine whether smaller companies have any adequate measures to defend themselves against abusive claims. Patent holders can assert their patents inappropriately, thus going against the functions of patents, and going outside the claims and boundaries of what is protected. This is more damaging for smaller companies as they have fewer financial resources. As a corollary, start-ups and growth companies must be able to defend themselves against abusive claims. This article evaluates the abuse of patent enforcement and analyses the abuse of rights principle, the abuse of dominant position, the Enforcement Directive (IPRED) and unjustified threats. The article analyses whether these elements provide tools for start-ups and growth companies when acting as defendants in patent infringement cases that could be considered abusive. The abuse of patent enforcement is increasing for several reasons, such as, the increase in the number of patents, the fact that they are becoming more valuable, the emergence of a growing market for the sale of patents, and the introduction of new entities specialised in patent licensing and litigation. The article argues that the elements presented in this study mitigate, to a certain extent, the potential ill effects of abusive legal proceedings. However, there are limitations and uncertainties; for example, the case law often only applies to specific circumstances, and national practices vary. As a corollary, these legal tools are rather complicated for start-ups and growth companies to apply.

Keywords NPE; non-practicing entity, abuse of rights, growth companies, litigation, patent enforcement, start-up

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1. Introduction*

1 Patent law must enable patent holders to assert their rights. However, patent holders can also assert their patents inappropriately, thus going against the functions of patents, and even deliberately going beyond the claims and boundaries of what is actually protected. This is more damaging for smaller companies as they have fewer financial resources. As a corollary, start-ups and growth companies must be able to defend themselves against abusive claims. The question therefore arises as to whether smaller companies have any adequate measures to defend themselves.

2 This article evaluates the abuse of patent enforcement and analyses the abuse of rights principle, the abuse of a dominant position, the Intellectual Property Enforcement Directive (IPRED), and unjustified threats. [1] The article analyses whether these elements provide tools for start-ups and growth companies when acting as defendants in patent infringement cases that could be considered abusive. Abuses of rights are strategies of illegitimate exploitation of an existing legal position. [2] Patent holders' use of patents may be abusive if the initial objectives of the patent system are not followed. [3] Thus, patent holders seek to enforce a patent that is probably invalid or stretch a valid patent right to cover activities outside the patent's proper scope. [4] Abusive claims are particularly damaging when targeted at small, less well-funded rivals such as start-ups and growth companies. [5] Abusive purposes decrease legal certainty and cause increasing transaction costs and, for example, deter or delay companies' entry into the

markets. [6] Hence, it is essential to provide tools for start-ups and growth companies that are facing abusive claims or a threat of litigation.

3 One possibility to control such abusive practices is to use procedural law measures. Additionally, competition law can be used as a defence against exclusions of competitors or extractions of a wrongful settlement of payment. [7] Finally, the European Court of Justice (CJEU) has developed the abuse of rights doctrine as a general principle since the *Van Binsbergen* case, which was concerned with the freedom to provide services. [8] The term abuse appears in the context of a dominant position as part of EU competition law, and also applies to patent-related activities. [9] Examples of abusive litigation commenced with dominant undertakings include *ITT Promedia v Commission*, *AstraZeneca* and *Huawei Technologies*. [10] The IPRED generally applies to intellectual property infringements in EU Member States and requests EU Member States to provide safeguards against the abuse of measures, procedures and remedies. [11] A recent copyright case *Stowarzyszenie 'Olawska Telewizja Kablowa'* concerned the calculation of damages. [12] Similar unjustified threats reflect the abuse of the process and refer to threats of groundless proceedings. [13] However, unjustified threats are not harmonised in Europe and therefore, the focus is on national legislation.

4 Abusive patent enforcement practices can be adopted by any patent holders. [14] However, non-practicing entities (NPEs), also called Patent Assertion Entities or patent trolls, are used here as an example as their core business is patent enforcement. NPEs referred to here are corporate entities that buy and develop patents with the intent of threatening or suing other companies in order to obtain financial compensation. [15] Also start-up and growth companies are targets of NPE litigation. [16] NPEs are active in Europe, for example, in Germany, in the Netherlands and in the UK. [17] In Germany the Minister of Justice has demanded measures against patent trolls. [18]

5 The article argues that the studied elements of the abuse of rights principle, the abuse of a dominant position, the IPRED, and unjustified threats mitigate the potential ill effects of abusive legal proceedings to a certain extent. However, there are limitations, and, in addition, national practices vary. The studied elements are examined as institutions. When working effectively, institutions have a major role in reducing uncertainty and transaction costs by establishing a stable structure for the interaction. [19] All elements address the abuse of patent enforcement from their own perspective.

6 The article is structured as follows. Chapter 2 discusses the abuse of patent enforcement and presents NPEs as an example of abusive practices. Chapter 3 analyses the abuse of rights principle. Chapter 4 studies the abuse of a dominant position and abusive of litigation by a dominant undertaking. Chapter 5 focuses on the abuse of rights under the IPRED. Chapter 6 reflects on the unjustified threats. Finally, Chapter 7 *Reem Ahmed RA* presents a summary and considers whether institutions provide safeguards against abusive litigation for start-ups and growth companies.

2. Abuse of patent enforcement

2.1. Increase of abusive patent enforcement strategies

7 Various changes in the market and legal environments have accelerated rent-seeking activities and abusive patent litigation. Abuse of patent enforcement typically relates to situations when an invalid patent is asserted or there is no patent infringed. In addition, right holders may attempt to extend the actual scope of protection and to weaken the competitor's market position. Furthermore, excessive remedies might lead to the abuse of enforcement. [20]

8 There are multiple reasons for accelerating abusive patent litigation. First, patents are becoming more valuable and the number of patents has increased, and this has accelerated the rate of patent litigation. [21] In Europe, the number of patent applications has increased steadily over the years from 160,004 in 2015 to 181,046 in 2019. The number of published patents has grown from 68,422 in 2015 to 137,787 in 2019. [22] Second, a growing market for the sale of patents has emerged and there are new entities such as patent funds specialised in patent litigation and licensing. [23] Third, an increasing number of products incorporate a combination of many different components, each of which may be subject to one or more patents, which makes them constantly subject to patent disputes. [24] Thus, this allows a patent holder with comparatively insignificant patents to represent a disproportionate threat to a complex product if the invention in question is used as one of perhaps hundreds. [25]

- 9 Particularly in the IT sector numerous patents can overlap for only minor improvements. [26] In the life science industry, so-called evergreening patents dominate and the goal is to obtain narrow patent quickly while continuing to argue about the boarder one. [27] In practice, this hinders generic drugs from entering the market. Life science focused start-ups and growth companies are often not the originators of the innovations. Therefore, they are providing generic products for sale in their local market. [28] The generic company sells generics that have the same qualitative and quantitative composition in active substances and the same pharmaceutical form as the originator drug. The originator company may even create patent clusters around the patented drug. Patent clusters are multiple patent applications around the original base patent. This enables the originator company to bring numerous actions against a generic company in numerous countries, even when the originator company does not believe they have any likelihood of being successful. This kind of patent enforcement litigation financially overburdens smaller companies and creates obstacles for market entry. [29] The *ICA Pzifer* case that came before the Italian Courts concerned the delay to market of new generic products in glaucoma eye treatment. The delayed marketing created delayed market entry and a state of legal uncertainty. [30] Delayed market entry causes high-cost outlays and can be particularly harmful for smaller companies.

2.2. Patent holders adopting abusive strategies

- 10 The possibility for the abuse of patent enforcement provides new strategies for companies and have prompted the arrival of new strategic actors. Abusive patent enforcement strategies can be applied by any patent holders, such as companies or individuals. [31] The rise of companies on the enforcement scene such as NPEs has formed the focus of the debate. [32]
- 11 NPEs, in general, operate as patent funds. Patent funds are organisational arrangements that market actors create to facilitate transactions and contractual agreements. [33] For example, a patent fund may help innovators to obtain a return from their research and development activities by negotiating licenses with companies interested in exploiting their technology. In the case of an infringement, such a patent fund may assist innovators in enforcing their patents and receiving compensation for their investments. Patent funds might also cooperate with the operating company and target the rivals of the operating company on a downstream product market. [34]
- 12 However, NPEs threat to sue other companies in order to obtain financial compensation and incur costs. NPEs also quickly settle for a lower price than the estimated cost of litigation, and do not necessarily bring cases before the courts. As a consequence, un-litigated assertions now form the majority in all patent enforcements. Licensing negotiations and license deals that do not result in litigation are almost invariably kept secret. Thus, patent litigation data provides only partial information on the activities of NPEs. [35] NPEs place the targeted companies under significant pressure, particularly if the company is a start-up or growth company with limited resources. There is a strong incentive for small companies to settle due to the length and cost of litigation.
- 13 NPEs use excessive power in the pre-litigation phase and force the opponent into a deal. In practice, NPEs contact with a start-up and growth company typically begins with a cease and desist letter accusing the company of infringing one or more of its patents. Subsequently, the NPE then sends a request to the targeted company with, for example, three options: to stop using the technology which is claimed to infringe the patent and to change to an alternative technology, to pay royalties to the NPE, or to face litigation. The high costs and uncertainty of patent litigation, as well as the costs of changing to alternative technology, in most cases force the targeted company to pay royalties to the NPE. [36] Occasionally, an NPE attack results in patent litigation. [37] In Europe, a litigation threat might apply to a number of countries simultaneously. [38]
- 14 In the research literature, the increasing litigation and abusive strategies by NPEs have been one of the key concerns as regards the EU's upcoming unitary patent system. [39] The unitary patent system will provide broad patent protection covering most EU countries with a single application and with a common enforcement mechanism. [40] However, the future of the unitary patent system remains unclear. The UK's exit from the EU ("Brexit") also led to its withdrawal from the unitary patent system. In addition, Germany has had constitutional problems with the ratification process. [41] Furthermore, the uncertainty typical to any new court system will also attract NPEs. [42]

3. Prohibition of abuse of rights as a general principle of EU law

- 15 The abuse of rights principle in the CJEU case law and in the EU Member States' national practices forms an appropriate starting point and has an interpretative function. Union law seeks to prevent the rights it confers from being abused. In Europe, the abuse of rights principle is not a field-specific doctrine, such as the intellectual property specific doctrine of misuse in the US. [43]
- 16 The CJEU has referred to the prohibition on the abuse of law since the *Van Binsbergen* case. [44] In *Köfoed*, the CJEU argued that there is a general Community law principle prohibiting abuse of rights. [45] The sole purpose of normal commercial operations cannot be wrongfully obtaining advantages from legislation provided for by Community law. [46] The idea of restraining abusive practices emerged in the context of the free movement of services and, thereafter, has been subsequently invoked in many other areas of EU law. [47]
- 17 The doctrine of abuse has been adopted or even codified in legislation in a number of countries, for example in Germany and in the Netherlands. In those countries, the prohibition of abuse is founded on the restrictive function of good faith or reasonableness and fairness. [48] It may be assumed that such provisions have common practice; however, such approaches vary widely in detail. [49]
- 18 In Germany, the exercise of a right is not permitted if the only possible purpose is to cause damage to another. In addition, an obligor has a duty to perform according to the requirements of good faith. This general provision provides guidelines to courts and there is need for interpretation in the light of the different circumstances of each case in order to determine if the exercise of a right is contrary to the principle of good faith. [50] Abusive behaviour can also be in conflict with the purpose of the legal provision. [51] In Germany, the condition for an abuse requires that the harmful effect of a particular abuse can be proved. [52] In the Netherlands, a right may be abused when it is exercised with no other purpose than to damage another person or with another purpose than that for which it is granted, given the disparity between the interests that are served by its effectuation and the interests that are damaged as a result. [53] In the Netherlands, an abuse of rights exists when a right is exercised with the intention of causing harm, but also if the right is exercised in a careless and unreasonable manner. [54]
- 19 In Common law systems, there is no general recognition of the principle of the prohibition of the abuse of rights and no general doctrine limiting deliberately harmful behaviour, unless it corresponds with an existing tort. Furthermore, if a right has been developed in case law, it is considered as a *ratio decidendi* of the judgement, and is hedged with various qualifiers, such as reasonableness. [55] In the Nordic countries, the principle of the prohibition of the abuse of rights is not codified. In Finland, for example, the abuse of rights is seen as a part of the general doctrines of civil law. [56] This principle applies to situations where a right is exercised in way that the intention and motives cannot be thought of as acceptable. [57]
- 20 The general doctrine of abuse of rights in national laws could apply to IP and patent cases. However, there are only a few known IP related cases. In a copyright case, the Jena Court of Appeal in Germany denied injunctive relief because of the dysfunctional conduct of the right holder based on the § 242 German Civil Code. [58] Defendants in patent litigation have arguably engaged in litigation that has violated the general prohibition of the abuse of rights or the principle of good faith. In the courts, these claims have rarely been successful due to the lack of proof of a specific intention to harm, a malicious intent, or the bad faith of the right holders. [59] The question that arises is whether such national laws would apply either if an IP right as such is used abusively or if there are abusive prosecution procedures or similar occurrences. [60]
- 21 The formal doctrine of the abuse of rights was developed by the CJEU in *Emsland-Stärke*. Subsequent decisions such as *Halifax* and *Cadbury Schweppes* further defined the test. [61] The CJEU established an abuse of law test that may be useful as a yardstick for other areas of law if detached from their agricultural and tax law setting. The CJEU's elaborate test comprises of two parts in order to find the abuse of rights in a case. The first objective test focuses on the purpose of the right, and the second subjective test focuses on the intention of the party. [62] The objective part resembles the teleological method of interpretation and requires the Court to pronounce on the purpose of a given rule. [63] Respectively, in *Emsland-Stärke* an abuse required a combination of objective circumstances in which, despite the formal observance of the conditions laid down by the Union rules, the purpose of those rules had not been achieved. [64] The subjective part consists of the intention to obtain an advantage and seeks to determine whether the legal norms of the conditions of application have been fulfilled artificially, and whether such an act is compatible with the purpose of the affected legal regime. [65]
- 22 The artificiality test enquires into the economic reality of the transaction: if the transaction had some genuine economic explanation other than the regulatory benefit claimed, it would not be considered as artificial. [66] In

Emsland-Stärke, the legal issue was whether the conditions of application of the applicable rule could be considered as fulfilled when they were accomplished through artificial means. [67] In *Vonk Dairy Products* the existence of the subjective element was established by evidence of collusion between the exporter receiving the refunds and the importer of the goods in a non-member country other than the country of importation. [68] The doctrine of abuse of rights may also refer to the harmful intent or general criteria of proportionality or reasonableness. For instance, the Greek authorities did not dispute the existence of the shareholders' rights to decide on an increase in the capital of the company, but rather sought to assess whether this right was being exercised abusively. [69] Hence, the CJEU evoked the eventuality that shareholders exert the right conferred by Article 25(1) of the Second Directive for the purpose of deriving, to the detriment of the company, an improper advantage, manifestly contrary to the objective of that provision. [70]

- 23 The prohibition of abuse, if allowed to develop too strongly, also causes concern as it could undermine the foundation of the internal market. [71] This concern is also reflected in the CJEU case law in the context of the freedom of movement and the freedom of establishment. The freedom of movement of students or the freedom to establish a company in a Member State and to set up branches in other EU Member States cannot by themselves constitute an abuse of rights. [72] In a reflection on the freedom of establishment, the restrained use of the notion of abuse by the CJEU was applauded by Advocate General (AG) Maduro. [73] However, there is also criticism against an abuse of law test. AG Geelhoed claimed that the subjective element served no purpose in a case concerning the freedom of workers. According to Geelhoed, considerable reluctance to attach weight to such criteria is discernible in the case law. One example is *Levin*, where the workers' motives were not taken into consideration. [74] One reason for this reluctance is that the aim of those concerned may readily be subject to manipulation. [75]
- 24 Even though in certain contexts there is hesitation as regards the application of the prohibition of abuse, the principle has a prominent role. This criticism also indicates the wide spectrum of the abuse of rights cases. These cases cover various fields of law, for example, the free movement of goods, the freedom to provide services, the freedom of establishment, company law and tax law. [76] In addition, the abuse of rights principle can be applied to various situations. Abuse of rights is formally exercised in conformity with the conditions laid down in the rule granting the right, whilst the legal outcome may be opposed to the objective of that rule. It is for the national court, in the light of the ruling of the CJEU, to establish the existence of the objective and subjective elements, whether the application of the rule would serve its purpose and whether reliance on the rule would be abusive in certain circumstances. [77] Hence, an examination of the facts is needed to establish whether the constituent elements of an abusive practice are present. [78]
- 25 The principle of the prohibition of the abuse of rights functions as a corrective mechanism to a strict application of a rule of law by reducing the abusive exercise of the rights granted by that rule. Often a doctrine of abuse is associated with situations where there is no visible infringement of a formal legal requirement. Thus, it has also an interpretative function that ensures the underlying objectives or purposes for the rules are being respected. [79] The general prohibition of the abuse of rights means that the issue of the abuse of rights is addressed through the general legislation. However, it seems rather impracticable that a court would apply such general provisions in the case of an abusive exertion of an IP right. For example, those Civil Law countries that lack balancing instruments of equity might face difficulties making use of such unspecified legislation. [80]

4. Competition law limiting abuse

4.1. Dominant position and its abuse

- 26 Primarily, courts have relied on competition law to limit abusive practices by patent holders. [81] This is mostly the case in the context of litigation involving standard essential patents (SEPs). The CJEU case of *Huawei v. ZTE* has offered the most elaborate set of guiding principles for courts. [82]
- 27 Intellectual property rights do not automatically confer a dominant position. However, they might put the undertaking in the position of abuser. [83] Thus, exercising the exclusive rights conferred by an intellectual property right can be an abuse of a dominant position when used as an instrument for the abuse. [84] In *AstraZeneca*, the CJEU stated that although the mere possession of an intellectual property right does not indicate a dominant position, such

possession is still capable in certain circumstances of creating a dominant position, in particular by enabling an undertaking to prevent effective competition on the market. [85]

28 In practice the abuse of a dominant position relates to a position of economic strength from the plaintiff and of acting independently of its competitors, customers and ultimately consumers. [86] An abuse of a dominant position can be verified under Article 102 of the TFEU when the abuse happens within the internal market or in a substantial part of it. For an abuse of a dominant position to apply, it is necessary that three conditions are present together: the existence of a dominant position on the relevant market, the abuse of that position and the possibility that trade between Member States has been affected. [87] Thus, it has to be analysed whether the NPE in question is dominant on a specific market. In the case of a holder of an SEP, there is a stronger likelihood that it confers a dominant position, as it is essential to a standard and there are no alternatives. [88]

29 The concept of relevant market implies that there can be effective competition between products or services that form part of it. Products may involve a combination of many different components, each of which may be the subject of one or more patents. [89] The relevant market presupposes that products and services are regarded as interchangeable or substitutable by the consumer, because of the products, services, price or the intended use. [90] The definition of the relevant market for example can be so narrow that the market is defined as a one-product market. For example, in *AstraZeneca*, the company's patented product was characterised in a narrow market, not in a general market, which led to the conclusion that there were no competitors. Hence, the patent stood as a barrier to entry to the product market. [91]

30 Dominance refers to the ability to have an appreciable influence on the degree of competition on the market. [92] Irrespective of the reasons for which an undertaking holds a dominant position it has a special responsibility not to allow its conduct to impair genuine undistorted competition. [93] Hence, a dominant undertaking must refrain from any behaviour that may unduly prevent other undertakings from entering the market and competing on their own merits. [94]

31 In practice a dominant undertaking will not enjoy the same freedoms operating on the market and interacting with competitors as other undertakings. Thus, the behaviour of the dominant undertaking may be illegitimate, even though the very same behaviour would be perfectly legitimate for any other company. [95] This, however, does not prevent dominant undertakings from competing, even with small competitors. However, there are limitations to such behaviour, for example, a below-cost price can burden an undertaking with smaller financial resources. [96] NPEs as a dominant undertaking may also impose undue costs on downstream manufacturers by charging more in licensing fees than their patented technology justifies. [97]

4.2. Abusive litigation by dominant undertaking

32 The high level of protection for intellectual property rights means that the proprietor may not be deprived of the right to have recourse to legal proceedings to ensure the effective enforcement of patent rights. From this it follows that in general a dominant undertaking should have the ability to seek legal redress similar to any other undertakings unless the patent system is misused. [98] Generally, abuses of the process occur when a judicial action is unreasonable or vexatious. [99]

33 The CJEU case law on abusive litigation in EU competition law is limited. The earliest cases were *BBI/Boosey & Hawkes* and *Decca Navigator System*. [100] In the first case, there was no abusive conduct and in the second case, other elements of Decca's behaviour, other than the abusive litigation, offered enough legal grounds for the infringement. [101] The more recent cases are *ITT Promedia v Commission* followed by *AstraZeneca* and *Huawei Technologies v ZTE*. [102] In the US's antitrust laws, the improper enforcement of patents is divided into the enforcement of a patent obtained by fraud (Walker process claims) and the enforcement of IPR rights, which, while not obtained by fraud, are considered invalid, unenforceable, or not infringed (sham litigation). [103]

34 *ITT Promedia v Commission* concerned litigation between the telecommunications operator Belgacom and the publisher of the business directory ITT Promedia. Promedia published telephone directories based on the data provided by Belgacom's predecessor RIT. Negotiations to renew the agreement did not succeed and gave rise to numerous legal proceedings between Belgacom and ITT Promedia. ITT Promedia submitted a complaint to the Commission claiming among other things that Belgacom had committed an abuse of a dominant position by initiating vexatious

litigation. [104] In *AstraZeneca* the Commission imposed a fine on AstraZeneca for abuse of its dominant position in the proton pump inhibitors' market. The commission focused on two aspects: a pattern of misleading representations presented to the national patent offices and courts with regard to the authorisation applications for the granting of Supplementary Protection Certificates and a misuse of applicable regulatory procedures. [105] In the *AstraZeneca* case the patent litigation tactic was discussed as part of a well-structured abusive strategy. [106] In *Huawei Technologies v ZTE*, Huawei the owner of the SEP had provided a fair, reasonable and non-discriminatory (FRAND) licensing commitment to the standardisation body, and the issue was the right to seek injunctive relief. The injunctive relief was sought against ZTE, who were allegedly using Huawei's SEPs, but were unwilling to license the disputed patents on the terms offered by Huawei. [107]

35 The CJEU ruled in the *ITT Promedia v Commission* that access to the Court is a fundamental right and a general principle ensuring the rule of law. [108] Rent-seeking activities that lead to the abuse of enforcement should be restricted. At the same time, however, the law cannot aim to deprive the right to seek legal redress. Access to justice is a universally recognised right. [109] Access to justice is one of the pillars of the European Union and mentioned in the TFEU, and also in Article 47 in the Charter of Fundamental Rights of the European Union (EU Charter). [110] The CJEU has referred to Article 47 of the EU Charter in relation to intellectual property cases; however the CJEU also affirms that Article 52(1) of the Charter of Fundamental Rights permits a limitation on the exercise of the rights guaranteed by Article 47. [111] In the *ZZ*, the CJEU stated that any limitation must necessary and genuinely meet the objectives of general interest recognised by the European Union. [112]

36 Further, the CJEU noted in *Huawei Technologies v ZTE* the need for a high level of protection for intellectual-property rights means that patent owners may not be deprived of the right to have recourse to legal proceedings to ensure the effective enforcement of their exclusive rights. [113] Hence, only in wholly exceptional circumstances are the legal proceedings capable of constituting an abuse of a dominant position within the meaning of Article 102 of the TFEU. [114] The Commission established the presence of wholly exceptional circumstances with the help of two cumulative criteria that have been confirmed by the General Court. These two cumulative criteria must be applied strictly and applied together due to the fact that they constitute an exception to the general principle of access to courts, which ensures the rule of law. [115]

37 According to the first cumulative criterion, the action cannot reasonably be considered an attempt to assert the rights of the undertaking concerned by legal proceeding which only serve to harass the opposing party. [116] According to the second cumulative criterion, the aim of the action must be to eliminate competition. [117] The first cumulative criterion means that the action must be from an objective point of view manifestly unfounded. [118] Thus, if the action is well founded and has no aim to eliminate competition, the patentee is not committing an abuse by taking the competitor to court. Furthermore, purely internal acts within the company or merely preparatory acts of potential abuse, even though manifested externally, cannot constitute abusive practices. [119] The second criterion means that litigation must be planned to have as its goal the elimination of the competition. Therefore, a dominant undertaking has special responsibility not to further hinder the entry of competitors to a market and to weaken the competition. However, this criterion appears to take into consideration the subjective intention of the dominant undertaking. [120]

38 The two cumulative criteria include broad concepts such as "manifestly unfounded", which leave much room for interpretation. [121] If the manifestly unfounded, for example, is not based on fraud, there is a fear that inadvertent error or negligence in the patent application might lead to a claim of abuse of enforcement. [122] However, patent rights granted by a public authority are normally assumed to be valid. In practice, third parties seldom know when a patent right is unlawfully granted. In *AstraZeneca*, the defence made a central argument that an abuse of a dominant position exists where a fraudulently obtained patent is enforced. [123] One indicator to the infringement of Article 102 of the TFEU seems to be when the legal proceeding harasses the opponent, for example, in a situation where the dominant undertaking has wilfully enforced a patent knowing that the patent is invalid, or the patent is extended to cover activities outside the granted scope. However, the Commission, later confirmed by the General Court, stated that the need for the actual enforcement of the unduly obtained exclusive right is not a necessary requirement to be able to categorise conduct as an abuse. [124]

39 It is difficult to distinguish between abusive and non-abusive litigation by a dominant undertaking without resorting to subjective concepts such as the intention. Relying on subjective concepts arises where a dominant undertaking makes use of regulatory procedures to the detriment of a smaller rival, for example a start-up or growth company. In the *AstraZeneca* case, a pharmaceutical company had withdrawn a registration for a product in a specific form and at the same time obtained registration for the same product in a slightly different form. This strategy was aimed at

delaying the entry of generic producers and parallel traders. [125] In this case, it would have been difficult to establish that the dominant undertaking abused its dominant position without considering the subjective intentions, such as withdrawing and obtaining regulatory approvals without any false statement or other misrepresentation towards the regulatory body. [126]

40 Injunctions play an important role as they expose infringers to the risks that their patented technology will have to be removed from the market at a great cost. The CJEU has focused on the extent to which an SEP holder could seek an injunction to enforce its SEPs without committing an abuse. In the *Huawei Technologies v ZTE*, the CJEU ruled that prior to the infringement proceedings the owner of the SEP has to notify or consult the alleged infringer. First, the owner has to notify the infringer when the infringer was identified as making an unauthorised use of their patents. [127] Second, the alleged infringer has to show willingness to conclude a licensing agreement and the proprietor of the SEP has to present a specific licence on FRAND terms. [128]

41 It has been claimed that the seeking of an injunction leads to exclusion rather than exploitation. However, NPEs are not interested in excluding target companies from the licensing market. As a corollary, restrictions imposed by the CJEU apply to operating companies instead of NPEs. [129] However, the applicability of the *Huawei Technologies v ZTE* case to NPEs has now been resolved positively by national courts. For instance, the High Court and the Court of Appeal of England & Wales applied the Huawei v. ZTE licensing framework to a patent dispute between an NPE (Unwired Planet) and an operating company (Huawei). Furthermore, German courts have applied this framework to infringement lawsuits filed by an NPE (Saint Lawrence) against two operating companies (Deutsche Telekom and Vodafone). [130]

42 NPEs can use abusive litigation to seek unreasonable royalties. As NPEs are not exposed to countersuits and do not face the same reputational constraints as operating companies, it is likely that they will more aggressively assert their patents to maximise their royalty revenues. [131] The first criteria, if manifestly unfounded, can be met by a lawsuit brought by the NPE. The second criteria's aim to eliminate competition is harder to meet due to the fact it is not in the interest of an NPE to exclude the target company from the market, as in that case it will not obtain license fees. Therefore, these cumulative criteria can also be criticised as the abuse can be used for both exploitative and exclusionary purposes. [132] It seems that applying both criteria in an NPE related litigation is hard to implement.

43 In conclusion, it can be seen that the case law addressing abusive litigation by a dominant undertaking is limited and applies partly to specific circumstances such as SEP disputes. Although two cumulative criteria provide a good starting point for an analysis of the abuse process by dominant undertaking, several questions remain open, and the applicability of two cumulative criteria simultaneously to NPEs is problematic. Litigation relating to an SEP holder and injunctions address abuse more frequently. However, in this context the national courts have played a role. The abuse of rights principle creates opportunities for alleging an abuse of a dominant position in national courts; thus, making national doctrines of abuse more relevant.

5. Abuse of rights under the Enforcement Directive

44 In 2004, the European legislators added the application of the abuse of law principle to intellectual property rights through the Directive on the Enforcement of IPR (IPRED). [133] Prior to this, the abuse of rights principle had appeared in trademark law under the concept of bad faith. The concept of bad faith has similarities to the abuse of rights principle. The concept of bad faith is codified in Article 59(1)(b) as an absolute ground for invalidity. [134] In the *Chocoladefabriken Lindt* case the CJEU argued that bad faith requires that an intention is shown, and that the intention must be demonstrated on the basis of objective elements. [135]

45 According to Article 2(1), IPRED applies to any infringement of intellectual property rights as provided by Union law and/or by the national laws of the Member State concerned. Hence, it applies to patents. IPRED provides remedies for the infringement, especially as regards damages and injunctions. Article 3(2) of IPRED demands that states take appropriate measures, procedures and remedies against the abuse of enforcement procedures that are effective, proportionate and dissuasive. They should be applied in such manner as to avoid the creation of barriers to legitimate trade and to provide safeguards against their abuse.

46 Due to the broad application of the Directive, the codified abuse of law principle is applicable to almost all remedies and procedural measures in EU intellectual property law. [136] In addition, recital 17 of IPRED demands that the

measures, procedures and remedies provided should be determined in each case and take into account the specific characteristics of that case, such as the intentional or unintentional character of the infringement. [137] IPRED has similarities to Article 41(1) of the TRIPS Agreement that argues for ensuring enforcement procedures to permit effective action against any act of infringement of intellectual property rights covered by the TRIPS Agreement, including expeditious remedies to prevent infringements, and remedies which constitute a deterrent to further infringements. These procedures must be applied in order to avoid the creation of barriers to legitimate trade and to provide safeguards against their abuse. [138]

47 In 2017, the Commission clarified the provisions of IPRED where there have been different interpretations in EU countries. The guidance is based on rulings by the CJEU and the best practices identified in EU countries. This guidance also focuses on the means, which are particularly important to SMEs, such as the rule on calculating damages, awarding legal costs, and the means to prevent abuse. [139] Hence, abuse has a significant meaning in the guidance. Article 3(2) of IPRED is a general obligation and other articles should be interpreted and applied in the light of the general requirements of this article. As a result, in order to ensure the balanced use of the civil IPR system, the competent judicial authorities should generally conduct a case-by-case assessment when considering the granting of measures, procedures and remedies provided for by IPRED. [140] The balanced use of the civil IPR system is essential as NPEs might also take advantage of the enforcement system if the remedies and enforcement costs are high enough.

48 The abuse under IPRED concerns the proportionality of procedures and remedies, and the proper balance between the parties to the suit. [141] Compensation for example should be based on an objective criterion while taking account of the expenses incurred by the right holder. [142] Since IPRED is an instrument of EU law, its provisions are subject to the interpretation of the CJEU. Therefore, hypothetically, guidance on the interpretation of article 3(2), and the meaning of the abuse in the adjudication context, may be found in the case law of the CJEU. [143] However, the case law is limited in this matter. Most decision referring to article 3(2) concentrate on the effectiveness and dissuasiveness of measures, procedures and remedies. [144] In a recent copyright case *Bastei Lübbe* the litigation was between Bastei Lübbe, a German phonogram producer, and Michael Strotzer, the owner of an internet connection through which an infringement was committed. The CJEU ruled that the Member States should provide effective and dissuasive measures, procedures and remedies in respect of infringements of copyright and related rights. [145]

49 Thus far, case law regarding the measures, procedures and remedies to be applied in such a manner as to provide for safeguards against their abuse has been rare. In a copyright case *Stowarzyszenie 'Oławska Telewizja Kablowa'* the litigation was between an organisation collectively managing the copyright of Stowarzyszenie Filmowców Polskich and Stowarzyszenie Oławska Telewizja Kablowa that broadcast television programmes through a cable network. According to the CJEU, in this exceptional case, payment for a loss calculated on the basis of twice the amount of the hypothetical royalty clearly exceeds the loss actually suffered. As a corollary, a claim to that effect could constitute an abuse of rights. [146] In the *Huawei Technologies v ZTE*, AG Wathelet introduced one possible meaning of abuse under article 3(2) of IPRED. In his opinion he noted that the concept of abuse is not defined in IPRED. However, from his point of view the concept necessarily, though not exclusively, encompasses infringements of articles 101 and 102 TFEU. [147]

50 IPRED has been applied to cases evaluating remedies. In a competition law context, the abuse litigation relates to exclusionary and exploitative purposes. However, abusive claims solely based on their exclusionary purposes are not applicable to the NPEs. When evaluating IPRED, the CJEU could also follow the application of the formal doctrine of the abuse of rights by taking also into consideration the subjective part and the intention to obtain an advantage. This kind of a balancing exercise acknowledges the intentional and unintentional character mentioned in the Recital 17 of the IPRED

6. Approach of national laws to unjustified threats

51 Unjustified threats refer to a situation where the alleged infringing act, for example, falls outside of the scope of the claim or because the patent is invalid, meaning that enforcement proceedings have been abused. Here the interest is in an affirmative defence called unjustified threats or warning letters. In practice, the patent holder sends warning letters to the manufactures or commercial distributors of allegedly infringing goods, and then later it transpires there was no infringement, or the patent was invalid. The idea behind the letters of infringement is to threaten with infringement action unless the allegedly infringing behaviour stops.

- 52 Unjustified threats have a background in the Paris Convention that prohibits false allegations in the course of trade. [148] The Guide to the Application of the Paris Convention gives further guidance on the scope of the requirement providing that distinguishing a competitor by undue allegations does not need injurious intention. In addition, the Guide to the Application of the Paris Convention leaves/allows some freedom for the domestic legislation or case law of each country to decide whether and under what circumstances, discrediting and untrue allegations, may also constitute acts of unfair competition. [149]
- 53 The Paris Convention therefore requires protection against the use of unjustified threats in infringement proceedings. In Europe, the law in this area is not harmonised. A threat allows the addressee to join a pending opposition or appeal proceedings before the European Patent Office (EPO). [150] IPRED does not address unjustified threats or warning letters. In some jurisdictions, unjustified threats or warning letters are implemented through domestic law and used as a basis for the action. [151] The UK has a specific threat provision dealing with unjustified threats to patents. In Germany and the Netherlands groundless threats are dealt with as an aspect of the general tort law or through unfair competition law.
- 54 The justification for a remedy against groundless threats can be the protection of suppliers, retailers, and consumers from a patentee seeking to damage the business of competitors. For instance, a pharmaceutical company, which knows that its case on patent validity and infringement is weak, can threaten a retailer that stocks the competing product of a rival company with infringement proceedings. [152] Start-ups and growth companies can even be targeted for their use or adoption of existing technology. [153] In practice, NPEs use a warning letter to contact start-up and growth companies accusing the company of infringing one or more of its patents. [154] Unjustified threats can be particularly damaging to smaller companies that may not have the resources to respond or take advice as to whether there has been an infringement. [155] From the perspective of harm to business, threats may be harmful in the way they propose the denial of an activity that may not eventually prove to be unlawful. In addition, threats may cause harm to a company's reputation and lead to a significant loss in sales. [156]
- 55 In the UK, the threat provision was modified in 2017. According to the Intellectual Property Act, communication contains a threat if a reasonable person receiving the communication understands from it that a patent exists and that a person intends to bring proceedings in the UK for the infringement of that right in the UK. [157] This is a formal definition containing judicial flexibility. A threat can be written or unwritten, it does not need to be directed at any particular person. [158] A threat can even be a letter sent in response to an inquiry made by the infringer himself. [159] The test whether a threat is actionable seems to be quite subjective. According to Justice Aldous, the Court must look at the warning through the eyes of a reasonable and normal recipient and thereafter decide whether there is a reasonable argument that it would be understood as a threat of patent proceedings. [160]
- 56 In the UK, there are two types of infringements: primary and secondary. Primary infringement refers to making or importing goods. Hence, primary infringers are often the manufacturers and importers. By contrast, secondary infringement refers to other acts such as the selling or advertising of goods. Hence, secondary infringers are often the distributors or retailers. [161] In the UK, threats concerning primary infringements cannot be used as the basis for a groundless threat claim, while threats concerning secondary infringement do form the basis of such claims. In patent cases, threats relating to the acts of making or importing products for disposal or using a process are not actionable. The threat provision aims to prevent a right holder shutting down the network of supply without the risk and cost of proceedings to justify their claim. The fear of litigation costs and the availability of an alternative supplier, including the rights holder, act as powerful incentives for a retailer to abandon a product. [162] The infringing actions of the trade source are likely to cause the most damage to a right holder. Hence, they are classified as being primary acts and are excluded from the protection of the threat's provisions. A right holder can therefore threaten a primary infringer without the fear of being sued for making a groundless threat claim. However, these parties can also bring an action for a negative declaration – for example that they do not infringe – in the cases here – the patentee fails to follow up threats with a claim form. [163]
- 57 In Germany, much of the law governing whether a warning is actionable has developed as a matter of case law rather than a statute. [164] The German Act against Unfair Competition (UWG) has a general clause that prohibits unfair competition practices such as tangible impairment of the interests of competitors, consumers or other market participants. [165] The case law in this context is highly developed, but also rather more casuistic than principled. [166] The UWG contains examples of unfair acts; these include cases where a person discredits or denigrates the distinguishing marks, goods, services, activities, personal or business circumstances of a competitor. [167] In addition, there are cases where facts have been asserted or disseminated about the goods, services, or business of a competitor; these facts have to harm the operation of a business or the credit of the

entrepreneur to an extent that shows the facts are not demonstrably true. [168] Here the conduct of the defendant is important and the manner of misappropriation. [169]

58 The UWG applies to acts performed in the course of commerce, therefore wider protection is provided by the general tort law. [170] In practice, the warning must have a clear demand for a specific person to stop a specific activity and warn the infringer that the right holder will file an action if the warning goes unheeded. A warning is unjustified if there is a deficiency in a substantive right and/or in a formal justification for the warning. [171] A substantive right might be lacking if the patent is invalid or has been revoked in full or in part, or if there was no infringement. There would be a lack of a formal justification for example if the warning was misleading. [172] In order for a warning to be actionable for damages there must be culpability on the part of the warning party in the form of either intent or negligence. [173]

59 However, the German Supreme Court has stated that sending a warning letter to the customers of the competition is highly problematic for these competitors. By warning off a competing manufacturer's customers with exaggerated claims, the right can enlarge its exclusive rights beyond the true scope of the IP right in question. [174] In *Spritzgießmaschine* a warning party believed that his/her patent was valid based on the successful maintenance of the patent after an opposition. Hence, he/she was not aware of other relevant prior art, nor did he/she attempt to avoid disclosure of any such prior art. [175] In addition, for an unjustified warning to be actionable for damages under tort there must be a violation of the right of a plaintiff and a causal link between the defendant's conduct and the harm suffered by the plaintiff. [176]

60 In the Netherlands, there is a general duty not to commit wrongful acts and when a wrongful act is committed, the damage has to be repaired. [177] The Dutch Courts have developed these provisions in order to provide protection against the threat of infringement proceedings. The mere fact that a patent is ultimately revoked does not necessarily mean that the threat is unlawful. [178] A threat may be considered unlawful where it is known, or ought reasonably to be known, that at the time of issuing the threat its patent was not valid and/or not infringed. [179] The Courts have also considered a threat unlawful where it is unnecessarily offensive or unnecessarily public. In addition, if the person making the threats is not the owner of the IP rights asserted, the threat will generally be unlawful. [180] There is no formal distinction between primary and secondary infringers. However, this might be a relevant factor when deciding the lawfulness of the threat; for instance, when the primary infringers for example are already known and no action is directed towards a primary infringer. [181]

61 A defendant should be able to bring an action for the inappropriate use of IP rights, rather than having to wait to be sued for infringement as a defence. [182] There are differences between the examined EU member States regarding addressing unjustified threats in legislation, cases, and approaches. These national differences make the threshold for a reaction to unjustified threats by start-ups and growth companies very high. A company that asserts its patent rights at a European level must consider the unjustified threat element on a case-by-case basis in each jurisdiction. This increases the costs of the transactions. Even though there is no harmonisation addressing unjustified threats in Europe, the essential aim of benefiting from an improper advantage lies behind the unjustified threats and warning letters. This resembles the CJEU case law under the abuse of rights doctrine. In the CJEU case law, the essential aim of benefiting from an improper advantage indicates an abuse. [183]

7. Conclusion

62 Start-ups and growth companies must be able to have safeguards against abusive claims. Institutions set a structure for interaction between different parties and frame these safeguards. This article has evaluated the abuse of patent enforcement and analysed the abuse of rights principle, the abuse of a dominant position, the Enforcement Directive (IPRED), and unjustified threats. The article has provided an analysis of whether these elements provide tools for start-ups and growth companies when acting as defendants in patent infringement cases that could be considered abusive.

63 The article argues that the studied elements mitigate the potential ill effects of abusive legal proceedings to a certain extent. All the elements address the abuse of patent enforcement from their own perspective.

64 The abuse of rights doctrine has not been applied to patent litigation cases by the CJEU. For the abuse of rights principle to apply it is not sufficient that the patent has not been used. In this context, compulsory licensing would

provide a solution if the public interest is involved. It would, however, be more meaningful to cover under the abuse of rights doctrine claims that are raised by means of harassing, threatening, weakening the position, or preventing the entry into the market of the defendant. The abuse of rights principle seems to be too general to be used in the IP context.

65 The abuse of a dominant position under Article 102 of the TFEU applies only to a situation where the plaintiff is a dominant undertaking and has sufficient market power. The CJEU case law related to abusive litigation in EU competition law is limited and to a certain extent only applies to specific situations such as the misuse of enforcement procedure and SEP disputes. Two cumulative criteria set a good starting point. However, several questions remain open, such as the definition of “manifestly unfounded”. The applicability of the two cumulative criteria simultaneously makes the applicability of NPEs problematic. The aim to eliminate competition indicates exclusionary purposes. In relation to the SEPs and injunctions, NPEs have been addressed in national case law following the CJEU’s steps set out in *Huawei Technologies v. ZTE*. Thus, in the UK and Germany, restrictions set by the CJEU apply also to NPEs. In addition, NPEs evidently bring new practices that should be addressed such as the separation between exclusionary and exploitative practices.

66 The IPRED has institutional support at the European Union level. Hence, measures, procedures and remedies can be abused under IPRED. However, the case law is limited and the abuse under IPRED has been applied in the context of remedies. The abuse is not defined in the IPRED. When evaluating the IPRED, the CJEU could follow the doctrine of abuse of rights and take into consideration the essential aim of benefiting an improper advantage.

67 Unjustified threats were studied in the UK, Germany and the Netherlands with the result that National practices were seen to vary. Unjustified threats seem to be complex matter for start-ups and growth companies due to the lack of harmonisation at the EU level. In relation to unjustified threats, the studied countries have different practices. In the UK, there is a specific threat provision addressing unjustified threats to patents. In Germany and the Netherlands, groundless threats are addressed as an aspect of the general tort law or through unfair competition law. These national differences mean that a company asserting its patent rights at a European level must consider the unjustified threat element on a case-by-case basis in each jurisdiction. However, a defendant should be able to have a means of defence earlier than having to wait to be sued for infringement without any real infringement having taken place. Unjustified threats as an affirmative claim lowers transaction costs and therefore, is particularly beneficial for start-ups and growth companies.

68 In the CJEU case law, in relation to the abuse of rights doctrine, the subjective intention is a precondition for the application of the abuse of rights principle. The subjective intention and the essential aim of benefiting from an improper advantage could also be justified as an unjustified threat. This approach to subjective intention could be taken into consideration when a set of facts establishing unjustified threats are evaluated by national courts. Subjective intention could harmonise national practices to a certain extent. Further study of this harmonisation aspect would offer an interesting research area in the future.

69 The abuse of rights principle, the abuse of a dominant position, the Enforcement Directive (IPRED), and unjustified threats, potentially increase legal certainty and improve efficiency by lowering transaction costs. However, they are not sufficient, and adjustments and clarifications are needed. The generality of the abuse of rights principle, the minor case law, national practices varying significantly, and the lack of harmonisation make the studied legal tools rather complicated for start-ups and growth companies when defending their rights in patent enforcement proceedings.

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[1] Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights [2014] OJ L 195/16 (Enforcement Directive, IPRED).

[2] A Saydé, *Abuse of EU Law and Regulation of the Internal Market* (Hart Publishing, 2014) 29-30. See also A Lenaerts, ‘The General Principle of the Prohibition of Abuse of Rights: A Critical Position on Its Role in a Codified European Contract Law’ (2010) 18 *European Review of Private Law* 1127, 1122; A Léonard, ‘Abuse of Rights in Belgian and French Patent Law – A Case Law Analysis’, (2016) 7 *JIPITEC* 2.

- [3] B Love, 'Bad Actors and the Evolution of Patent Law' (2015) 101 Va L. Rev. 1; A Strowel and A Léonard, 'Cutting Back Patent Over-Enforcement, How to Enforce Abusive Practices Within the EU Enforcement Framework' (2020) 11 JIPITEC 1.
- [4] MJ Meurer, 'Controlling Opportunistic and Anti-Competitive Intellectual Property Litigation' (2003) 44 Boston College Law Review 510.
- [5] The term start-up and growth companies is used in this research as it focuses on companies that are relatively small, young and highly innovative.
- [6] For an analysis, see MJ Meurer, (n 4), 519 and 521.
- [7] MJ Meurer, (n 4), 508-509.
- [8] Case C-33/74 *Van Binsbergen v Bestuur van de Bedrijfsvereniging voor de Metaalnijverheid*. ECLI:EU:C:1974:313.
- [9] Article 102 of the Consolidated Version of the Treaty on the Functioning of the European Union [2007] OJ C 306/1 (TFEU).
- [10] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183; Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770 ; Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477.
- [11] Article 3(2) of the IPRED.
- [12] Case C-367/15 *Stowarzyszenie 'Olawska Telewizja Kablowa' v Stowarzyszenie Filmowców Polskich*. ECLI:EU:C:2017:36.
- [13] C Heath, 'Wrongful Patent Enforcement: Threats and Post-Infringement Invalidity in Comparative Perspective' (2008) 39 IIC 308.
- [14] C Chien, 'Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents' (2009) 87 N.C. L. Rev 1571 < <https://digitalcommons.law.scu.edu/facpubs/4> > accessed 17 November 2020; A Strowel and A Léonard, (n 3), 3.
- [15] For NPEs, see, inter alia, A Ohly, 'Patenttrolle oder: Der Patentrechtliche Unterlassungsanspruch unter Verhältnismäßigkeitsvorbehalt? Aktuelle Entwicklungen im US-Patentrecht und Ihre Bedeutung für das Deutsche und Europäische Patentsystem' (2008) 787 GRUR Int; T Ewing and R Feldman, 'Giants Among Us' (2012) 1 Stan. Tech. L. Rev; C Helmers and L McDonagh, 'Trolls at the High Court' (2012) Law, Society and Economy Working Papers < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2154958 > accessed 27 November 2020; C Chien, 'Start-ups and Patent Trolls' (2012) Santa University Legal Studies Research Paper No.09-12
- < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2146251 > accessed 27 November 2020; S Fusco, 'Markets and Patent Enforcement: A Comparative Investigation of Non-Practicing Entities in the United States and Europe' (2014) 20 Mich. Telecomm. & Tech. L. Rev; D Geradin, 'Patent Assertion Entities and EU Competition Law' (2019) 15 Journal of European Competition Law & Practise; L Cohen et al., 'Patent Trolls: Evidence from Targeted Firms' (2019) 65 Management Science; A Strowel and A Léonard, (n 12).
- [16] C E Tucker et al., 'The Effect of Patent Litigation and Patent Assertion Entities on Entrepreneurial Activity' (2016) 45 Research Policy 219; L Babin and A Jarrell, 'Patent Trolls' Threat to Small and Medium-Size Enterprises' (2018) 15 International Journal of Business and Public Administration 2-3. For start-ups litigation in Europe, see, inter alia, Darts-IP, 'NPE Litigation in the European Union. Facts and Figures' (2018) < <https://www.darts-ip.com/npe-litigation-in-the-european-union-facts-and-figures-2/> > accessed 27 November 2020 10.
- [17] B Love, 'Bad Actors and the Evolution of Patent Law' (2015) 101 Va L. Rev.; C Helmers et al., 'Patent Assertion Entities in Europe' (2015) Santa Clara Law Digital Commons 2; Darts-IP, (n 14). See also, for example, T Ewing and R Feldman (n 13); C Helmers and L McDonagh (n 13); S Fusco, (n 13); D Geradin, (n 13), 3.
- [18] H Anger, 'Justizministerin Lambrecht erhöht den Druck auf Patenttrolle' (2020) Handelsblatt, < <https://www.handelsblatt.com/politik/deutschland/eckpunkt Papier-Justizministerin-Lambrecht-erhoeht-den-druck->

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[20] A Kesselheim, Intellectual Property Policy in the Pharmaceutical Sciences: The Effect of Inappropriate Patent and Market Exclusivity Extensions on the Health care System (2007) 9 AAPS Journal E307-E308; R M Hilty and K-C Lui, The Enforcement of Patents (Aspen Publisher, 2011) 25; R Hilty, Legal Remedies Against Abuse, Misuse, and other Forms of Inappropriate Conduct of IP Right Holders, in R M Hilty and (eds.), *Compulsory Licensing. Practical Experiences and Ways Forward* (Springer-Verlag, 2015) 381-382.

[21] MJ Meurer, (n 4), 519.

[22] See the EPO statistics < <https://www.epo.org/about-us/annual-reports-statistics/annual-report/2019/at-a-glance.html> > accessed 27 November 2020.

[23] MJ Meurer, (n 4), 520.

[24] M Lemley and C Shapiro, Patent Holdup and Royalty Stacking (2007) 85 Texas Law Review 1992.

[25] A Ohly, (n 13), 791.

[26] A Ohly, (n 13), 791.

[27] D Guellec and B van Pottelsberghe de la Potterie, *The Economics of the European Patent System. IP Policy for Innovation and Competition* (OUP, 2007) 98; R Feldman, *Rethinking Patent Law* (Harvard University Press, 2012) 170.

[28] M Lemley and K Moore, Ending Abuse of Patent Continuities (2004) 84 Boston University Law Review 81; European Commission, Pharmaceutical Sector Inquiry Final Report, European Commission (2009) < https://ec.europa.eu/competition/sectors/pharmaceuticals/inquiry/staff_working_paper_part1.pdf > accessed 27 November 2020 35.

[29] European Commission, Pharmaceutical Sector Inquiry Final Report, European Commission (2009) < https://ec.europa.eu/competition/sectors/pharmaceuticals/inquiry/staff_working_paper_part1.pdf > accessed 27 November 2020 199-200.

[30] *Autorità Garante della Concorrenza e del Mercato*, A431 – Ratiopharm/Pfizer (11 January 2012), Balletino n. 2/2012 5-56. For an analysis see S Vezzoso, 'Towards an EU Doctrine of Anticompetitive IP-Related Regulation' (2012) 6 Journal of European Competition Law and Practice 529-530.

[31] C Chien, (n 12) 1574; A Strowel and A Léonard, (n 12) 3.

[32] J McDonough III, 'The Mynth of Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy' 56 Emory L. J. 189 (2006-2007); A Hagiu and D Yoffie, 'The New Patent Intermediaries: Platforms, Defensive Aggregators and Super-Aggregators' (2013) 27 J. Econ. Persp. 45; C Law, D Schwatz and J Kesan, 'Analyzing the role of non-practicing entities in the patent system' (2014) 99 Cornell L. Rev. 425; M Lemley and R Feldman, 'Is Patent Enforcement Efficient?' (2018) 98 B. U. L. Rev. 649 < https://repository.uchastings.edu/faculty_scholarship/1679/ > accessed 27 November 2020; R Feldman and M Lemley, 'The Sound and Fury Patent Activity', Olin Stanford Working Paper Series No. 521 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3195988 > accessed 27 November 2020.

[33] A Ohly, Three Principles of European IP Enforcement Law: Effectiveness, Proportionality, Dissuasiveness, in J Drexler, L Boy, C Godt and B Remiche (eds.), *Technology and Competition. Contributions in Honour of Hanns Ulrich* (Larcier 2009) 4; C Ménard and MM Shirley, (n 17), 1.

[34] D Geradin, (n 13), 207-208.

[35] M Lemley et al. 'The Patent Enforcement Iceberg' (2019) 97 Texas Law Review 101-102; A Strowel and A Léonard, (n 12), 3.

[36] J Mello, 'Technology Licensing and Patent Trolls' (2006) 12 Boston University Journal of Science & Technology Law 388 and 397; A Ohly, (n 13), 790-791; S Fusco, (n 13), 444; C Chien has made a study of the costs and impacts of NPE demands on small companies. See C Chien, (n 13), 10-11.

[37] AJ Davis and K Jesien, 'The Balance of Power in Patent Law: Moving towards Effectiveness in Addressing Patent Trolls Concerns' (2012) 22 Fordham Intellectual Property Law & Entertainment Law Journal 836. Patent demands are expensive, and therefore induces settlement. For this matter see C Chien, (n 13).

[38] S Scotchmer, *Innovation and Incentives* (The MIT Press 2004) 200.

[39] D Harhoff, 'Economic Cost-Benefit Analysis of a Unified and Integrated European Patent Litigation System', *Final Report in Ludwig Maximilian University München* (2009), Tender No. MARKT/2008/06/D, 29-50; D Xenos, 'The European Unified Patent Court: Assessment and Implications of the Federalisation of the Patent System in Europe', 10 Scripted (2013) 252; S Fusco, 'Markets and Patent Enforcement: A Comparative Investigation of Non-Practicing Entities in the United States and Europe', 20 Michigan Telecommunications and Technology Review (2014) 463.

[40] The unitary patent system consist of the Regulation (EU) No. 1257/2012 of the EP and of the Council of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection, [2012] OJ L361/1, Regulation (EU) No. 1260/2012 of 17 December 2012 implementing enhanced cooperation in the area of creation unitary patent protection with regard to the applicable translation arrangements, OJ L361/89 [2012] and the Agreement on a Unified Patent Court, OJ C175/1 [2013].

[41] For the analysis of the post-Brexit situation in the UK, see for example T Jaeger, 'Reset and Go: The Unitary Patent System Post-Brexit, SSRN Discussion Paper' (2016); M Lamping and H Ullrich, 'The Impact of Brexit on Unitary Patent Protection and its Court', Max Planck Institute for Innovation & Competition Research Paper No. 18-20 (2018); L McDonagh and M Mimler, 'Intellectual Property Law and Brexit: A Retreat or a Reaffirmation of Jurisdiction?' in M. Dougan (ed.) *The UK After Brexit* (CUP, 2017). For Germany, see A complaint (2 BvR 739/17) was decided by the Second Senate of the Federal Court in 13 February 2020. See < <https://www.bundesverfassungsgericht.de/SharedDocs/Pressemitteilungen/EN/2020/bvg20-020.html> > accessed 27 November 2020. The German Bundestag approved ratification bill on the Unified Patent Court Agreement on 27 November 2020 see < <https://www.epo.org/news-events/news/2020/20201126b.html> >

< <http://patentblog.kluweriplaw.com/2020/11/26/german-bundestag-approves-legislation-to-ratify-the-unified-patent-court-agreement/> >

< <https://dip21.bundestag.de/dip21/btd/19/228/1922847.pdf> >, accessed 27 November 2020.

[42] L McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court* (Edward Elgar, 2016) 142.

[43] R Feldman, 'Intellectual Property Wrongs' (2013) 18 Stanford Journal of Law, Business & Finance 298; See also V Chiappetta, 'Living with Patents: Insight from Patents Misuse' (2011) 15 Marquette Intellectual Property Law Review; DG Competition Discussion paper on the application of article 82 of the Treaty to exclusionary abuses, European Commission (2005) < <https://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf> > accessed 27 November 2020.

[44] Case C-33/74 *Van Binsbergen v Bestuur van de Bedrijfsvereniging voor de Metaalnijverheid*. ECLI:EU:C:1974:313, para 13. This case is generally considered as the starting point even though the term abuse is not directly used in the decision of the Court.

[45] In this article, references to EC law will be replaced by the term EU law to provide consistency. Case C-321/05 *Hans Markus Kjöfoed v Skatteministeriet*. ECLI:EU:C:2007:408, para 38.

[46] Case C-321/05 *Hans Markus Kjöfoed v Skatteministeriet*. ECLI:EU:C:2007:408, para 38.

[47] EU law areas include such areas as agricultural policy, fundamental freedoms, corporate law and tax law. S Vogenauer, *The Prohibition of Abuse Law: An Emerging General Principle of EU Law*, in R de la Feria and S

Vogenauer (eds.), *Prohibition of Abuse of Law. A New General Principle of EU Law* (Hart Publishing 2011) 521. Within the European Treaties, the term abuse appears in the following contexts: in competition law, which prohibits abuses of dominant position (Articles 102 and 104 of the TFEU), and in the Charter of Fundamental Rights, which prohibits abuses of rights and freedoms recognized in the Charter (Article 54 of the Charter of Fundamental rights). See, the Charter of the Fundamental Rights of the European Union (the Charter of Fundamental Rights) [2000] OJ C 364/3. European Treaties form the primary law of the European Union. In addition, the term abuse also appears in the context of the protection of public health, in relation to the abuse of alcohol (Article 168 of the TFEU). Use of the term abuse in other official European Union documents has grown steadily over the years. The research conducted by A Saydé proves that the use of the term abuse and its derivatives is nowadays common in the legal vocabulary of the European Union. See A Saydé, (n 2), 11-12.

[48] For Germany, see § 242 of the German Civil Code (*Bürgerliches Gesetzbuch*) (BGB). For the Netherlands, see § 6:2(2) and 6:248(2) of the Dutch Civil Code (*Burgerlijk Wetboek*) (BW). See also A Lenaerts, (n 2), 1127; A Strowel and A Léonard, (n 12), 4.

[49] RM Hilty, (n 18), 386.

[50] See § 226 and § 242 of the German Civil Code (*Bürgerliches Gesetzbuch*) (BGB). § 242 of the BGB translates *Leistung nach Treu und Glauben* (“reasonableness and fairness”) into performance in good faith. See also A Lenaerts (n 2) 1127; A Strowel and A Léonard, (n 12), 4.

[51] S Kamanabrou, ‘Abuse of Law in the Context of EU Law’ (2018) 43 *European Law Review* 536. See also C Schubert, *Münchener Kommentar zum BGB* (Beck 2016) 212.

[52] A Lenaerts, (n 2), 1125.

[53] See §3.13 of Dutch Civil Code (*Burgerlijk Wetboek*) (BW).

[54] A Lenaerts, (n 2), 1125.

[55] M Byers, ‘An abuse of Rights: An Old Principle, A New Age’ (2002) 47 *McGill Law Journal* 396; A Lenaerts, (n 2), 1125; J Snell, The Notion of and a General Test for Abuse of Rights, in R. de la Feria and S. Vogenaur (eds.), *Prohibition of Abuse of Law. A New General Principle of EU Law* (Hart Publishing 2011) 220; A Saydé, (n 2), 35-37. In an old UK case, the House of Lords unanimously held that the defendant’s motives were irrelevant. For the UK, see *Bradford Corporation v Pickles* [1895] AC 587 (HL). However, in two subsequent cases of nuisance, the House Lords relied on the presence of harmful intent to qualify a behavior as unlawful. See *Christie v Dawey* [1893] 1 Ch 316 (HL); *Hollywood Silver Fox Farm v Emmett* [1936] 2 KB 468 (HL).

[56] J Pöyhönen, *Uusi varallisuus oikeus* (Talentum 2003) 97-109. In Finnish the abuse of rights is “oikeuden väärinkäytön kiello”.

[57] See for example E Tammi-Salminen, *Sopimus, kompetenssi ja kolmas*, (Suomalainen lakimiesyhdistys 2001) 247-251; M Hemmo, *Sopimusoikeuden oppikirja* (Talentum 2016) 56; S Kulmala, Oikeuden väärinkäytön kiello ja oikeudekäyntikulusanktionsäännökset (2018) 6 *Defensor Legis* 895. In Finland, the Abuse of Rights have been applied in the Supreme Court cases KKO 1992:145 and KKO 2011:6 and the Supreme Court has referred to it in a number of cases see for example KKO 2015:49, KKO 2009:93 and KKO 2007:99.

[58] A Ohly, (n 13); RM Hilty, (n 18), 386. For the case see, OLG Jena (Court of Appeal), MMR 2008 408 and 413.

[59] A Strowel and A Léonard, (n 12), 4. For cases, see for the UK, see *Nokia Corporation v. Interdigital Technology Corp.* [2004] EWHC 2920 (Pat); for the Germany, see BGH, 10 May 2016, XZR 114/13 and LG Düsseldorf 4b O 157/14 (19.01.16).

[60] RM Hilty, (n 18), 386-387.

[61] Case C-255/02 *Halifax plc, Leeds Permanent Development Services Ltd., County Wide Property Investments Ltd v Commissioners of Customs & Excise*. ECLI:EU:C:2006:121; Case C-196/04 *Cadbury Schweppes and Cadbury Schweppes Overseas*, ECLI:EU:C:2006:544.

[62] Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*, EU:C:2000:695, para. 52-53; Joined Cases C-116/16 and C-117/16 *T-Denmark and Y-Denmark Aps*, ECLI:EU:C:2019:135, para 74. This concept of objectivity was introduced by L. Josserand in modern French theory and has been influential in France and other continental countries. See A Metzger, Abuse of Law in EU private Law: A (Re)Construction from Fragments. In de la Feria R. and S Vogenaur (eds.), *Prohibition of Abuse of Law. A New General Principle of EU Law* (Hart Publishing 2011) 239.

[63] J Snell, (n 53), 220; A Saydé, (n 2), 93.

[64] Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*. ECLI:EU:C:2000:695, para 52. In addition, see for example Case C-206/94 *Brennet AG v Victoria Paletta*. ECLI:EU:C:1996:182, para 25; Case C-212/97 *Centros Ltd v Erhvervs- og Selskabsstyrelse*. ECLI:EU:C:1999:126, para 25.

[65] According to the CJEU, the subjective element can be established, inter alia, by the evidence of collusion between the Community exporter receiving the refunds and the importer of the goods in the non-member country. Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*. ECLI:EU:C:2000:695, para 53. Furthermore, this pragmatic approach to the subjective element has been underlined by the CJEU in Case C-255/02 *Haltfax plc, Leeds Permanent Development Services Ltd., County Wide Property Investments Ltd v Commissioners of Customs & Excise*. ECLI:EU:C:2006:121, para 81 and 82.

[66] A Saydé, (n 2), 89.

[67] Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*. ECLI:EU:C:2000:695, para 56.

[68] Case C-279/05 *Vong Dairy Products Bv v Productschap Zuivel*. ECLI:EU:C:2007:18, para 33.

[69] A Saydé, (n 2), 30-31; Case C-441/93 *Panagis Pafitis and others v Trapeza Kentrikis Ellados A.E. and others*. ECLI:EU:C:2000:150, para 32-43; Case 367/96 *Alexandros Kefalas and Others v Elliniko Dimosio (Greek State) and Organismos Oikonomikis Anasygkrotisis Epicheiriseon AE (OAE)*. ECLI:EU:C:1998:222, para 22-29.

[70] Case C-373/97 *Dionysios Diamantis v Elliniko Dimosio (Greek State) and Organismos Ikononikis Anasygkrotisis Epicheiriseon AE (OAE)*. ECLI:EU:C:2000:150, para 33 and 38; Case 367/96 *Alexandros Kefalas and Others v Elliniko Dimosio (Greek State) and Organismos Oikonomikis Anasygkrotisis Epicheiriseon AE (OAE)*. ECLI:EU:C:1998:222, para 28.

[71] See AG Geelhoed in Case C-109/01 *Secretary of State for the Home Department v Hacene Akrich*. ECLI:EU:C:2003:112, para 173, 178 and 179.

[72] Case C-147/03 *Commission of the European Communities v Republic of Austria*. ECLI:EU:C:2005:427, para 70; Case C-212/97 *Centros Ltd v Erhvervs- og Selskabsstyrelsen*. ECLI:EU:C:1999:126, para 27.

[73] AG Maduro in Case C-210/06 *Cartesio Oktató és Szolgáltató Bt*. ECLI:EU:C:2008:294, para 29.

[74] Case C-53/81 *D.M. Levin v Staatssecretaris van Justitie*. ECLI:EU:C:1982:105, para 22.

[75] Advocate General Geelhoed in Case C-109/01 *Secretary of State for the Home Department v Hacene Akrich*. ECLI:EU:C:2003:491, para 173 and 174.

[76] The CJEU mentions an example of various fields where the principle of the abuse of rights has been applied. For this see joined Cases C-116/16 and C-117/16 *T-Denmark and Y-Denmark Aps*. ECLI:EU:C:2019:135, para 74.

[77] S Vogenauer (n 45) 543. See also Case C-8/92 *General Milk Products GmbH v Hauptzollamt Hamburg-Jonas*, EU:C:1993:82, para 21; Case 110/99 *Emsland-Stärke v Hauptzollamt Hamburg-Jonas*. ECLI:EU:C:2000:695, para 54.

[78] C-116/16 and C-117/16 *T-Denmark and Y-Denmark Aps*, EU:C:2019:135, para 98.

[79] J Drexel, 'Is There a More Economic Approach to Intellectual Property and Competition Law?', in J Drexel (ed.) *Research Handbook on Intellectual Property and Competition Law* (Edward Elgar Publishing Limited 2008); A Lenaerts, (n 2), 1122; A Strowel and A Léonard, (n 12), 14

[80] RM Hilty, (n 18), 391.

[81] A Strowel and A Léonard, (n 12), 11. For cases see in Germany: LG Dusseldorf 4b o 274/10 (24.04.12), LG Dusseldorf 4a O 54/12 (11.12.12); in the UK *Unwired Planet International Ltd. v Huawei & Samsung* [2017] EWHC 711 (Pat); *SanDisk Corp. v. Philips et al. (including SISVEL)* [2007] EWHC 322 (Ch.); *Vringo Infrastructure Inc V ZTE (UK) Ltd.* [2014] EWHC 3924 (Pat.).

[82] D Geradin, (n 13), 212; A Strowel and A Léonard, (n 12), 11. See Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*, EU:C:2015:477. See also Case AT.39985, *Motorola-Enforcement of GPRS Standard Essential Patents*, 29 April 2014, C(2014) 2892 final; Case AT.39939, *Samsung-Enforcement of UMTS Standard Essential Patents*, 29 April 2014, C(2014) 2891 final.

[83] M Lamping, 'Refusal to License as an Abuse of Market Dominance: From Commercial Solvents to Microsoft', in RM Hilty and K-C Liu (eds.), *Compulsory Licensing Practical Experiences and Ways Forward* (Springer 2015) 127; D Geradin (n 13), 212; See Joined Cases C-241/91 P and C-242/91 P *Radio Telefís Éireann (RTE) and Independent Television Publications Ltd (ITP) v Commission of the European Communities (Magill)*. ECLI:EU:C:1995:98; Case C-418/01 *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG*. ECLI:EU:C:2004:257; Case T-201/04 *Microsoft Corp. v. Commission*. ECLI:EU:T:2007:289; Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477.

[84] Case C-102/77 *Hoffman-La Roche v. Centrafarm*. ECLI:EU:C:1978:108, para. 16.

[85] Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770, para 186. The CJEU also referred to an earlier case *Magill*. In *Magill*, there was only one source of information for the channel information. Hence, the effective competition was prevented. See joined cases C-241/91 P and C 242/91 P *Radio Television Eireann (RTE) and Independent Television Publications Ltd (IPT) v Commission (Magill)*. ECLI:EU:C:1995:98, para 47.

[86] See Case 27/76 *United Brands Company and United Brands Continentaal BV v EC Commission*. ECLI:EU:C:1978:22, para 65; Case 85/76 *Hoffman- La Roche & Co AG v Commission*. ECLI:EU:C:1979:36, para 38-39.

[87] Article 102 of the TFEU. See also M Lamping, (n 81), 122.

[88] D Geradin, (n 13), 217. See Case AT.39985, *Motorola-Enforcement of GPRS Standard Essential Patents*, 29 April 2014, C(2014) 2892 final, para. 223.

[89] M Lemley and M Shapiro, 'Potent holdup and Royalty Stacking' (2007) 85 *Texas Law Review* 1992.

[90] Commission Notice on the definition of the relevant market for the purpose of Community competition law, OJ 1997, C 372/5, para. 7; M Lamping, (n 81), 124; Case 85/76 *Hoffman- La Roche & Co AG v Commission*. ECLI:EU:C:1979:36, para. 28; C-322/81 *Michelin v Commission*. ECLI:EU:C:1983:313, para. 48.

[91] The starting for the analysis was the Anatomical Therapeutic Chemical (ATC) Classification System. The narrower market definition was based on the fourth ATC level that is the product's mode of action. For a detailed analysis see J Westin, 'Defining relevant market in the pharmaceutical sector in the light of the Lossec case – just how different is the pharmaceutical market?' (2011) 32 *European Competition Law Review* 58-59; S Anderman, 'Competition Law Perspective II' in J. Pila and C. Wadlow (eds.), *The Unitary EU Patent System* (Hart Publishing, 2015) 135.

[92] Case 27/76 *United Brands Co v EC Commission*. ECLI:EU:C:1978:22, para. 65; Case 85/76 *Hoffman- La Roche & Co AG v Commission*. ECLI:EU:C:1979:36, para 38-39. See also European Commission, 'Guidance on the Commission Enforcement Priorities in Applying Article 82 of the EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings', OJ 2009, C 45/02, para. 9-13.

[93] T Eilmansberger, 'How to distinguish a good from bad competition under article 82: In search of clearer and more coherent standards for anti-competitive abuses' (2005) *Common Market Law Review* 42; M Lamping, (n 81), 122. See also Case C-322/81 *Michelin v Commission*. ECLI:EU:C:1983:313, para 57.

[94] T Eilmansberger, (n 85), 133; European Commission, DG Competition Discussion paper on the application of article 82 of the Treaty to exclusionary abuses (2005) < <https://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf> > accessed 27 November 2020, para. 54; M Lamping, (n 81), 122.

- [95] M Lamping, (n 81), 122.
- [96] Case C-62/86 *AKZO Chemie BV v Commission*. ECLI:EU:C:1991:286, para 72.
- [97] G Shapiro, 'Injunctions, Hold-Up and Patent Royalties' (2006) 12 American Law and Economics Review; D. Geradin et al., 'Elves or Trolls? The Role of Non-practicing Patent Owners in the Innovation Economy' (2008) TILEC Discussion Paper DP18-2008 2.
- [98] Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477, para 58.
- [99] See Article 139 of the Rules of Procedure of the Court of Justice [2010] OJ C177/1. Article 139 enables the CJEU to order a party to pay costs in a case of an unreasonable or vexatious procedure; applied in Case C-338/82 *Carlo Albertini and Mario Montagnini v Commission*. ECLI:EU:C:1984:181, para 51-52; Case T-302/00 R II Order of the President of the Court of First Instance of 29 March 2001, *Anthony Goldstein v Commission*. ECLI:EU:T:2001:108, para. 40-41.
- [100] *BBI/Boosey & Hawkes* [1987] OJ L286/36; *Decca Navigator System* [1989] OJ L43/27.
- [101] *BBI/Boosey & Hawkes* [1987] OJ L286/36, para. 11; *Decca Navigator System* [1989] OJ L43/27, para 50.
- [102] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183; Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770; Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477
- [103] For example, S Vezzoso has compared the ITT Promedia and US antitrust law. See S Vezzoso, (n 28), 529-534. See also F Murphy, 'Abuse of Regulatory Procedures – the AstraZeneca Case: Part 2' (2009) 30 European Competition Law Review 300; T Käseberg, *Intellectual Property, Antitrust and Cumulative Innovation in the EU and the US* (Hart Publishing 2012) 24.
- [104] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183.
- [105] Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770. See also J Drexler, 'Astrazeneca and the EU Sector Inquiry: When do Patent Filings Violate Competition Law?' (2012) Max Planck Institute for Intellectual Property and Competition Law Research Paper no. 12-02.
- [106] Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770, para 18.
- [107] Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477.
- [108] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183, para 60.
- [109] Article 8 of the Universal Declaration on Human Rights, UN general Assembly, Resolution 217 A(III), UN Document A/810 (1948) 73.
- [110] Article 67(4) of the TFEU and Article 47 of the Charter of Fundamental Rights.
- [111] C-300/11 *ZZ v Secretary of the State for Home Department* ECLI:EU:C:2013:363, para 51; Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH* ECLI:EU:C:2015:477, para 58. See also Advocate General Wathael in Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH* ECLI:EU:C:2015:477, para 67.
- [112] C-300/11 *ZZ v Secretary of the State for Home Department* ECLI:EU:C:2013:363, para 51.
- [113] Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477, para 58. See also case T-701/14 *Niche Generics Ltd v. European Commission*. ECLI:EU:T:2018:921, para 248.
- [114] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183, para 60. Case also further states the ability to assert one's rights through the courts constitute the expression of a general principle of law which underlies the constitutional traditions common to the Member States and refers to the Articles 6 and 13 of the European

Convention for Human Rights and Fundamental Freedoms. See also more recent case T-701/14 *Niche Generics Ltd v. European Commission*. ECLI:EU:T:2018:921, para 248.

[115] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183, para 56 and 61.

[116] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183, para 55.

[117] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183, para 55 and 56.

[118] Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183, para 56.

[119] This is described in a great detail in F Murphy, (n 101).

[120] See for example Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770, para 134; Case T-111/96 *ITT Promedia NV v Commission*. ECLI:EU:T:1998:183, para 138; Case 85/76 *Hoffman-La Roche & Co AG v Commission*. ECLI:EU:C:1979:36, para 91

[121] L Moritz, *An introduction to EU competition law* (CUP 2013) 239.

[122] F Murphy, (n 101), 296.

[123] Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770, para 71

[124] Case C-457/10 P *AstraZeneca v Commission*. ECLI:EU:C:2012:770, para 99. See also S Vezzoso, (n 21), 529-530.

[125] M Neginotti, 'Abuse of Regulatory Procedures in the AstraZeneca Case' (2008) 29 European Competition Law Review 296.

[126] L Moritz, (n 119), 239.

[127] Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477, para 60-61.

[128] Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477, para 63.

[129] N Petit, 'Huawei v. ZTE: Judicial Conservatism at the Patent-Antitrust Intersection', 2015 CPI AntiTrust Chronicle; Case C-170/13 *Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2015:477, para 52.

[130] D Geradin, (n 13), 224. See cases *Unwired Planet v. Huawei* [2017] EWHC 1304 (Pat) (High Court) and [2018] EWCA Civ 2344 (Court of Appeal), *Saint Lawrence Communications GmbH v. Telekom Deutschland GmbH*, District Court Mannheim 2nd Civil Division, 10 March 2015, 2 O 103/14; *Saint Lawrence Communications GmbH v. Telekom Deutschland GmbH*, the Regional Court of Düsseldorf, 31 March 2016, 4a O 73/14.

[131] D Geradin, (n 13), 217.

[132] D Geradin, (n 13), 229.

[133] Article 3 of IPRED. IPRED provides harmonisation of civil redress rules and measures and contains the minimum harmonisation rules. 6

[134] In addition, Article 61's limitation in consequence of acquiescence and Article 138 prior rights is applicable to particular localities of the Trademark Law. See Articles 59(1)(b), 61 and 138 of the Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union Trademark. The first reference to bad faith was in Article 3(2)(d) of Directive 2008/95/EC of the European Parliament and the Council of 22 October 2008 to approximate the laws of the Member States relating to trademarks, OJ L 299/25.

- [135] Case-529/07 *Chocoladefabriken Lindt & Sprüngli AG v Franz Hauswirth GmbH*. ECLI:EU:C:2009:361, para 42; Advocate General Sharpston in Case-529/07 *Chocoladefabriken Lindt & Sprüngli AG v Franz Hauswirth GmbH*. ECLI:EU:C:2009:148, para 58. See Articles 59 and 61 of the Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union Trademark. The first reference was in Article 3(2)(d) of Directive 2008/95/EC of the European Parliament and the Council of 22 October 2008 to approximate the laws of the Member States relating to trademarks, OJ L 299/25.
- [136] A Metzger, (n 60), 243.
- [137] Recital 17 of the IPRED.
- [138] Agreement on Trade-Related Aspects of intellectual Property Rights (TRIPS), Marrakesh Agreement Establishing the World Trade Organization, Annex 1 C, Legal Instruments-Results of the Uruguay Round, vol. 31 (15 April 1994) 33 ILM 81, Article 41(4).
- [139] Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and of the Council on the Enforcement of Intellectual Property Rights, COM(2017) 708 Final, p. 1-2.
- [140] Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and of the Council on the Enforcement of Intellectual Property Rights, COM(2017) 708 Final, p. 9-10.
- [141] C Heath, (n 11), 307.
- [142] Recital 26 of the IPRED.
- [143] A Strowel and A Léonard, (n 12), 6.
- [144] For example, most recent cases C-149/17 *Bastei Lübbe GmbH & Co. KG v Michael Strotzer*. ECLI:EU:C:2018:841; C-494/15 *Tommy Hilfiger Licensing LLC et al. v Delta Center a.s.* ECLI:EU:C:2016:528; Case C-57/15 *United Video Properties Inc. v Telenet NV*; EU:C:2015:471; C-681/13 *Diageo Brands BV v Simiramida-04 EOOD*. ECLI:EU:C:2015:471.
- [145] See C-149/17 *Bastei Lübbe GmbH & Co. KG v Michael Strotzer*. ECLI:EU:C:2018:841, para 37.
- [146] See Case C-367/15 *Stowarzyszenie 'Olawska Telewizja Kablowa' v Stowarzyszenie Filmowców Polskich*. ECLI:EU:C:2017:36, para 31.
- [147] Opinion of Advocate General Wathelet, Case C-170/13, *Huawei Technologies Co. Ltd. v. ZTE Corp. and ZTE Deutschland GmbH*. ECLI:EU:C:2014:2391, para. 63 and footnote 36. See also A Strowel and A Léonard, (n 12), 6.
- [148] Article 10^{bis} 3 ii of the Paris Convention for the Protection of Industrial Property (20 March 1883) 1160 UNTS 231 (as revised)
- [149] GHC Bodenhausen, *Guide to the Application of the Paris Convention* (United International Bureaux for the Protection of Intellectual Property 1967) 145(g)
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- [151] H-P Brack, 'Patent Infringement Warnings in a Common Law versus a Civil Law Jurisdiction – An Actionable Threat?' (2006) 37 IIC 31; C Heath, (n 11), 310; Law Commission, *Patents, Trade Marks and Design Rights: Groundless Threats, Consultation Paper no. 212* (2014) < https://s3-eu-west-2.amazonaws.com/lawcom-prod-storage-11jsxou24uy/uploads/2015/03/cp212_patents_groundless_threats.pdf 7 > accessed 27 November 2020 8.
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- [153] C Chien, (n 12), 16.
- [154] J Mello, (n 34), 388; S Fusco, (n 13), 444.

- [155] H MacQueen et al., *Contemporary Intellectual Property: Law and Policy* (OUP 2011) 956.
- [156] C Heath, (n 11), 308-309; Law Commission, (n 149), 42.
- [157] §70 of the Intellectual Property (Unjustified Threats) Act 2017.
- [158] T Sherliker, 'Don't Threat the Small Stuff – Reform Coming for Unjustified Threats' (2016) 11 *Journal of Intellectual Property Law & Practice* 330.
- [159] *Cerosa Ltd v. Poseidon Industrie A.B. and Another*, *High Court of Justice Chancery Division* [1973] FSR 223.
- [160] *Bowden Controls Ltd. v. Acco Cable Controls Ltd. and Another* [1990] RPC 427. The Case concerned a patent dispute in Germany resulting in a finding of infringement, which was subject to appeal. A letter was sent in England referring to the German decision, stating that the company intended to enforce its rights. The Court considered whether it was arguable that the letter constituted a threat.
- [161] C Heath, (n 11), 308-309; Law Commission, (n 149), 42.
- [162] Law Commission, (n 149), 3, 6, 42.
- [163] J Pila and P Torremans, *European Intellectual Property Law* (OUP 2016) 602.
- [164] H-P Brack, (n 149), 15.
- [165] Section 3 of the German Unfair Competition Act (*Gesetz gegen den unlauteren Wettbewerb*) (UWG); Law Commission, (n 149), 81-82; JP Heidenreich, 'The New German Act Against Unfair Competition', *German Law Archive* (2015),
- < <https://www.harmsen.utescher.com/rechtsanwaelte-patentanwaelte/dr-jan-peter-heidenreich/> > accessed 27 November 2020
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- [167] Section 4(7) of the the German Unfair Competition Act (*Gesetz gegen den unlauteren Wettbewerb*) (UWG); JP Heidenreich, (n 163).
- [168] Section 4(8) of the German Unfair Competition Act (*Gesetz gegen den unlauteren Wettbewerb*) (UWG); JP Heidenreich, (n 163).
- [169] H Ullrich, (n 164), 30.
- [170] §823 of the German Civil Code (*Bürgerliches Gesetzbuch*) (BGB); Law Commission (n 149) 82.
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- [175] Bürgerliches- und Verfahrensrecht, BGH, Urteil vom. 22 Juni 1976, X ZR 44/74, 78 *GRUR* (1976) 715-719 (*Spritzgießmaschine*).

- [176] H-P Brack, (n 149), 18.
- [177] Article 162 of the Book 6 of the Dutch Civil Code (*Burgerlijk Wetboek*) (BW).
- [178] Court of Appeal 20 September 2011, IER 2001/57 (*Kopperts/Boekstein*)
- [179] Law Commission, (n 149), 83; Supreme Court 27 January 1989, NJ 1989, 506 (*Mejn/Stork*); Supreme Court 29 Maart 2002, LJN AD8184 (*Van Bentum/Kool*); Hoge Raad 29 September 2006, LJN AU6098 (*CFS Bakel/Stork Titan*).
- [180] See for example District Court Amsterdam, 13 April 2011 (*Steffex*), regarding a claim of copyright infringement.
- [181] Law Commission, (n 149), 83.
- [182] R Feldman, (n 25), 310.
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