The Unified Patent Court and Its Implications for Innovation of Start-ups

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Letizia Tomada

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Supervisors:
Prof. Dr. Josef Drexl (Max Planck Institute for Innovation and Competition)
Prof. Dr. Manuel Desantes Real (University of Alicante)

First examiner: Prof. Dr. Josef Drexl
Second examiner: Prof. Dr. Christoph Ann
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Extended Abstract

The implementation of the Unitary Patent Package will represent the result of the evolution towards the unification of the European patent system. During the journey towards patent harmonisation in Europe, it is however important that the regulatory framework of the patent system addresses the needs of the different market players, including start-ups. Their protection has been designated as one of the main policy objectives of the establishment of the Unified Patent Court (UPC). Nevertheless, it is not yet clear to what extent the establishment of the UPC can have an influence on the innovation of start-ups. The thesis' hypothesis is that some features of the UPC design may create certain asymmetries which bring strong established businesses in a more advantaged position than financially constrained ones. The thesis therefore answers the following main research question: "To what extent does the establishment of the UPC influence the innovation of start-ups?" The question is divided in further sub-questions, which correspond to the main Chapters.

First, the thesis addresses what the interplay between start-ups, innovation and the patent system is, thereby exploring the start-ups' landscape, the extent at which they patent and whether their position has been taken into account during the negotiations and development of a unified system of patent litigation. The study shows that due to the inherent characteristics of the start-up organisation, these businesses have a high innovative potential and that although only few start-ups seek patent protection, patent litigation can severely hinder their innovative activities.

Secondly, the thesis asks whether the establishment of the UPC strikes an appropriate balance of the interests of start-ups in the role of plaintiffs and defendants. In this context, it analyses the specific features of the system of unified patent protection which are deemed to be more relevant for start-ups and for their innovation activities and namely, the proximity to the venue of litigation, the implications of the territorial scope of UPC decisions, the costs of litigation before the UPC and it questions whether alternative dispute resolution methods represent a useful tool for start-ups. Overall, the analysis shows that the main features of the UPC design present several imbalances and asymmetries that tend to favour strong established businesses especially when in the position of potential plaintiffs. This poses a threat to the further development and implementation of the innovative activities of start-ups. It results that the asymmetries and their respective consequences can be, to a certain extent redressed through specific and tailored legal amendments and interpretation of provisions, as suggested for each specific feature.

The thesis further explores what the systematic implications of the UPC asymmetries on start-ups are and which one could be an alternative, more balanced, system. In fact, a solution which could be capable of re-equilibrating more comprehensively a great part of the imbalances, would require a more complete remodelling of the overall system. The study shows that the implementation of an alternative system with characteristics more aligned to the litigation system currently existing for EU trademarks would help to overcome the issues caused by the analysed imbalances and therefore mitigate their consequences, thereby safeguarding start-ups' innovation activities. The research has been carried out from September 2017 to October 2020.

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List of Abbreviations

ADR	Alternative Dispute Resolution
AG(s)	Advocate General(s)
AI	Artificial Intelligence
BGH	German Federal Court of Justice
BPatG	German Federal Patent Court
BR	Brussels Ia Regulation
CEIPI	Centre for International Intellectual Property Studies
CJEU	Court of Justice of the European Union
CMS(s)	Contracting Member States(s)
COPAC	Community Patent Appeal Court
CPC	Community Patent Convention
CPI	Code de la propriété intellectuelle
ECHR	European Convention on Human Rights
ECtHR	European Court of Human Rights
EEA	European Economic Area
EEC	European Economic Community
EIRMA	European Industrial Research Management Association
EPC	European Patent Convention
EPI	Institute of Professional Representatives before the EPO

EPLA	European Patent Litigation Agreement
EPLAW	European Patent Lawyers Association
EPO	European Patent Office
EPUE	European Patent with Unitary Effect
EPUE Reg.	European Patent with Unitary Effect Regulation
EU	European Union
EUIPO	European Union Intellectual Property Office
EUR	Euro
EUTM	European Union Trade mark
EUTMR	European Union Trade mark Regulation
IP	Intellectual Property
IPEC	Intellectual Property and Enterprise Court
IPR	Intellectual property right
IT	Information Technology
MPI	Max Planck Institute for Innovation and Competition
OECD	Organisation for Economic Cooperation and Development
PAP	Protocol on the Provisional Application on the UPC Agreement
PMAC	Patent Mediation and Arbitration Centre
R&D	Research and Development
RoP(s)	Rules of Procedure of the Unified Patent Court

SMEs	Small and Medium Sized Enterprises
TEU	Treaty on the European Union
TFEU	Treaty on the Functioning of the European Union
TGI	Tribunal de Grande Instance
The UK	The United Kingdom
The US	The United States
TMD	Trade Mark Directive
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UKIPO	United Kingdom Intellectual Property Office
UPC	Unified Patent Court
UPCA	Agreement on a Unified Patent Court
UPP	Unitary Patent Package
USPTO	United States Patent and Trademark Office
SEP(s)	Standard Essential Patent(s)
SME	Small and Medium-sized Enterprise
WIPO	World Intellectual Property Organization

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Introduction

The establishment of the Unified Patent Court (hereinafter 'UPC') in the context of the implementation of the Unitary Patent Package ('UPP'), will represent the result of the evolution towards the unification of the European patent system.[1] During the journey towards patent harmonisation in Europe, it is however necessary to consider not only that patenting activity is not uniform across the EU countries[2] but also that the need of patent protection changes depending on the type and nature of the concerned business.[3] In other words, the structure of a patent system influences in different ways the activities of certain industry actors in certain countries in comparison to others.

It is therefore important that the regulatory framework of the patent system addresses the needs of the different market players. This will help to promote their innovative activity as well as to understand whether certain safeguards are needed against the risks deriving from potential distortions in the market. Indeed, competition and further innovation may be hampered by the presence of too many patents, which can hinder market entry to a certain extent.[4] Further imbalances can result, for example, from the behaviour of certain big incumbent firms that have the means to protect their technologies or to acquire the patents of other entities and afterwards assert them against alleged infringers.[5] Hence, in a general perspective, the regulatory framework of the patent system plays an important role in preventing the emergence of potential distortions in the market and at the same time to support the development of the businesses involved, including SMEs and start-ups. The protection of the latter has been designated as one of the main policy objectives of the establishment of the unitary system,[6] together with the overarching aim to foster development and growth within the EU's innovation

[1] For an extensive description of the history of patent harmonisation in Europe see Aurora Plomer, 'A Unitary Patent for a (Dis)United Europe: The Long Shadow of History' (2015) 46 IIC 508 - 533. See in detail Chapter I, Section C.

[2] See EPO statistics on the filings by country of origin, 2008-2017, available at https://www.epo.org/about-us/annual-reports-statistics/statistics.html#applicants (accessed on 10 June 2018).

[3] EPO latest published statistics, 2017 available at https://www.epo.org/about-us/annual-reports-statistics/statistics.html#applicants (accessed on 10 June 2018).

[4] Concerns in this regard relate to the phenomenon of 'patent thickets'. See, among others, Federal Trade Commission, 'To Promote Innovation - The Proper Balance of Competition and Patent law and Policy' (October 2003) available at https://www.ftc.gov/reports/promote-innovation-proper-balance-competition-patent-law-policy (accessed on 11 June 2018). See, also, Commission, 'Pharmaceutical Sector Inquiry Final Report, Part I' (8 July 2009) and 'Communication of the Commission – Executive summary of the pharmaceutical sector inquiry report' (8 July 2009) In relation to the pharmaceutical sector, the Commission identifies strategic filing as a deterrent to market entry of generics and of efforts in R&D, therefore leading to potential violations of competition law.

[5] See, among others, Colleen V. Chien, 'Patent Assertion and Startup Innovation' (2013) New America Foundation Open Technology Institute White Paper, 1-67 available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2321340 (accessed on 15 October 2017).

[6] Dimitris Xenos, 'The European Unified Patent Court: Assessment and Implications of the Federalisation of the Patent System in Europe' (2013) 10(2) SCRIPTed 246, 248, citing the UK House of Commons Scrutiny Committee (2012) which expressed concerns about the effects of the unitary system on SMEs, supposedly 'the main intended beneficiaries' of the UPC system.

strategy. Nevertheless, the present study is relevant because it is yet not clear to what extent the establishment of a unitary patent system and associated Unified Patent Court can have an influence on their activities and ultimately on their innovative potential. In particular, within the SMEs category,[7] start-ups play an important role for innovation.[8] However, they register a high degree of business failure,[9] and during their life-cycle, start-ups face great difficulties in introducing their innovations in the market.[10] When it comes to the factors and causes relating to the uses of the IP system, it is relevant to note that they often lack information and expertise on IP strategies and that the high costs of the IP system and of enforcement of IPRs create a barrier to the exploitation of the innovation efforts of start-ups.[11] Within this framework, it is therefore important to explore to what extent the upcoming changes in the patent system will encourage or negatively affect start-ups' innovative activity. The study is relevant and original because, although scholars have already extensively analysed the complexities of the UPC in general, only few studies have taken into account – at best partially – the position of SMEs and start-ups.[12] Furthermore, there is no study that researches the implications the establishment of the UPC may have on the innovation incentives of start-ups. The present dissertation therefore

[7] According to the Commission Recommendation 2003/361/EC concerning the definition of micro, small and medium-sized enterprises, OJ L 124, Art 2 (1) SMEs are enterprises with fewer than 250 employees and either an annual turnover of no more than EUR 50,000,000 or an annual balance sheet total of no more than EUR 43,000,000.

[8] See in detail Chapter I, Section A.

[9] See, with limited referral to the ICT sector, Frank Lasch, Frédéric Le Roy, Saïd Yami, 'Critical growth factors of ICT start-ups' (2007) 45 Management Decision 62-75.

[10] Communication from the Commission, 'Europe's next leaders: the Start-up and Scale-up Initiative' COM(2016) 733 final, 9.

[11] Ibid.

[12] Only one recent study has presented statistical evidence on SMEs patenting in relation to the impact of the advent of the Unitary Patent on this business category. See Dimitri Xenos, 'The Impact of the European Patent System on SMEs and National States and the Advent of Unitary Patent' (2020) 36 Prometheus – Critical Studies in Innovation 51-68. The other studies that have been carried out at EU Level do not directly address these policy objectives. See Dietmar Harhoff, 'Economic cost-benefit analysis of a unified and integrated European patent litigation system' (2009) (Tender No. MARKT/2008/06/D 1) available at https://www.researchgate.net/publication/267839173_Economic_Cost-Benefit_Analysis_of_a_Unified_and_Integrated_European_Patent_Litigation_System (accessed on 15 October 2017). The study covers SMEs in one short paragraph, thus not providing a cost benefit analysis also in this regard. Moreover, it addresses the risk of increase of patent troll phenomenon but does not provide a legal analysis of this likelihood. See also studies at national level, House of Commons, European Scrutiny Committee, 'The Unified Patent Court: help or hindrance?' 65th Report of Session 2010-12 (3 May 2012); Deloitte Polska, 'Analysis of the potential economic impact from the introduction of Unitary Patent Protection in Poland' (October 2012) and Confederation of Finnish industries 'Report on the reform of the European patent system – On the impact of the Unitary Patent and Unified Patent Court on Finnish companies' (2014), which are limited to the concerns relating to the specific countries. A comprehensive empirical study by Luke McDonagh 'Exploring Perspectives of the Unified Patent Court and Unitary Patent within the Business and Legal Communities' (UK IPO 2014) available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/328035/UPC_Study.pdf (accessed on 15 October 2017) outlines the most important issues for the stakeholders who will potentially use the new system. The study is highly relevant for the present research. However, first of all the highlighted relevant issues should be revised in light of the occurred changes in the Rules of Procedure. Moreover, the qualitative interviews aim at providing a broader overview of the issues for all relevant stakeholders, without a specific focus on the perspectives and needs of start-ups´ category.

attempts to fill a gap in the existing literature concerning the establishment of the unified system of patent protection and litigation. Moreover, the study is relevant and topical in light of the upcoming entry into force of the UPC Agreement. In fact, after having overcome the uncertainties and delays concerning its entry into force, due to both the Brexit vote[13] and the complaints filed before the German Federal Constitutional Court,[14] the UPC Agreement and its Protocol on Provisional Application (PPA) have been now ratified by 17 Contracting Member States, including Germany,[15] and the UPC Agreement is expected to enter into force on 1 June 2023. Given that the study analyses the extent to which a system of unified patent protection influences, either positively or negatively, the innovation of start-ups, the analysis and findings of the dissertation are relevant despite of the upcoming entry into force, because they can be taken into account both in relation to any future reform of the Unified Patent Court system as currently envisaged

[13] After the Brexit referendum and vote, the possibility to leave open an opportunity for UK participation in the UPC has been subject to debate. For scholarship in this regard see, among others, in favour Ansgar Ohly and Rudolf Streinz, 'Can the UK stay in the UPC after Brexit' (2017) GRUR Int. 1-10; Richard Gordon, Tom Pascoe, "Re the Effect of 'Brexit' on the Unitary Patent Regulation and the Unified Patent Court Agreement' (Opinion commissioned by the IP Federation, the Chartered Institute of Patent Attorneys and the Intellectual Property Lawyers Association, 12 September 2016) paras. 42 et seq.; Matthias Leistner and Philipp Simon, 'Auswirkungen eines möglichen Brexit auf das europäische Patentsystem' (2017) GRUR Int. 825-833; *contra* Matthias Lamping and Hans Ullrich, 'The Impact of Brexit on Unitary Patent Protection and its Court' (2018) Max Planck Institute for Innovation & Competition Research Paper No. 18-20, available at https://ssrn.com/abstract=3232627 (accessed on 15 September 2018). The intention of UK of non-participation in the UPC has been recently confirmed in the letter dated 24 March 2020 written by the IP Minister Amanda Solloway and published by the House of Lords EU Justice Sub-Committee, available at https://d1pvkxkakgv4jo.cloudfront.net/app/uploads/2020/04/14131805/AStoLM-UPC-240320.pdf (accessed on 12 June 2020).

[14] On 20 March 2020 the German Federal Constitutional Court (*Bundesverfassungsgericht*, BVerfG) published its decision of 13 February in which it uphold the complaint against the legislation required for Germany to ratify the Unified Patent Court Agreement (UPCA) on the basis of the ground that it was not passed by the two thirds of the members of the Bundestag required for a transfer of sovereign rights. The decision is available athttps://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/DE/2020/02/rs20200213_2bvr073917.html (accessed on 21 March 2020). Further on, the ratification of the UPC Agreement has been put on hold upon request of the German Federal Constitutional Court, which has asked the Bundespräsident Frank-Walter Steinmeier, to avoid signing the bill into law. The request was due to the fact that on 18 December 2020, the day the Bundesrat completed the parliamentary ratification procedure by unanimously approving the bill, two constitutional complaints had been filed against ratification of the UPCA (2 BvR 2216/20 and 2 BvR 2217/20). On Friday 9 July 2021, the BVerfG decided that the complaints were inadmissible, arguing that the complainants had failed to 'sufficiently assert and substantiate a possible violation of their fundamental rights' See BVerfG Press Release No. 57/2021 of 09 July 2021, Order of 23 June 2021, available at https://www.bundesverfassungsgericht.de/SharedDocs/Pressemitteilungen/EN/2021/bvg21-057.html (accesed 10 December 2022). Subsequently, on 13 August 2021, the German implementing legislation allowing Germany to ratify the UPC Agreement and its Protocol on Provisional Application (PPA) entered into force.

[15] For the issues that accompanied the German ratification process see ibid. On 26 September 2021, in order for the ratification to be effective, the German Federal Government deposited the instrument of ratification of the PPA and of the UPCA of Germany. Further on, on 19 January 2022, following also Slovenia's and Austria's deposit of instrument of ratification of the PPA and the UPCA, the UPC Preparatory Committee declared the start of the provisional application period. The EU Member States which have already signed the UPCA are instead twenty-four and may ratify it at any time. For an overview of the status of ratification see https://www.unified-patent-court.org/en/organisation/upc-member-states (accessed on 11 December 2022).

and in relation to other alternative proposals of court systems for patent litigation that can be considered in the future.

Problem and Aims

The main overarching problem is that some features of the UPC design may well create certain imbalances and asymmetries between the potential users of the UPC. In particular, the defendant often finds herself in a less favorable position in comparison to the potential claimant, mainly because of the more extended 'room for manoeuvre' left to the latter, when it comes to the choice of forum and its related advantages. In addition, the analysed features bring strong established businesses in a more advantaged situation than financially constrained ones, considering that the formers would be better able to bear the risks that the UPC construction entails. In turn, these imbalances may well constitute a potential risk and hindrance for the implementation of the innovative activities of start-ups, that may have difficulties in defending themselves or enforcing their rights. The purpose of the present study is not to assess what could be the most suited patent strategy for a start-up, namely, whether they should rather opt for a national patent, a European patent or a European patent with unitary effect (hereinafter EPUE). This is indeed not an aim to be pursued in the context of a doctoral thesis. In fact, the most appropriate strategy cannot be assessed as such, but varies considerably depending on the characteristics of the single individual business. The aim of the present dissertation is instead to tackle and thoroughly analyse the features of the system that may well create potential imbalances, understand the implications they may have for the innovation of start-ups and propose legal changes which can help to re-balance the potential asymmetries. Further on, the purpose is to understand the systematic consequences that the imbalances may well create and address the need to take into consideration an alternative system which may prove to be better suited to meet the start-ups' needs, thereby safeguarding their innovative activities.

Research Questions

The thesis therefore answers the following main research question: 'To what extent does the establishment of the UPC influence the innovation of hi-tech start-ups?' The main question is then divided in further sub-questions.

(1) What is the interplay between start-ups, innovation and the patent system?
    a) What are start-ups and why are they important for innovation?
    b) To what extent do start-ups patent and for which reasons?
    c) To what extent have start-ups been taken into account during the negotiations and development of a unified system of patent litigation?
(2) What are the implications of the establishment of the UPC for start-ups for plaintiffs and defendants, respectively? Does the establishment of the UPC strike an appropriate balance of the interests involved?

a) Which types of actions are available for start-ups as plaintiffs and defendants in comparison to the current litigation framework?
b) Would litigation occur farther away from the place of domicile in comparison to the current litigation framework?
c) What would be the implications of the territorial scope of UPC decisions for the innovation of start-ups?
d) To what extent would litigation before the UPC be more expensive than litigation before national courts?
e) To what extent could alternative dispute resolution methods represent a useful tool for start-ups?

(3) What are the systematic implications of the UPC asymmetries on the population of start-ups? Which could be an alternative, more balanced system?
a) Would start-ups be more likely to act as plaintiffs or defendants and for which reasons?
b) Would therefore the potential consequences of the establishment of the UPC have a greater influence on start-ups than of other market players?
c) Which alternative system can be considered to better respond to the interests of start-ups?

Chapter I explores how start-ups relate with the patent system in general. This will allow to define important premises to better understand the implications of the upcoming changes in the patent system on the innovation of these market players. The Chapter is divided in three Sections. Section A provides the relevant definitions and assesses the link between start-ups and innovation. Section B questions the role of patents as incentives for the innovation of start-ups, explores the reasons why they may seek patent protection and examines how the patent system in general can influence their innovative activities. Section C analyses to what extent the position of start-ups has been taken into account during the negotiations aimed at the implementation of a unified system of patent protection.

Further on, Chapter II analyses the main features of the UPC system which are of relevance for start-ups and assesses what are their specific implications for potential start-up litigants. The Chapter is divided in five Sections. Section A explores the different types of actions available to patentees and non-patentees under the envisaged court system. Section B analyses where litigation is going to take place and the issues related to the existence or lack of geographic proximity in this regard. Section C examines the implications of the territorial scope of UPC decisions and the risks the latter may entail for the innovation of start-ups. Moreover, a comparison between the litigation costs under the current and future envisaged system is provided in Section D. Lastly, Section E addresses the potentials that mediation and arbitration, as expected to operate in the context of the UPC Patent Mediation and Arbitration Centre (PMAC), are likely to bring.

To conclude, Chapter III explores the systematic consequences that the establishment of the UPC may have and to what extent they would have an influence on start-ups. Moreover, it addresses the opportunity to reconsider an alternative system which could prove to be better suited to meet the needs and interests of start-ups.

Overall, the analysis will show that the main features of the UPC design present several imbalances and asymmetries that tend to favour strong established businesses especially when in the position of potential plaintiffs over more financially constrained market players, such as start-ups. This poses a threat to the further development and implementation of their innovative activities. It results that the asymmetries and their respective consequences can be, to a certain extent, redressed through specific and tailored legal amendments and interpretation of provisions, as suggested for each specific feature. Yet, despite of the need and importance of the envisaged proposals, a solution which could be capable of re-equilibrating more comprehensively a great part of the imbalances would require a more complete remodelling of the overall system. Hence, the study shows that the implementation of an alternative system with characteristics more aligned to the litigation system currently existing for EU trademarks would help to overcome the issues caused by the analysed imbalances and therefore mitigate their consequences, thereby safeguarding start-ups innovation activities.

Methodology and Limitations

The study consists of an *ex ante* evaluation of legislation, which has been defined as '[f]uture oriented research into the expected effects and side-effects of potential new legislation (…). Such research includes a study of the possible effects and side-effects of alternatives, including the alternative of not regulating at all.'[16] The methodological literature[17] has individuated four main rationales at the basis of *ex ante* evaluation, namely, (1) the improvement in the quality of decision making, (2) democracy via participation in decision making, (3) transparency, justification, accountability, and (4) collection of evidence concerning the matter that needs to be decided.[18] The evaluation should begin without any *a priori* bias in favour of or against legislative or regulatory intervention. The evaluation could find that no problem exists, and no action should be taken. It should be conducted considering all options that at first sight seem to be worth of investigation and it should be carried out as early on as possible.[19] In general, evaluation studies address different basic central research questions, such as the assessment of the effectiveness, the effects, the impact, the validity of the policy theory or the judicial correctness. It is however extremely challenging to articulate which events will occur in the

[16] Jonathan Verschuuren, *The Impact of Legislation: A Critical Analysis of ex ante Evaluation* (Martinus Nijhoff Publishers, 2009) 13.
[17] Pierre Larouche, 'Ex Ante evaluation of Legislation Torn Among its Rationales' in Jonathan Verschuuren (ed.), *The Impact of Legislation: A Critical Analysis of Ex Ante Evaluation* (Martinus Nijhoff Publishers, 2009) 46.
[18] For an explanation of these rationales in more detail see ibid. 47-49.
[19] Ibid., 48.

future, and calculating the effects of these events on the legislative framework is very complicated. In this context, apart from the construction of a research design, a share of knowledge of socio-legal theory is necessary to understand the future developments.[20] An important research goal in trying to predict the effects of laws has always been the determination of variables that could support or hinder the functioning of the law. For the study at hand, the variables are the specific features of the system of unified patent protection which are deemed to be more relevant for start-ups and for their innovation activities, namely, the proximity of the litigation venue, the territorial scope of decisions, the costs and the availability of alternative dispute resolution methods.

To answer the main research questions, the study uses several research methods. To analyse the interplay between start-ups and the patent system, Chapter I mainly relies on empirical studies in the economic and managerial literature, based on the currently available data which allow to draw informed conclusions on the matter. Moreover, the interest groups theory is used as a framework and applied to the historical evolution which led to the last UPC proposal. Its application allows to understand to what extent the interests of start-ups had or not a role or influence during the negotiations towards the construction of a system of unified patent litigation.

Further on, in order to assess whether the envisaged structure of the UPC concretely safeguards also the interests of start-ups and thus fosters their innovation activities, Chapter II proceeds with the analysis of certain specific features of the UPC design which can have particular relevance for start-ups. The analysis is carried out through the use of different comparative methods. Indeed, the thesis analyses the specific characteristics of the chosen features by applying, on a parallel basis, national and horizontal (e.g. comparing the principle of proportionality as regards injunctions, damages etc. in different Member States; comparing the costs of litigation in several Member States), international and vertical (e.g. comparing the location of litigation before national courts and before the UPC; analysing the implications of the scope of decisions of national courts and of an international court; comparing the criteria of application of permanent injunctions at domestic level and at UPC level).[21] Moreover, the comparative law method is not limited to a formal study of the sources of the law, but goes instead beyond the mere analysis of legislation. This is necessary because certain principles and criteria of application are not always incorporated in the law. A comprehensive comparative analysis then requires taking into account the case law of both national courts and of the CJEU and relevant legal scholarship.[22] In this regard it is in addition relevant to stress that the analysis of the influence on innovation will be carried out comparing the upcoming unitary patent system

[20] Koen Van Aeken, 'Pushing Evaluation Forward' in Jonathan Verschuuren (ed.), *The Impact of Legislation: A Critical Analysis of Ex Ante Evaluation* (Martinus Nijhoff Publishers, 2009) 107.
[21] Konrad Zweigert and Hein Kötz, *An introduction to comparative law* (Oxford University Press, 1998) 5.
[22] Konrad Zweigert and Hein Kötz, *An introduction to comparative law* (Oxford University Press, 1998) 33-34.

to the current one. Thereby, as a counterfactual of comparison, it will use the event in which the new system was not in existence. The assessment of such counterfactual allows indeed to have a benchmark for a more rigorous comparison.

Lastly, Chapter III envisages the study and implementation of an alternative system designed by adopting an inductive approach, whose premises are the results and conclusions reached in Chapter II.

The study has several limitations. First of all, the analysis of the interplay between start-ups, innovation and the patent system relies on the data that are currently available. The relatively limited amount of studies available on the matter and their – at times – contrasting findings pose a threat to the rigorousness of the analysis. However, carrying out a comprehensive quantitative economic study on the current start-up landscape in Europe would have been beyond the technical and time limits available for the present thesis. Moreover, the presentation of the currently available studies is sufficient to fulfil the purpose of the mentioned analysis, which is merely to provide a broader understanding of the start-ups landscape and set a context for the main legal analysis. Nevertheless, during the course of reading, it is important to always keep in mind that the needs and strategic considerations of start-ups may vary considerably depending on the sector, on the location and on the specific characteristics of the business concerned. Secondly, the study is limited to the analysis of the selected features of litigation before the UPC, thereby excluding the exam of the implications of the substantive law provisions concerning unitary patent protection. The analysed features are the number and type of actions available for plaintiffs and defendants; the proximity of litigation based on the rule of jurisdiction and competence; the implications of the territorial extent of jurisdiction; the costs of litigation and the availability of alternative dispute resolution methods. In particular, in relation to the analysis of rules of jurisdiction and competence, the following further limitations must be stressed:

(i) The nature and number of the own international forum rules of Member States or of third states, which allow for example a US defendant to be sued in a Member State or to be sued in her home state are not addressed, because they vary considerably. A referral is made only in relation to the so called 'long-arm jurisdiction' concerning the UPC damage claim, to the extent that it serves the purposes of the analysis at hand.
(ii) The implications of the rules concerning jurisdiction for European patents which are opted-out and thus are not subject to the competence of the UPC for a limited period of time if the proprietors continue to litigate before national courts,[23] are not analysed. The reason is mainly because the opt-out option is limited in time, while the overarching purpose of the present study is to assess the possible long-term implications of the envisaged system of unified patent protection.

[23] Article 83 UPCA.

(iii) Lastly, the study does not address the rules on recognition and enforcement which relate to the final stage of procedures. They are addressed only to the extent that they contribute to the analysis of the other selected features.

Thirdly, the horizontal comparison involves only three main jurisdictions, namely, Germany, France and the United Kingdom. The choice is limited to these countries mainly because they represent the three jurisdictions in which the majority of patent cases take place within the European area and because, at the time of research, they still constituted the envisaged locations of the UPC central division. In particular, despite the Brexit vote, the possibility of the United Kingdom participation in the UPC has long been taken into account and despite of the UK's non-participation in the UPC system, the analysis of the UK legal system is still relevant in the context of the present dissertation. Indeed, the UK legal tradition, which presents more considerable differences in comparison to the ones of the Member States within the Continent, deserves particular attention as it has contributed to shaping the rules envisaged for the regulation and functioning of the UPC. Its analysis is therefore a key premise for a more comprehensive understanding of the UPC system.

Chapter 1 – The Interplay between Start-ups, Innovation and the Patent System

The present Chapter aims at exploring how start-ups interrelate with innovation and the patent system. To this purpose, Section A provides a better understanding of the functioning and needs of start-ups and the reasons why they are important for innovation. Section B, by taking into account economic and empirical studies, analyses instead the extent to which they seek patent protection and the reasons that potentially drive their choices. Lastly, Section C examines the extent at which start-ups had an influence or have been taken into account during the negotiations toward the implementation of a system of unified patent protection. It therefore answers the following research questions:

1) What is the interplay between start-ups, innovation and the patent system?
    a) What are start-ups and why are they important for innovation?
    b) To what extent do start-ups patent and for which reasons?
    c) To what extent have start-ups been taken into account during the negotiations and development of a unified system of patent litigation?

A. Start-ups and Innovation

As a starting point it is necessary to provide an overview of the start-ups landscape. This Section will therefore address what start-ups are, questioning the need of a structured definition. Furthermore, it will provide a justification of the relevance of focussing on start-ups and explore their incentives to innovate through the analysis of their lifecycle. Lastly, after acknowledging that the growth of new ventures is influenced by many factors, it will open the direction for further research.

I. What are start-ups?

Corporate law does not recognise a start-up as a specific form of a company and often categorises the start-up business under one of the more traditional types of legal entities depending on the presence and type of the formalistic elements such as legal personality, limited liability, management, the nature of the shares and the relationships between stakeholders.[24] Although several of these formal elements are relevant and important for start-ups, these businesses also present specific features that distinguish them from established businesses. Yet, there is no

[24] Alexandra Andhov, 'Importance of Start-up Law for Our Legal systems' in Alexandra Andhov (eds) *Start-up Law* (Edward Elgar 2020) 9, 11.

widely accepted legal definition of a start-up.[25] In this context, the present Section explores a set of different definitions for new market entrants and questions the need of a definition based on fixed parameters for the purposes of the present research. Furthermore, it provides insights on the innovative behaviour in different industry sectors.It is relevant to acknowledge that, in order to empirically assess the innovative activity of new market entrants, different categories have been identified, which will be briefly addressed hereinafter.

1. A Definitory Attempt

A first category relies on a concept that has been coined already three decades ago and relates to 'new-technology based firms' (NTBFs). These have been defined as independently owned businesses, not older than 25 years and based on the exploitation of a technological innovation which implies substantial technological risks.[26] Subsequently, the NTBFs definition has been almost abandoned in the literature and the typology has been included into the broader category of 'SMEs in technology intensive sectors', which does not include the concept of newness of the company and refers to SMEs that often merely adapt innovations that are already available in the market. In general, these companies have a higher survival rate, a faster employment growth and their funders report lack of access to finance as a main constraint.[27]

Another related category which has been recognised is that of 'gazelles', which do not need to be small and young and are not innovation-based but are instead defined on the sole basis of their fast growth.[28]

More recently the focus has shifted toward the activity of 'young innovative enterprises' (YIE) which are defined in the EU state aid rules as small enterprises which are younger than 6 years and are capable of developing products or processes that are technologically new or substantially improved, have less than 250 employees, carry a high risk of commercial failure and have R&D intensity of at least 15% in the last three years or currently.[29]

Furthermore, current studies at the European level, such as the ones carried out by the European Startup Monitor (ESM), take into consideration businesses which are not older than 10 years,

[25] Ibid.
[26] Arthur D. Little, 'New technology-based firms in the United Kingdom and the Federal Republic of Germany' (Report for the Anglo-German Foundation for the Study of Industrial Society 1977).
[27] David J. Storey, and Bruce S. Tether, 'New technology-based firms in the European Union: an introduction' (1998) 26(9) Research Policy 933–946.
[28] Thomas Philippon and Nicolas Véron 'Financing Europe's fast movers' (Bruegel Policy Brief, No. 2008/01).
[29] European Commission, 'Handbook on community State Aid Rules – Including temporary State aid measures to support access to finance in the current financial and economic crisis' (2009) 14.

which feature (highly) innovative technologies and/or business models and that have or look for a significant sale and/or employee growth.[30]

From this brief overview it is evident that these definitions rely on an established set of often numerical variables. This approach is indeed strictly necessary when the purpose is to provide empirical and quantifiable findings on specific issues. Conversely, setting clear parameters is not so important in the context of a legal analysis. On the contrary, the lack of flexibility may lead to exclude certain actors as potential addressees of the envisaged solutions, which may nevertheless be relevant also for them. Therefore, rather than defining fixed schemes based on the number of years of life, for the purposes of the present research it is more appropriate to refer to start-ups in broader terms, as new businesses which have a peculiar evolution and characteristics and are innovation-based.[31]

Within this framework, a comprehensive method to gain a deeper understanding of the start-up landscape is to explore the different phases of the start-up life-cycle. Moreover, this analysis will also help to understand the reasons why start-ups engage in their activity and innovate. The economic, management and legal literature has addressed some factors that, depending on the different cases, can influence the choices of new entrants to engage in innovation.[32] However, the factors that spur innovation as well as the needs of the start-up entity may well change depending on the peculiarities of the different stages of development. Therefore, the following sub-section, by distinguishing various start-ups' phases of life,[33] aims at providing a better understanding of the start-ups' panorama and detecting the most important needs and incentives to innovate.

[30] The studies of the ESM analyse entrepreneurial activities and motives of entrepreneurs across European countries and their aim is to identify common challenges in the EU start-up landscape and to analyse relevant developments. See 'European Startup Monitor Reports', available at https://europeanstartupmonitor2019.eu/ (accessed on 27 January 2018).

[31] The interplay between start-ups and innovation will be thoroughly analysed in Section II of the present Chapter.

[32] The existing literature has individuated factors such as the likelihood of entry, the exit opportunities, the association with venture capital, the possibility for licensing, the strength of intellectual property protection, the control over complementary assets and the possibility of cooperation between entrants and incumbents. See, among others, Joshua Gans, David Hsu and Scott Stern, 'When does start-up innovation spur the gale of creative destruction?' (2002) 33(4) RAND Journal of Economics 571-586; Joshua Gans and Scott Stern, 'Incumbency and R&D incentives: licensing the gale of creative destruction' (2000) 9(4) Journal of Economics and Management Strategy 485-511; Spencer Weber Waller and Matthew Sag, 'Promoting Innovation' (2015) 100 Iowa L. Rev. 2223-2247.

[33] The division in phases has been designed following the division suggested in Gerald B. Halt, John C. Donch, et al. *Intellectual Property and Financing Strategies for Technology Startups* (Springer, 2017), which has been adapted according to the purposes of the present analysis. The division is abstract and is done for classification purposes. Indeed, an exit event (here included in the mature phase) could in some cases already occur during the early-stage phase.

2. The Start-ups' Lifecycle: an Analysis of the Different Phases and Individuation of Incentives to Innovate

This Section analyses the different phases of the start-ups' life cycle, namely the seed phase, the early-stage phase, the growth and expansion phase, and lastly the mature, exit and success phase.

a) Seed phase

The seed phase refers to the stage in which the entrepreneur has conceived his new idea and attempts to develop it to turn it into a marketable innovation. The life of the start-up entity therefore begins with a founding event and at this stage the business decisions are driven by the members of the team.[34]

In this phase, normally, the business still works on the development of the invention and therefore it does not generate any self-produced revenue yet. Thus, the new-born business needs to seek seed funding which it can use to implement its idea. The purpose of seed funding is indeed to sustain the start-up research activity until the business manages to obtain further infusions of cash in the subsequent stages of life. Seed funding is mainly used to cover the initial costs of research and first development of the technology. Given the fact that the business is still at a very initial stage, the phase is characterised by a very high degree of uncertainty. The founders themselves may not have a very clear idea on what the start-up will be and on its potential of growth. This causes several difficulties in obtaining funding during the seed stage. Therefore, in this phase the inventor-founders mainly employ either their personal capital,[35] or family and friends support, grants or possibly crowdfunding.[36]

From this brief overview of the main peculiarities of the here defined seed phase, one can infer that the main need that the entrepreneur faces here is to obtain funds. And the degree of trust she can obtain depends, among others, on the quality of the inventions. Therefore, the effort to innovate is driven by the need to gain funding in order to proceed towards the subsequent phases of the start-up's life.

b) Early-stage phase

Once the business gets the initial support, the efforts and resources move towards the development of the technology.

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[34] See John Freeman and Jerome S. Engel, 'Models of Innovation: Startups and Mature Corporations' (2007) 50 (1) California Management Review 94, 104.

[35] Usually, the earliest sources of funding come from personal investments made by the company founders. This is also referred to as bootstrapping or self-financing.

[36] Crowdfunding is a new way to obtain funding. It consists in the pooling of money coming from a network of many individuals and it usually takes place through an online platform.

In order to achieve the business goals, the entity needs to receive more consistent financing. External investment requires however the presence of a business plan, that the founders have to implement during this phase. The plan has to contain all the relevant details of the start-up strategy for its development. In particular, it has to highlight the amount of funding received and indicate where and how future resources will be allocated as well as provide a justification for the envisaged allocation. A detailed business plan functions as a tool to attract potential investors since it provides them with an indication of the start-up development and potential future growth.[37]

The start-up can obtain financing in the form of equity founding, which is the most common source during this phase, as well as during the subsequent growth and mature phase. It mainly consists in the exchange of partial ownership of the business for an amount of funding.[38] In particular, relevant sources in this regard are venture capitalists[39] and angel investors.[40] On the one hand, the advantage of equity financing is that the company does not incur debt and therefore has no obligation to repay the money back to the investor. On the other hand, the equity of the company becomes diluted. This implies that at this stage the external investor is directly involved in the major business decisions and often requires to hire expert managers who substitute the position of the members of the funding team.[41]

During this phase, start-ups may well seek support from a business incubator or accelerator. The participation in this type of organisations will facilitate the transition of the company from the early-stage to the growth and expansion phase.

Incubators offer to participants not only services and office equipment but provide them also with a wide network of mentors, professionals and experts specialised in the relevant fields of interest.[42] Accelerators aim at helping the business to bring the technology to the market and increase the exposure of the participant to potential investors. The support from and

[37] Gerald B. Halt, John C. Donch, et al. et al., *Intellectual Property and Financing Strategies for Technology Startups* (Springer, 2017) 43.
[38] Ibid., 22
[39] Venture Capital ('VC') is a form of funding for an early-stage start-up. VC funds are usually granted upon recognition of a certain role within the business management decisions, such as a stock of the company, the right to approve loans, decisions over the employment process etc.
[40] Due to the high degree of risk, angel investors often require a higher rate as a return of their investment than venture capitalists. Usually, angels invest in industries in which they have experience, and which are located in the neighbourhood of the angel. For more in this regard see, among others, Mark Van Osnabrugge and Robert J. Robinson, *Angel Investing: Matching Startup Funds with Startup Companies – The Guide for Entrepreneurs and Individual Investors* (John Wiley & Sons, 2000).
[41] See John Freeman and Jerome S. Engel, 'Models of Innovation: Startups and Mature Corporations' (2007) 50(1) California Management Review 94, 104.
[42] In particular, joining a business incubator is highly valuable for inexperienced entrepreneurs who can gain business advice from other successful entrepreneurs, as well as benefit from educational programming and volunteer initiatives organised by the incubator, encouraged to make connections and business contacts that they otherwise could never possibly establish.

collaboration with these entities is of importance since investors may well then be more confident to provide funding, also due to the fact that the business has been selected to participate in the incubator and/or accelerator network.[43]

Similar to the seed phase, in the early-stage one, it also appears that the main factor that drives start-ups' innovative activity is the need to attract financing from external investors in order to proceed with the subsequent stages of life.

c) Growth and Expansion Phase

When the company reaches a phase of growth and expansion, its organisation has to be more structured, and the company starts to obtain its own profits and revenues from the commercialisation of its products. In contrast to the situation in the other phases, at this stage it is relatively easier to obtain financing. In particular, given that there is less risk of failure, the start-up can benefit not only from equity funding, but can also require debt financing in the form of loans,[44] lines of credit,[45] securitisation with IP,[46] and collateralisation of IP.[47]

During this phase, the focus of the start-up efforts moves from the implementation and development of the new technology to its commercialisation. In this regard, even if the specific commercialisation strategies can differ from sector to sector, two main approaches can be identified, namely, commercialisation through competition and commercialisation through cooperation with established firms.[48]

The start-up chooses a competition strategy when it decides to launch its technological invention in the market in an autonomous manner. On the one hand, this requires the start-up to test the market in order to offer a product that is new to the customer, as well as to gain the necessary complementary assets. Moreover, it has to take into account the competitive strategies of the

[43] Application criteria can include the quality of the company's business plan, the composition of the members of the management team and the estimated time to commercialisation.

[44] When the founders of the company have good credit and own real estate or other valuable assets, it may be possible to obtain financing for the company through private loans made to the founder personally.

[45] Even if banks usually grant credit cards only to more established businesses, it is possible to obtain a credit card issued to the new venture.

[46] When the start-up owns intellectual property assets, the business can, for example, sell part of its rights on future royalties deriving from licensing agreements.

[47] IP-based collateralisation allows the IP holder to obtain a loan in exchange of a security right in the IP. The lender obtains the rights on the IP asset if the loan agreement is not fulfilled. The collateralization process is however difficult to implement because it requires the valuation of the IP asset before the lending, which is often difficult to obtain with accuracy.

[48] Joshua S. Gans and Scott Stern, 'The product market and the market for 'ideas': commercialization strategies for technology entrepreneurs' (2003) 32 Research Policy 333–350. The authors assess the impact of start-up innovation, comparing the two strategies. Interestingly, they find that when IP protection is strong and incumbent firms hold the relevant complementary assets, start-ups gain more profits from their innovative efforts if they engage in cooperative strategies rather than competing directly with the incumbent firms. Conversely, when IP protection is weak and there are low barriers of entry in the market, competitive strategies are more frequent.

established firms such as aggressive price competition and the ability of incumbents to imitate the relevant technology.[49] On the other hand, as stressed above,[50] established incumbents may not recognise the value of the new technological innovation and may not have the flexibility to develop a tailored commercialisation strategy.[51]

The other main alternative for commercialisation is to engage in cooperation with other incumbent firms, which will be in charge of commercialising the technology in the product market.[52] Cooperation strategies may vary considerably. On the one hand, the start-up company may license its intellectual property. In this way, the two entities cooperate for the commercialisation but keep their independence at the same time. On the other hand, a form of cooperation for commercialisation consists in the acquisition of the start-up by the incumbent firm.[53] Through this strategy the whole business is sold to the established incumbent firm, which takes control of its organisation and implements the product commercialisation. Within these two extremes, other forms of cooperation through negotiation of several contract relationships are possible, from joint ventures to finance contracting and know-how exchange.[54]

Overall, within each cooperation strategy, to gain higher profits, the start-up needs to hold strong negotiation power.

Therefore, in this phase, start-ups need to choose the type of commercialisation strategy they want to implement, and informed decisions can be made only on the basis of an extensive analysis and knowledge of the industry sector-specific peculiarities. Surely, the company can transit from one strategy to another, but the process may well lead to substantial switching costs.[55]

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[49] Ibid.

[50] See Section II par.2 a).

[51] Richard N., Foster, *Innovation: The Attacker's Advantage* (Summit Books, 1986); Rebecca Henderson and Kim Clark, 'Architectural innovation: the reconfiguration of existing product technologies and the failure of established firms' (1990) 35 Administrative Science Quarterly 1, 9–30; Joshua S. Gans and Scott Stern, 'The product market and the market for 'ideas': commercialization strategies for technology entrepreneurs' (2003) 32 Research Policy 333, 333.

[52] According to Joshua S. Gans and Scott Stern 'The product market and the market for 'ideas': commercialization strategies for technology entrepreneurs' (2003) 32 Research Policy 333, 336-337, the start-up decides to make profits through the so-called 'market for ideas', rather than from the direct commercialisation of the product in the market.

[53] Bruce A. Blonigen and Christopher T. Taylor, 'R&D activity and acquisitions in high technology industries: evidence from the US electronics industry' (2000) 48 Journal of Industrial Economics 47-70.

[54] Joanne Oxley, 'Appropriability hazards and governance in strategic alliances: a transactions cost approach' (1997) 13(2) Journal of Law Economics and Organization 387, 392.

[55] For example, competitive strategies require consistent initial investments and, after entry has occurred, switching to cooperation strategies may raise issues of compliance with competition law. Conversely, cooperation strategies require negotiations, which imply risks of disclosure when it comes to changing to a competition strategy. See Joshua S. Gans and Scott Stern, 'The product market and the market for 'ideas': commercialization strategies for technology entrepreneurs' (2003) 32 Research Policy 333, 336-337.

Overall, it is possible to infer that during this phase the business entity innovates primarily in order to gain profits, by way of either competition or cooperation. This will in turn allow the business to increase its value and obtain further financing through equity or debt funding.

d) Mature, Exit and Success phase

Subsequently, the company enters in a mature phase, during which financing becomes a less important issue and the company starts to benefit from the results of its previous growth. In a great number of cases, at this stage the business starts to develop and implement an exit strategy.[56]

Therefore, start-ups need to plan their success phase strategy, depending on the goals that they aim to achieve. It is not feasible to provide a generalized definition of success, since this varies greatly from business to business. In particular, for some entities success may mean to become a profitable and established business by attracting relevant customers. For others, it may mean obtaining a very high valued Initial Public Offering (IPO) or being acquired at a very high price. Therefore, in the mature phase, the strategy must be aligned with the respective definition of success.

First of all, attracting a major customer can certainly represent an important step in the success phase of a company and it may be perceived as an indicator that the business has additional potential to grow and to become established. In this regard, it should be noted that, in certain cases in which the customer may create value to the company, the owner of the start-up provides a right of first offer to the initial customer in case the owner receives an offer to sell the company.[57]

Secondly, if the company manages to reach the mature stage and to become an attractive target in the M&A market place, it will be able to initiate an IPO to raise additional capital. With an IPO, the company shifts from being a private entity to being a publicly traded one.[58] On the one hand, upon receiving an IPO and when in general traded at public level, the company obtains more publicity than private companies, which in turn increases the investors' interest in the business. Moreover, trading activity can help to register an increase in the value of the shares. On the other hand, however, being public also implies certain drawbacks, such as mandatory disclosures (on financial statements, profiles of directors and shareholders) and the great expenses related to

[56] Gerald B. Halt, John C. Donch, et al. et al et al., *Intellectual Property and Financing Strategies for Technology Startups* (Springer, 2017) 43.
[57] Gerald B. Halt, John C. Donch, et al. *Intellectual Property and Financing Strategies for Technology Startups* (Springer, 2017) 43.
[58] The earnings that the company derives from the IPO can be used for further investments as well as to pay possible existing debts.

the process of going public.[59] Nevertheless, in this regard, recent studies[60] show that Initial Public Offerings for small companies register a decline when compared to the IPO market for larger companies, which exit the public market through greater transactions. Small companies remain instead in the small capitalisation category and often fail to grow. Therefore, it seems that the success of an IPO depends on the level of growth and growth potential of the company.

Lastly, in certain cases the major goal of starting the company or to pursue innovative activity, is to be bought out by a larger company or by a competitor. Indeed, many large companies acquire developing start-ups that can become potential competitors, or even purchase them with the only initial purpose to avoid them being acquired by their direct competitors.[61] In particular, acquisitions have indeed relevant implications both for the incumbents as well as for start-ups. On the one hand, incumbents often have resources that go well beyond the possibilities of start-ups to successfully bring the innovation to the market.[62] On the other side, incumbents often register difficulties in implementing innovations beyond their fields of technological experience.[63]

Regardless of which is the specific success strategy, at the end the start-up will either become an established business with a structured organisation or take an exit opportunity. In relation to this phase, it is therefore possible to note that the business pursues and supports its innovation activity with the objective of being successful, whatever the definition of success for the particular business is.

The path through the start-up's lifecycle has allowed to identify that what spurs innovation is the need to obtain financing, the need to increase profits as well as the need to reach success. This allows to infer that start-ups' primary incentive to engage in innovation is the ambition to grow. Indeed, the more start-ups grow and have great growth potential, the more they attract financing from external investors. Furthermore, the more they grow the higher the profits they achieve.

[59] Ibid.

[60] Paul Rose and Steven D. Solomon, 'Where have all the IPOs gone? The hard life of the small IPO' (2016) 6 Harv. Bus. L. Rev. 83-128. The authors find that small IPOs have a different lifecycle than the ones of larger companies and that only 55% of small companies remain listed on a public exchange after five years. They attribute one possible reason of the phenomenon to the fact that historically small companies are less suited for the public market.

[61] Spencer Weber Waller and Matthew Sag, 'Promoting Innovation' (2015) 100 Iowa L. Rev. 2223, 2243.

[62] For example, when Google acquired Youtube, it was in a better position to deal with the legal challenges that the video service provider had to face.

[63] Spencer Weber Waller and Matthew Sag, 'Promoting Innovation' (2015) 100 Iowa L. Rev. 2223, 2243. In this regard it should be stressed that competition agencies and mergers control bodies need to carefully analyse whether the only likely effect of a particular acquisition is the maintenance of an existing dominance through the removal of an innovator from the market. However, this is not relevant for the purposes of the present research, which indeed focuses on the effects on innovation of start-ups and not on innovation as a whole.

Lastly, the more they grow, the greater the exit opportunities are or the faster they become an established business.[64]

It may be possible to argue that all the individuated incentives ultimately lead to the last one, namely, to have success. Moreover, even within the possible ways in which success could be interpreted, it can be argued that the final objective and driving incentive to innovate is to be acquired by another entity. Indeed, receiving an IPO or becoming established after signing relevant customers can be interpreted as an intermediary step during the success stage towards a final acquisition. However, if this could be more likely to happen in some sectors than others,[65] an over-generalisation in this regard should be avoided.

In light of the above, for the purposes of the present research, the term innovation corresponds to the life of the start-up and its activity as such. In other words, each factor which fosters the growth of the new venture and facilitates the passage from the idea of the seed phase to the implementation and commercialisation of the invention either by way of 'competition' or 'cooperation' in the subsequent phases, is deemed to have a positive influence on innovation.

Therefore, if growth is an important objective for start-ups and a driver of innovation, the next section explores which are the factors that play a role in the evolution of the new firm.

3. Growth Factors

The identification of the growth drivers of small firms is a debated and controversial issue. Taking into consideration the differences between the ventures as well as the determinants and variables that may come into play, the management literature[66] has identified three main approaches, which look respectively at entrepreneurial factors, contextual factors and strategic and access to resources factors, briefly addressed hereinafter.

a) Entrepreneurial factors

A first determinant that is deemed to have a relevant role in driving the growth of the company are the personal individual skills of the founder of the company and of his team and their ability

[64] This finding is consistent with Joshua S. Gans and Scott Stern, 'The product market and the market for 'ideas': commercialization strategies for technology entrepreneurs' (2003) 32 Research Policy 333–350, according to whom 'growth is widely considered an impelling objective for new ventures'. At the same time acknowledging the fact that expectations for growth can change over the firm's lifecycle.

[65] See in this regard Martin Andersson and Jing Xiao, 'Acquisitions of start-ups by incumbent businesses: A market selection process of 'high-quality' entrants?' (2016) 45(1) Research Policy 272–290. Their findings support the argument that acquisitions are more likely to occur in markets where the costs of entry are large, access to finance is important and incumbents hold valuable complementary assets.

[66] Bernardo Balboni, Guido Bortoluzzi, Moreno Tivan et al., 'The Growth Drivers of Start-up Firms and Business Modelling: A First Step toward a Desirable Convergence' (2014) 9(2) Management 131–154.

to overcome the difficulties encountered by new business entrants, such as scarce knowledge of the market and constrained sales opportunities.[67]

b) Contextual factors

Another approach looks at how the environment and the context in which the firms operates is likely to influence the growth of the business. Within this approach, it is possible to individuate three perspectives.

The first looks at the structure of the industry. On the one hand, some studies claim that certain industry sectors and their market dynamics provide better conditions for the growth of new entrants.[68] On the other hand, other studies highlight that the strategic choices of the firms create the markets and particular niches.[69]

A second perspective looks instead at the influence of factors such as regulations, norms and infrastructures on the growth of firms.[70]

A third view within the contextual approach emphasises the importance of the location in which the new firm is established and the characteristics of the given environment.[71]

[67] James W. Carland, Frank Hoy and Johann A. Carland, 'Who is an Entrepreneur? Is a Question Worth Asking' (1988) 124(2) American Journal of Small Business 33–39; David E. Terpstra and Philip D. Olson, 'Entrepreneurial Start-up and Growth: A Classification of Problems' (1993) 17(2) Entrepreneurship: Theory and Practice 5–20.

[68] Arnold C. Cooper, Javier Gimeno-Gascon and Carolyn Y. Woo. 'Initial Human and Financial Capital as Predictors of New Venture Performance' (1994) 9(5) Journal of Business Venturing 371–395; Marco Vivarelli and David B. Audretsch, 'The Link between the Entry Decision and Post-Entry Performance: Evidence from Italy' (1998) 7(3) Industrial and Corporate Change 485–500.

[69] Deloitte and Touche Consulting Group, 'Fast Growing SMEs in Great Britain' (The Ten Percenters: Second Report, 1997).

[70] Michael Fritsch, 'New Firms and Regional Employment Change' (1997) 9(5) Small Business Economics 437–48; Simeon Djankov, Caralee McLiesh and Rita Maria Ramalho, 'Regulation and Growth' (2006) 92(3) Economic Letters 395–401.

[71] Michael E. Porter, 'Clusters and the New Economics of Competition.' (1998) 76(6) *Harvard Business Review* 77–90; David Doloreux, 'Regional Innovation Systems in the Periphery: The case of the Beauce in Québec Canada' (2003) 7(1) International Journal of Innovation Management 67–94.

c) Strategic factors and access to resources and capabilities

A further approach claims the importance of market and business strategy as factors to explain the growth of new ventures in high-tech sectors[72] and stresses how investors should give more attention to the company's business plan rather than to the characteristics of the team.[73]

Along the same line, other studies confirm that it is a valuable business idea that determines the growth and success of a start-up firm more than the skills of the human capital asset. The same view is also shared by the Stanford Project on Emerging Companies.[74]

II. Why Do Start-ups Matter and What is the Interplay with Innovation?

After having analysed the staged evolution of start-up companies and addressed the main factors that incentivise their growth, it is important to assess why it is relevant to focus on start-ups as new entrants rather than on established incumbents. Start-ups share a certain number of concerns with the category of SMEs,[75] in particular when it comes to cost constraints. However, there are specific peculiarities inherent to their organisational structure that distinguish start-ups from established SMEs, resulting in their more innovative connotation and which justify the focus on start-ups activity.

At first sight, one can rationally expect that incumbent firms are best positioned to foster innovation. This assumption can be justified not only considering that they can invest a great amount of internal resources in research and development, but also because their established position in the market can allow them to better know the peculiarities of the industry and detect the future needs of the customers. Yet, start-ups, which are apparently in a more disadvantaged market position, are more likely to produce radical and disruptive innovation. This Section will clarify the meaning of the different types of innovation as well as examine the reasons that can help to explain and justify this apparent paradox. Furthermore, it will examine whether, for the

[72] Matthias Almus and Eric A. Nerlinger. 'Growth of New Technology-Based Firms: Which Factors Matter?' (1999) 13(2) Small Business Economics 141-154; Haiyang Li, 'How Does New Venture Strategy Matter in the Environment Performance Relationship?' (2001) 12(2) Journal of High Technology Management Research 183–204; Shaker Zahra, and William C. Bogner, 'Technology Strategy and Software New Ventures' Performance: Exploring the Moderating Effect of the Competitive Environment' (2000) 15(2) Journal of Business Venturing 135–73.

[73] Steven N. Kaplan, Berk A. Sensoy and Per Stromberg, 'Should Investors Bet on the Jockey or the Horse? Evidence from the Evolution of Firms from Early Business Plans to Public Companies' (2009) 64(1) The Journal of Finance 75–115.

[74] James N. Baron and Michael T. Hannan, 'Organizational Blueprints for Success in High-Tech Start-ups: Lessons from the Stanford Project on Emerging Companies' (2002) 44(3) California Management Review 8–36; Christine M. Beckman and Diane Burton, 'Founding the Future: Path Dependence in the Evolution of top Management Teams from Founding to IPO' (2008) 19(1) Organization Science 3–24.

[75] Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises 2003/361/EC OJ L 124.

aims of the present dissertation, a focus on a particular industry sector would be necessary or rather inappropriate.

1. Start-ups and the different types of innovation activity: a more intense innovative performance

The broad spectrum of types of innovation developed in the literature has created a certain degree of ambiguity in the interpretation of the term.[76] Nor is there an agreed definition of which type of new venture could be referred to as innovative. In order to be referred to as a start-up, the business should be a new venture, including spin-offs that develop from an already existing firm.[77] In this regard the Oslo Manual of the OECD refers to innovation as 'a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).'[78] This broad definition allows to include different types of innovation as well as different levels of innovativeness. The need for a consistent set of definitions among the research community has led to identify in a uniform way the difference between 'radical innovation' and 'incremental innovation'.[79] The former has been defined as innovation that refers to a new technology and results in a new market infrastructure.[80] Radical innovations often create a demand that has not been recognised by the consumers yet. This new demand results in new firms, competitors and marketing activities.[81] The latter instead can be defined as an innovation that embodies a new feature or improvement to an existing technology

[76] Rosanna Garcia and Roger Calantone, 'A critical look at technological innovation typology and innovativeness terminology: a literature review' (2002) 19(2) Journal of Product Innovation Management 110-132. The authors demonstrate how researchers have used different labels for identifying innovations. This inconsistency has a negative impact on the consistency of the empirical research, since often the same innovation has been classified under different typologies.

[77] In particular, it can be noted that spin-offs from university and other research institutes are usually regarded as innovative. However, if this can be claimed for firms founded by the university, it cannot be fully assumed for start-ups founded by students. See Michael Fritsch, 'Start-ups in innovative industries: causes and effects' in David B. Audretsch, Oliver Falck, Stephan Heblich and Adam Lederer (eds.) *Handbook of Research on Innovation and Entrepreneurship* (Edward Elgar, 2011) 365, 368.

[78] OECD, OSLO MANUAL: Guidelines for collecting and interpreting innovation data, 60 (4th ed. 2018), available at https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm (accessed 20.05.2020). According to Schumpeter, innovation consists of novel goods, production methods, markets, production inputs and forms of organisation. See Joseph A. Schumpeter, *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle* (1934) 88-89.

[79] Michael Fritsch, 'Start-ups in innovative industries: causes and effects' in David B. Audretsch, Oliver Falck, Stephan Heblich and Adam Lederer (eds.) *Handbook of Research on Innovation and Entrepreneurship* (Edward Elgar, 2011) 365, 368.

[80] Gina Colarelli O'Connor, 'Market learning and radical innovation: a cross case comparison of eight radical innovation projects' (1998) 15(2) Journal of Product Innovation Management 151-66.

[81] Rosanna Garcia and Roger Calantone, 'A critical look at technological innovation typology and innovativeness terminology: a literature review' (2002) 19(2) Journal of Product Innovation Management 110, 123.

in an existing market. Incremental innovations, therefore, do not cause particular discontinuities, but are nevertheless important in a technologically mature market.[82]

Empirical evidence in the economic literature shows that incumbent firms spend more on R&D for incremental innovation.[83] Radical innovations are instead usually the domain of new firms.[84] The type of innovation developed by small new companies is therefore more likely to create new products and technologies on which other firms can build for further improvements.[85] Therefore, compared to the activity of established incumbents, the analysed economic literature and the related empirical findings demonstrate that new entrants bring about a more intensive innovative outcome.

Furthermore, while exploring the taxonomy of innovation activities, it is relevant to stress that the term radical innovation should not be confused with disruptive innovation. The term 'disruptive innovation' was coined by Christensen[86] and refers to innovations that totally disrupt an existing market through the creation of a new market segment. Disruption is a market phenomenon and it is not strictly related to technology per se. A radical innovation may or may not be disruptive. At the same time, an incremental innovation can be massively disruptive.

This does not allow to infer that radical innovations are more important than incremental ones, nor that innovations are not relevant if they are not disruptive. Nevertheless, given their definition, the radical and disruptive nature of the innovation suggests a higher degree of intensity. The circumstance that start-ups are more likely to produce radical innovations serves to reinforce the justification of the need to support the development of these market players.

In this regard, the economic findings can certainly play a role as additional evidence and support to the main theoretical reasons why overall established firms tend to have lower innovative

[82] Ibid.

[83] Rebecca Henderson, 'Underinvestment and incompetence as responses to radical innovation: evidence from the photolithographic industry' (1993) 24(2) Rand Journal of Economics 248–270.

[84] Cédric Schneider and Reinhilde Veugelers, 'On young highly innovative companies: why they matter and how (not) to policy support them' (2010) 19(14) Industrial and Corporate Change 969-1007. The study measures the innovative performance of young innovative companies (YIC) as defined in the European Commission State Aid Rules, using three factors. First, the percentage of sales generated by new or improved products and services (*SSnewimp*). Second, using the share of sales with products that are new to the firm (*SSnewF*). Third, measuring the share of sales generated by products new to the market (*SSnewM*). The third measure in particular represents the percentage of more 'radical' innovations. The results show that YICs have on average a higher innovation performance when compared to other innovation-active firms. This result counts for all the three types of measures but particularly for the measure of sales with market novelties (*SSnewM*), therefore confirming that YIC are most successful in the introduction of 'radical' innovations that are new to the market. Moreover, even when the age criterion is expanded from 6 to 15 years, thus increasing the number of analysed companies, the coefficient of innovative performance of all the three measures remains significantly higher than the one of other longer established innovators.

[85] Cédric Schneider and Reinhilde Veugelers, 'On young highly innovative companies: why they matter and how (not) to policy support them' (2010) 19(14) Industrial and Corporate Change 969, 970.

[86] Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail (Management of Innovation and Change)* (Harvard Business School Press, 1997) 187-200.

performance than new business entrants. These reasons ultimately rest on the structure of their organisation, which will therefore be explored hereinafter.

2. The Characteristics of Start-ups: Catalysts for Innovation

The inherent different organisational structure and the reasons that drive start-ups business decisions can help to explain the apparent paradox introduced above, namely, the generally lower innovative outcome of established firms.

The managerial literature[87] stresses that, in order to occur, innovation needs mobility of resources as well as the alignment of the incentives of all the actors involved.[88] Furthermore, businesses should integrate the ability to implement creative solutions with a disciplined organisational structure in order to successfully complete the innovation lifecycle. The overall problem is that well-structured companies often lack creative ability. Conversely, the young, most creative ones have difficulties in developing structured business plans.[89] Nevertheless, it is necessary to explore the peculiarities that distinguish the different types of businesses in order to understand the reasons that in general lead to different innovative performance.

a) The Established Organisation

The established firm is predominantly characterised by a well-developed organisational structure which allows a smooth commercialisation process. The technology that has been developed goes through testing until it is ready for the launch into the market.[90] However, within the established firm innovation usually occurs at the bottom of the company's hierarchy, in other words, at the employee level. And that is the moment in which the incentives to innovate of the parties who operate within the firm start to be misaligned. In particular, two main issues that lead to this misalignment have been identified, namely, the risk of misappropriation and the decision on how to allocate internal resources.[91]

First of all, the employee inventor faces indeed the danger that the established employer takes advantage of her innovation and consequently compromises the employee's intellectual

[87] John Freeman and Jerome S. Engel, 'Models of Innovation: Startups and Mature Corporations' (2007) 50(1) California Management Review 94-119. The authors claim that inherent structure of the company leads to the development of two different 'models of innovation', namely a 'corporate model' used by mature corporations and an 'entrepreneurship model', implemented by early-stage start-ups respectively. These models lead to different outputs in terms of innovative activity. The following analysis will draw from the description of the two different models. However, while analysing the characteristics inherent to the structure of the firm, it is here advisable to divide between types of organisation rather than 'models of innovation'.

[88] Ibid. 95.

[89] Ibid. 96.

[90] Ibid. 98.

[91] Ronald J. Gilson, 'Locating Innovation: The Endogeneity of Technology, Organisational Structure, and Financial Contracting' (2010) 110 Colum. L. Rev. 885, 896-897.

property.[92] This raises the interest of the employee in finding external funding and founding a new start-up to develop her invention, instead of remaining within the system of the incumbent.

The second issue refers to the company's system of compensation – in other words, the rewards that the employer provides to the innovative employee, either by way of equity participation or bonus or increased income. The need to compensate the employee's innovative activity confronts the employer with the question of whether the internal costs of developing the innovation outweigh the benefits provided by the innovation itself.[93] Among other costs, the employer has to face in particular the costs and efforts to identify and allocate the ownership and property rights of the invention when it is developed in teams.[94] At the same time the efficiency of other employees is reduced since they spend less time in already existing productive activities. This means that, on the one hand, the employee is incentivised to leave the invention to the employer, when a very high reward is on offer. Otherwise, she would rather found a start-up. On the other hand, the employer will need to find a balance in setting the intensity of the incentive. Indeed, the higher the reward, the larger are the costs on R&D, since many employees will be motivated for further research.[95] For the employer, the value of keeping that innovation has therefore to be higher than the R&D costs.[96]

The depicted situation shows the presence of a misalignment of incentives of the actors involved, which in turn leads to overall lower performance within the established organisation.[97]

Furthermore, in addition to the potential misalignment of incentives related to the fear of misappropriation as well as to the level of compensation, there are two other main peculiarities, inherent to the established organisation, which may play a role in determining the lower innovative activity performance of established firms.

First of all, according to Christensen's view,[98] one main reason rests on the inability to recognise the innovative potential of the technology. Established companies are indeed careful in meeting the existing needs of the customers, by reducing prices and increasing the quality of the products

[92] In this regard see also James J. Anton and Dennis A. Yao, 'Start-ups, Spin-offs, and Internal Projects' (1995) 11 Journal of Law, Economics & Organization 362, 370-71 in relation to the risk of misappropriation by corporate venture capital.

[93] Ronald J. Gilson, 'Locating Innovation: The Endogeneity of Technology, Organisational Structure, and Financial Contracting' (2010) 110 Colum. L. Rev. 885, 896 and 897.

[94] See Joseph Bankman and Ronald J. Gilson, 'Why Start-ups?' (1999) 51 Stan. L. Rev. 289, 301-303.

[95] Ronald J. Gilson, 'Locating Innovation: The Endogeneity of Technology, Organisational Structure, and Financial Contracting' (2010) 110 Colum. L. Rev. 885, 899.

[96] Ibid.

[97] John Freeman and Jerome S. Engel 'Models of Innovation: Startups and Mature Corporations' (2007) 50 (1) California Management Review 94, 101.

[98] Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail (Management of Innovation and Change)* (Harvard Business School Press 1997) 32.

and this may well diminish their ability to recognize new markets.[99] At the beginning, the market for a radical or disruptive innovation is so narrow that an informed entrepreneur will refrain to put substantial investment effort in it. Given that the established company ignores the disruptive technology, the innovation develops in secondary markets. However, once developed, the technology may be capable of displacing the established (and sometimes dominant) incumbent, which is not able to respond quickly to market changes.[100] In other words, the established incumbent rationally decides not to develop the disruptive invention, but wrongly lacks to recognise its inherent value.

Therefore, it is the great knowledge and attention to the existing product market, its customers and competitors that causes both the failure to recognise the value of the disruptive invention and the diminished probability to implement new radical innovation.

Secondly, the established incumbent's innovation activity is mainly driven by the motivation and need to pre-empt entry. However, its incentives to innovate are limited by the fear of 'cannibalisation' of existing profits and products.[101] The fear of Microsoft to diminish the revenues deriving from its existing products because of the further development of its early version of search-engine technology, which has been instead later on perfected by Google, provides a good example in this regard.

The structural dynamics that have been analysed allow to understand why, in a general perspective and regardless of the specificities of the sectors, within the structure of the incumbent firm it is more difficult to find intensive innovative activity. Different and opposite dynamics operate instead within the organisation of new market entrants.

b) The Start-up Organisation

The dynamics in which a start-up organisation operates suggest a favourable environment for the development of radical and disruptive innovation. The analysis hereafter will proceed against the backdrop of the mechanisms already examined in relation to the established organisation of incumbents.

First of all, it is important to stress that within the start-up framework, the inventor does not feel a strong risk of misappropriation within the structure in which she operates. This consequently

[99] Charles A. O' Reilly et al., 'Organizational Ambidexterity: IBM and Emerging Business Opportunities' (Stanford Graduate School of Business, Working Paper No. 2025, and Rock Center for Corporate Governance, Working Paper No. 53, 2009) 20.
[100] Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail (Management of Innovation and Change)"* (Harvard Business School Press 1997) 32.
[101] Richard Gilbert and David M.G. Newbery, 'Preemptive Patenting and the Persistence of Monopoly' (1982) 72(3) American Economic Review 514, 515.

encourages her innovative activity.[102] Indeed, in contrast to what may be likely to happen within an established organisation, it is difficult to think that venture capitalists (or any other investor), would misappropriate the invention described in the business plan. This is unlikely to happen, not only because they are not operating the business and therefore have less reasons of misappropriation in comparison to an established employer,[103] but also because, as a consequence of their behaviour, their reputation in the venture market would be negatively affected.[104]

Secondly, during its lifecycle, the start-up organisation operates through cooperation between entrepreneurs and investors, which is mainly based on reaching the success stage of the company.[105] Importantly, the agreement between the actors involved corresponds to an alignment of their incentives to support and produce innovation.[106]

Thirdly, when it comes to the ability of recognising the value of the invention, it is evident that, within the start-up organisation, the main risk in this regard relates to information asymmetries. Indeed, when the innovation is conceived, and the start-up is founded, all the business decisions for its development still remain to be made. Therefore, for a potential investor, it is difficult to detect the value of the innovation and the consequent growth potential of the company.[107] Nevertheless, the risks deriving from the information asymmetries can anyway be limited by the very intense monitoring from the investors' community as well as with a system of staged financing. In particular, when the start-up seeks its first round of investment, the structure of the company may change and develop rapidly. The members of the founding team tend to lose primary importance and – when it does not exist at the beginning - they are encouraged to build an established and competent management team whose actions and decisions can be concerted and monitored by the investor and by the capital market.[108] This assistance and monitoring activity gives to the start-up organisation a certain degree of organisation and discipline and helps to limit the information asymmetries.

[102] Ronald J. Gilson, 'Locating Innovation: The Endogeneity of Technology, Organisational Structure, and Financial Contracting' (2010) 110 Colum. L. Rev. 885, 897.
[103] Ibid.
[104] See, e.g., Ronald J. Gilson, 'Engineering a Venture Capital Market: Lessons from the American Experience' (2003) 55 Stan. L. Rev. 1067, 1092.
[105] For a more detailed analysis in this regard, see Section A. I. 2 d).
[106] An analysis of the incentives involved is provided in Section A. I. 2.
[107] These choices and evaluations are at the basis of and will result in financial contracts between the investor and the entrepreneur. For an analysis of financial contracts between venture capitalists and start-ups, see among others Paul Gompers and Josh Lerner, *The Venture Capital Cycle* (2nd ed. 2004); Steven N. Kaplan and Per Strömberg, 'Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts' (2003) 70 Rev. Econ. Stud. 281-315, where the authors analysed a data set of 213 venture capital investment contracts.
[108] John Freeman and Jerome S. Engel, 'Models of Innovation: Startups and Mature Corporations' (2007) 50(1) California Management Review 94, 104.

Furthermore, the investment is normally spread over several stages. The individual investment 'round' only provides the capital needed to achieve a determined goal as set in the business plan.[109] The investors participating in the first round may or may not invest in the subsequent ones.[110] Hence, these mechanisms provide the investor with the flexibility and power to decide whether the start-up, the project, and ultimately its innovation will proceed or not. Interestingly, the system of staged financing helps also to reduce information asymmetries. It has indeed been noted,[111] that this mechanism gives not only a strong incentive to the entrepreneur to improve her performance but also provides the investor with a tool to monitor it. This mechanism operates because a good entrepreneur with valuable innovation responds better than a less talented one to the incentive created by staged financing.[112] In other words, by monitoring the way in which the entrepreneur responds to staged financing, the investor can gain significant information on his hidden skills.

Lastly, when it comes to the above called 'fear of cannibalisation', start-ups are not concerned about displacing already existing product lines and therefore have a stronger incentive to implement new technologies that can overcome older ones.[113]

These dynamics not only facilitate innovation *per se* but also create a more favourable environment for radical and disruptive ones.

The abstract classification in two different types of 'organisations' has allowed to explore some of the main reasons why the start-up organisation overall constitutes a more suited environment for innovation. Nevertheless, it is necessary to acknowledge that, given the real market dynamics, the two types of organisation often interact with each other, with different implications for the innovation outcome. For example, in a great number of cases, large and established incumbents decide to invest in some young companies, either by paying part of the costs incurred by start-ups or by making equity investments. By doing so, the larger corporation acquires the new technology rather than implementing it autonomously and therefore obtains knowledge in areas of cutting-edge technology development.[114] Moreover, the established company can obtain the

[109] See Paul A. Gompers, 'Optimal Investment, Monitoring, and the Staging of Venture Capital' (1995) 50 Journal of Finance 1461, 1461-62.

[110] See William A. Sahlman, 'The Structure and Governance of Venture-Capital Organizations' (1990) 27 Journal of Financial Economics 473, 475 (reporting that venture capital funds invest one third of their capital in new investments and two-thirds in later round financing of companies already in that portfolio).

[111] Ronald J. Gilson, 'Locating Innovation: The Endogeneity of Technology, Organisational Structure, and Financial Contracting' (2010) 110 Colum. L. Rev. 885, 902.

[112] Ronald J. Gilson, 'Locating Innovation: The Endogeneity of Technology, Organisational Structure, and Financial Contracting' (2010) 110 Colum. L. Rev. 885, 902.

[113] Michael J. Meurer, 'Inventors, Entrepreneurs, and Intellectual Property Law' (2008) 45 Houston Law Review 1201, 1211.

[114] See Gary P. Pisano, 'The R&D Boundaries of the Firm: An Empirical Analysis' (1990) 35(1) Administrative Science Quarterly 153, 176. Despite the potential advantage of merging the structured organisation of the incumbent with the creative ability of the entrepreneur, it has been noted that the interaction at hand is characterised by certain discontinuities, which in turn affect the innovation process. Indeed, it appears difficult to share information between

invented technology via merger and acquisition. On the contrary, other established corporations instead prefer to separate the innovation process from the organisational structure and commercialisation activity, either by moving it to distant locations or by leaving its development within entities legally separated from the main corporation.[115]

The above analysis explains the intense innovative activity potential of start-ups. However, it does not aim to argue that innovation by start-ups is more important than innovation by incumbent's innovation *per se*. Moreover, in addition to the distinction between the innovation potential of start-up companies when compared to established ones, it is important to stress how the extent and type of innovation may considerably change depending on the sector taken into consideration. The next Section will therefore address these issues and question whether, for the aims of the present dissertation, a focus on a particular industry sector would be necessary or rather inappropriate.

3. Which Sector is more relevant? And is a Choice of Sector Justified?

When it comes to the relevance of specific sectors for innovation, the OSLO Manual proposes a classification to distinguish between the degrees of innovativeness based on the industry affiliation, namely, high, medium and low-technology industries. This classification, which can also include knowledge intensive service sector industries, poses however several issues. Indeed, one country could regard as innovative a product or service which in another country is not. Moreover, within each category there may be both innovative and non-innovative firms and the innovative quality may also be subject to changes over time.[116]

Moreover, in this regard, it is interesting to note that, when comparing the innovative outcomes of start-ups with those of established firms, economic studies find that, often in markets for services, start-ups have a higher innovative performance than established incumbents.[117] This may well be due to the different nature of innovation in service and in tangible product markets. Services are in fact intangible products and require less capital expenditure when compared to manufacturing.[118] Nevertheless, it must be stressed that the lack of resources and complementary assets does not always imply *per se* that start-ups are not active in a given sector.

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innovators and the managers of the company, and therefore decision processes are often not synchronised. See in this regard Richard K. Lester and Michael J. Piore, *Innovation: The Missing Dimension* (Harvard University Press, 2004) as cited in John Freeman and Jerome S. Engel 'Models of Innovation: Startups and Mature Corporations' (2007) 50(1) California Management Review 94, 112.

[115] See, for example, Palo Alto Research Center, founded in 1970 as a division of Xerox Corporation.

[116] John Freeman and Jerome S. Engel 'Models of Innovation: Startups and Mature Corporations' (2007) 50(1) California Management Review 94, 112.

[117] Giorgio Sirilli and Rinaldo Evangelista, 'Technological Innovation in services and manufacturing: results from Italian surveys' (1998) 27 Research Policy 881-889; Paola Criscuolo, Nicos Nicolaou and Ammon Salter, 'The elixir (or burden) of youth*?* Exploring differences in innovation between start-ups and established firms' (2012) 41 Research Policy 319-333.

[118] Ibid.

For example, there is a vibrant and active start-ups community in the biotech sector, which overcomes the costs and risks associated with new drug development engaging in cooperative arrangements such as joint ventures and mergers and acquisitions with large pharmaceutical companies.[119]

Similar considerations can apply to the most recent concerns for the start-ups' landscape, namely, the lack of complementary assets to develop AI-related inventions. Larger companies will indeed benefit from access to larger amounts of data and high computer power and speed in comparison to small firms, which will in turn improve the performance of their machine-learning algorithms.[120] Nevertheless, despite the difficulties, the AI start-ups environment is currently active and attracts the interest of external investors.[121] It is therefore reasonable to think that innovation will still be located also at the start-up level with the difference that the implementation of the technology is likely to occur more via 'cooperation' rather than via 'competition'.[122] In other words, particularly joint ventures and the market of mergers and acquisition may well demonstrate a strong development.[123]

This shows that the position where innovation is located may change with the development of different market dynamics, which are however difficult to predict *a priori*.[124] And it thus goes beyond the scope of the present analysis to detect the specific sector in which start-ups innovate more than established firms. Therefore, it does not appear appropriate to focus on one sector of industry only. Indeed, even if there were sectors in which innovation is more taking place within incumbent firms and others in which innovation is carried out more at start-up level,[125] it would

[119] Ronald J. Gilson, 'Locating Innovation: The Endogeneity of Technology, Organisational Structure, and Financial Contracting' (2010) 110 Colum. L. Rev. 885, 910.

[120] On average Google stores 10 EB of data (1EB = 109GB) while Facebook collects 500 TB (1TB = 1,000 GB) daily. See https://www.cirrusinsight.com/blog/much-data-google-store (accessed on 11 June 2018).

[121] See 'Artificial Intelligence Start-ups: the key to real returns in the Modern Economy?' (Equitizen, 9 November 2017) available at https://equityzen.com/blog/ai-sector-report (accessed on 11 June 2018) presenting Crunchbase data, according to which over 1,000 artificial intelligence start-ups are operating currently. The majority of start-ups focus on AI applied to specific industries and/or verticals (autos, fintech, healthcare).

[122] For a distinction of the two main categories of commercialisation strategies, see Section A. I. 2 c).

[123] According to Crunchbase data, M&A transactions in the sector have accelerated since 2012. See 'Artificial Intelligence Start-ups: the key to real returns in the Modern Economy?' (Equitizen, 9 November 2017) available at https://equityzen.com/blog/ai-sector-report (accessed on 11 June 2018).

[124] In this regard it is relevant to observe that between the 1940s and 1970s large companies used to dominate the innovation system based on economies of scale in R&D, production and distribution at large volumes. Conversely, the low start-ups and SMEs' R&D expenditure resulted in their lower contribution to innovation. However, in the last two decades the innovative potential of new and small firms has considerably increased. This shift could be explained taking into consideration the ability of new and small firms to exploit commercial opportunities that emerge from market changes as well as the lower cost of entry in the innovation process and the role of venture capital and of networks where knowledge and open innovation is shared. See in this regard OECD, *SMEs entrepreneurship and innovation* (Paris: OECD, 2010) 16.

[125] In the pharmaceutical sector, large incumbents rarely conduct early scientific research, which is instead left to biotech start-ups. See Jennifer Alsever, 'Big Pharma Innovation in Small Places' *Fortune* (13 May 2016) at http://fortune.com/2016/05/13/big-pharma-biotech-startups/ (accessed 12.06.2018).

be challenging to distinguish and calculate the degree of innovation activity on a sector per sector basis.

Therefore, the choice has to be informed by the purpose of the research, namely, to understand to what extent the implementation of the envisaged unitary patent system and the establishment of a unified patent court may encourage or affect the entrepreneurial activity of new innovative start-ups ventures.[126] Hence, to answer this question, it is necessary to explore how the developments in the patent system would influence both start-ups that do rely on patent protection and start-ups that do not patent. Indeed, on the one hand, it would not be sufficient to focus only on patenting start-ups. On the other hand, it is important to acknowledge that the regulatory framework of the patent system may produce some effect only on entities that develop technologies that potentially qualify for patent protection or infringe on patents of other parties. Thus, for the purposes of the research, it is relevant and appropriate to refer to start-ups which are active in high-technology sectors. High-tech industries indeed engage in intensive innovation activities and are important drivers of growth.[127] Within the ample category of high-tech, particular attention will be given to the biotech and ICT sector. This will be the case because they constitute the two main pillars of the high-tech category and since the majority of empirical studies have focused on these two main sectors.[128] Therefore, when discussing the implications that the establishment of a Unified Patent Court will have for innovation of start-ups, throughout the course of the dissertation, distinctions will be made between these two sectors.

4. Some Clarity on the Concept of Innovation

In light of the examined interplay between start-ups and innovation, for the purposes of the present analysis, the concept of innovation will be equated to the life and well-functioning of the start-up company and respective innovation activities. This assimilation derives from the above mentioned core definition of innovation as included in the OECD Oslo Manual, which refers to innovation as 'a new or improved product or process (or combination thereof) that differs

[126] The aim is not to suggest to start-up entities which is the appropriate strategy to adopt in light of the new system. The choice whether or not to apply for a patent as well as the decision relating to the type and scope of protection of the patent, depends indeed on the individual situation of the business involved. Thus, these choices may well differ between entities that operate within the same sector. Similar considerations apply to the choices relating to litigation strategies. Nevertheless, it is also true that the influence that the structure of a patent system may have on the innovation of the start-up varies depending on whether the entity has engaged in patenting or not. Therefore, in order to provide comprehensive results, the analysis needs to rest on a more general level, which nevertheless allows and requires to acknowledge the differences for the effects on innovation when appropriate.

[127] The term 'high-tech' is a rather fuzzy. It encompasses a wide range of sectors, which can vary depending on the specific approaches and perspectives of the studies taken into consideration. See in this regard Dagmar Vávrová, 'Approaches to the classification of high-tech companies from the negative and positive point of view' (2017) 20 Perspectives of Business and Entrepreneurship in the Digital Age 123, for a comprehensive literature review on the different definitions of high-tech company and high-tech product. Further research in this regard will help to propose a definition suited for the purposes of the present research.

[128] Cf. Section B, II.

significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)'.[129] Indeed, having demonstrated the high innovative potential of start-ups and the strong innovative character of their activities, it is possible to infer that any factor that would interfere with their activity would either undermine or foster innovation because it would either impede or facilitate the concrete implementation of the invention. Therefore, in the course of the dissertation, any selected and analysed factor which may influence the innovation activities is deemed to either hinder or spur innovation to the extent that it helps or constrains their implementation.

III. Conclusion

This Section demonstrated the relevant role that high-tech start-ups play for innovation exploring the differences between start-up new entrants and established incumbents with regard to their innovative performance, respectively. Moreover, it provided an overview of their lifecycle, providing a better understanding of the start-up landscape and with the aim to attempt to identify the motives of new ventures to engage in innovation.

In light of the main research question concerning the implications of the establishment of the Unified Patent Court on innovation of start-ups, it is necessary to understand and therefore it is legitimate to ask which role do patents, or more broadly, does the patent system play for the growth of start-ups, thereby fostering or hampering their innovative outcome. It may be difficult and challenging to find a direct correlation between patents and start-ups´ innovation. The following Section will therefore examine how the patent system does and potentially can influence the innovative activity of start-ups.

B. Start-ups and the Patent System

The present Section analyses to what extent the patent system can have an influence on the activities of start-ups and of their innovative potential. First, it introduces the utilitarian theories that are relied upon to justify patent protection, thus questioning the functioning of the incentive theory in the particular case of start-ups. Secondly, it provides a descriptive illustration of empirical data in relation to the extent at which start-ups file and acquire patents as well as of the possible alternative means of protection that they may consider. Thirdly, it explores the reasons why start-ups patent and the different ways in which they can use the patent system as well as in which way this system affects their interests. The aim is to provide an overview of the relation between the

[129] OECD, Oslo Manual: Guidelines for collecting and interpreting innovation data, 60 (4th ed. 2018), available at https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm (accessed on 20 May 2020).

start-ups' environment and the patent system, in order to understand which aspects could be the most problematic for their innovation.

I. Patents as an Incentive to Innovate – The Utilitarian Theories Behind Patent Protection

To analyse the implications of the patent system for the innovation of start-ups, it is important to recall the different theories that are relied upon as a justification for patent protection in general. Indeed, it is questionable whether these theories also work for start-up inventors. The following analysis will take into consideration the utilitarian theories, thus addressing the incentive theory as well as the disclosure and prospect theory. For the purposes of the present research, the concept of innovation is equated to the implementation of the inventions deriving from the innovative activities of the start-ups. Therefore, among the theories that provide a 'rationale' for patent protection, the utilitarian theories and specifically the incentive theory deserve particular attention.[130]

1. The Incentive Theory and Disclosure Theory

The most acknowledged but also debated justification of patent protection refers to the incentive theory.[131] The utilitarian purpose of the patent system is to provide incentives to innovate by granting the inventor an exclusive right that allows the patent holder to exclude others from practicing her invention for a limited period of time, thus providing the inventor with the chance to recoup her investment.[132] This helps to overcome the so-called public goods problem, which highlights the absence of any incentive to invest in inventive activity in a situation in which the cost of copying is less than the cost of inventing.[133] However, in order to limit the loss

[130] Non-utilitarian theories instead include the labour theory and the personality theory. The former serves as a justification of proprietary rights in general and is based on the theory of natural law as advocated by John Locke, according to whom everyone has a natural right in the results of her labour. The latter instead builds on Hegel's personality theory, thus claiming that private property is a necessary means to realise the individual personality. For a thorough analysis of the origins of these theories and their counterarguments see, among others, Talya Ponchek, 'Does the Patent System Promote Scientific Innovation – Empirical Analysis of Patent Forward Citations' (2015) 25 Alb. L.J. Sci. & Tech. 289, 312-315; Ofer Tur-Sinai, 'Beyond Incentives: Expanding the Theoretical Framework for Patent Law Analysis' (2012) 45 Akron L. Rev. 249, 257; Margaret J. Radin, 'Property and Personhood' (1982) 34 Stan. L. Rev. 957, 958-59.

[131] See in this regard Dan L. Burk and Mark A. Lemley, 'Policy Levers in Patent Law' (2003) 89 Va. L. Rev. 1575, 1580.

[132] See among others Peter Lee, 'Social Innovation' (2015) 92 Wash. U. L. Rev. 1, 25.

[133] David S. Olson, 'Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter' (2009) 82 Temple L. Rev. 192.

(deadweight loss) of the patent exclusivity to society,[134] the system grants the exclusive right to the patentee only in exchange of inventions that meet the requirements for patentability and upon the disclosure of the invention to the public. The system thus encourages the disclosure of inventions that would otherwise remain secret, so that the person with ordinary skill in the art can implement it.[135]

2. Prospect Theory

However, it is to be noted that some authors widely criticize the assumption that the purpose of patent law is to promote further innovation and disclosure. They state that the justification of patents is rather to facilitate the commercialisation of new products and that patents provide incentives for investment for activities aimed at developing the commercialisation process.[136] This view opens the debate to the analysis of another utilitarian theory, namely, the prospect theory.

As developed by Kitch, this theory provides a different utilitarian justification for the patent system.[137] Although it has never obtained wide agreement among scholars,[138] according to the prospect theory, patent rights are important because they enable the patentee to efficiently control the future prospects of the invention.[139] Thus, the theory concerns the efficient coordination and exploitation of proprietary rights that have been granted,[140] and the protection of investment in the commercialisation of the invention after grant, which in turn allows to overcome the 'tragedy of the commons' problem.[141]

In particular, from the rationale of the incentive theory it follows that patent protection should only be granted to subject-matter where innovation activity would not occur without a patent grant. This means that for each type of potentially patentable subject-matter, it should be questioned whether there is a market failure such that the grant of a patent would result in a net

[134] Julie E. Cohen and Mark A. Lemley, 'Patent Scope and Innovation in the Software Industry' (2001) 89 Cal. L. Rev. 1, 50.
[135] In relation to the 'incentive to disclose theory', see Rebecca S. Eisenberg, 'Patents and the Progress of Science: Exclusive Rights and Experimental Use' (1989) 56 U. Chi. L. Rev. 1029, 1030. But cf. Mark A. Lemley, 'The Myth of the Sole Inventor' (2012) 110 Mich. L. Rev. 709, 745-46 (stating how the contract between the inventor and society is currently often violated because of the vague and broad wording of patent claims and description).
[136] F. Scott Kieff, 'Property Rights and Property Rules for Commercializing Inventions' (2001) 85 Minn. L. Rev. 697, 753.
[137] Edmund W. Kitch, 'The Nature and Function of the Patent System' (1977) 20 J. L. & Econ. 265, 266.
[138] For critics see also Ofer Tur-Sinai, 'Beyond Incentives: Expanding the Theoretical Framework for Patent Law Analysis' (2012) 45 Akron L. Rev. 243, 249 - 250.
[139] Mark A. Lemley, 'Ex Ante Versus Ex Post Justifications for Intellectual Property' (2004) 71 U. Chi. L. Rev. 129, 133.
[140] Ibid.
[141] The tragedy of the commons describes a situation in which an increase in demand in the absence of property rights leads to over-consumption, and the tragedy lies in creating a worse situation for all individuals.

loss for society.[142] However, if it is important to distinguish and develop sector-specific considerations depending on the subject-matter involved; then it could be legitimate to question whether differentiations occur also on the basis of the type of business. Thus, do patents work as an incentive for everyone? Or does the incentive theory apply only under certain circumstances? In particular, it is questionable whether the incentive theory works also for start-ups and whether start-ups need the incentives of the patent system or if they would innovate anyways.

In order to understand how and to what extent the patent system can influence the activity of start-ups and whether patents represent an incentive to innovate also for start-ups, it is preliminarily necessary to explore to what extent start-ups objectively use the patent system as well as what their subjective perceptions of the patent system are.

II. The State of the Art: To What Extent Do Start-ups Patent, Where and When - An Empirical Analysis

This following Sub-Section attempts to provide a current picture of the patenting strategies of start-ups and their behaviour in relation to IP management. The aim is to set forth an empirical analysis by reporting the quantitative data available on to what extent, where and at what point in time start-ups seek patent protection. A literature review reveals that only very few studies have been carried out on the topic.[143] Furthermore, the ones with a specific focus on start-ups are very recent. This shows not only the difficulties of developing a quantitative empirical analysis on the start-ups' environment, but also that the subject is only about to gain more attention and relevance. Yet the findings of two main studies that will be presented hereinafter are particularly

[142] See in this regard David S. Olson, 'Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter' (2009) 82 Temple L. Rev. 181, 184, analysing the justifications behind granting patents for business methods inventions. The issue is currently highly relevant in consideration of the problems related to artificial intelligence (AI) inventions.

[143] See EUIPO, 'Intellectual Property Rights and Firm Performance in Europe: an Economic Analysis' (2015), Table 8, p. 40 available at https://euipo.europa.eu/ohimportal/documents/11370/80606/Intellectual+property+rights+and+firm+performance+in+Europe (accessed on 20 September 2019) and Eurostat, 'Patent Statistics at Eurostat: Mapping the Contribution of SMEs in EU Patenting, Publications Office of the European Union' (2014) available at https://ec.europa.eu/eurostat/documents/3859598/6064260/KS-GQ-14-009-EN-N.pdf/2990a151-5542-4039-b563-1758f12bcde0?t=1543313594000 (accessed on 20 September 2019), both analysing statistical data on SMEs patenting. Moreover, see also Dimitri Xenos, 'The Impact of the European Patent System on SMEs and National States and the Advent of Unitary Patent' (2020) 36 Prometheus – Critical Studies In Innovation 51-68. Also focusing on SMEs patenting activity, the study analyses a sample of 400 European patents first granted in 2014, randomly extracted from a dataset of 64,585 patents, recorded during the year 2014 and publicly available in the European Patent Bulletin and shows that 81.7% of all European patents are granted to large companies, whereas 17.3% are granted to SMEs and that 10.3% of all European patents are granted to EU-based SMEs, and 7% to non-EU-based SMEs.

relevant for the present research. An OECD study of 2018[144] provides comprehensive findings on the relations among all the possible determinants of the success of start-ups. It analyses start-ups' financing, the characteristics of the people who created the business as well as its intellectual assets in a wide set of countries and sectors. However, for the purposes of the present research, only the findings in relation to the IP portfolio will be presented.

The study finds that out of the 447,000 start-ups almost 50,000 hold one or more patents, leading to a total of almost 12 million patents and that around 220,000 of those have been applied for by companies after 2005.[145] The start-ups active in the manufacturing sector, which are only a small number of the start-ups included in the entire database, are the ones who patent most intensively, followed by the software and computer hardware sector.

Moreover, the OECD report shows that a great part of start-ups file for patents in the first six years of life.[146] In some cases patents are filed even before the start-up is formally registered, although this case is quite rare. This might reveal that patents are the result of the first years of activity of a start-up and do not solely refer to the main idea that drove the creation of the company.[147] In the majority of cases, filing activity decreases consistently afterwards.

By turning the focus upon how the businesses use the European Patent System (EPS), a recent study carried out by von Graevenitz et al.[148] provides an empirical description, without however exploring the subjective reasons behind the choices of the start-ups under analysis.

In the current patent system, companies have to decide whether they prefer to file a patent before the national patent offices (NPOs) or a European Patent before the EPO. Against this backdrop, the study analyses – among other issues – whether all types of companies have

[144] Stefano Breschi, Julie Lassébie and Carlo Menon, 'A portrait of innovative start-ups across countries' (OECD Science, Technology and Industry Working Papers, 2018/02, OECD Publishing) 11.

[145] The study matches the information contained in the 'EPO worldwide PATent STATistical Database' (PATSTAT) with the entirety of Crunchbase and not only a subsample of the two. PATSTAT is a database developed by the European Patent Office (EPO) in cooperation with WIPO, OECD and Eurostat that covers 100 million patents granted by 90 patent offices. Crunchbase is a new dataset on innovative start-ups that is unprecedented in terms of scope and comprehensiveness. For more information see https://www.crunchbase.com (accessed 31 October 2018). In Ginaluca Tarasconi and Carlo Menon, 'Matching Crunchbase with patent data' (OECD Science, Technology and Industry Working Papers, 2017/07, OECD Publishing), the authors provide a description of the procedure to use in order to match the two databases. For a detailed description of the methodology used in the study at hand and its limitations see Stefano Breschi, Julie Lassébie and Carlo Menon, 'A portrait of innovative start-ups across countries' (OECD Science, Technology and Industry Working Papers, 2018/02, OECD Publishing) 14. When reading this data, it is however important to bear in mind that, although the Crunchbase database gathers data on start-ups at a worldwide level, it has a particular focus on the US. Moreover, Crunchbase comprises also companies such as Microsoft that, even if they had been innovative start-ups with no or few patents at the time of their establishment, they would now to be considered as established companies with very large patent portfolios.

[146] The statistics take into account the founding year of the company and the patent priority date. See Stefano Breschi, Julie Lassébie and Carlo Menon, 'A portrait of innovative start-ups across countries' (OECD Science, Technology and Industry Working Papers, 2018/02, OECD Publishing) 14.

[147] Ibid., 16

[148] Georg von Graevenitz and Antanina Garanasvili, 'The European Patent System: a descriptive Analysis' (CGR Working Paper 2018) 9.

increasingly used the EPO in the last decade, considering the country of origin, the field of activity and the dimensions of the company in order to differentiate the types of businesses.

The study finds that the smallest companies that seek patent protection in the EPO states tend to file before NPOs. Conversely, companies which hold more than two patents or have large patent portfolios seek more often patent protection directly before the EPO. The data show that the percentage of companies holding only one patent is 63.4% for the EPO while it is 69.5% at the NPOs, and if the analysis is restricted to European companies only, the numbers change, namely, to 71.1% for the NPOs and 63.8% for the EPO.

However, it is important to take into account that the size of the company has been assessed by analysing the size of the patent portfolios, rather than looking at company assets, date of registration or number of employees. This choice is due to the difficulty of finding information on publicly available company registers.[149]

For the purposes of the present analysis, it is therefore important to bear in mind that not all companies with only one patent in their portfolio are start-ups and that in general the small size is not always an indication of a start-up business. However, other economic studies have demonstrated that only a very small proportion of start-ups grow at fast pace and that only 3% of micro-start-ups created with less than 10 employees have increased the number of employees five years later.[150] This means that it is unlikely that a start-up has a big patent portfolio. Thus, it appears reasonable to infer that the cited findings are a reliable indicator of the potential patenting strategies of start-ups.

Furthermore, without distinguishing among the different types of businesses, the study shows that the jurisdictions that companies in general consider for validation after obtaining an EPO patent are Germany, France and the UK. This coincides with the choices made by companies that rely just on NPOs. The number of countries in which EPO patents are validated varies depending on the sector. In particular, in chemistry the number of countries of validation is higher than in mechanical engineering.[151]

The findings of the reported studies therefore suggest that there is a certain number of start-ups that file patents and that in the European environment these businesses currently tend to opt

[149] Ibid., 7.

[150] See in this regard the findings of Chiara Criscuolo, Peter N. Gal and Carlo Menon, 'The Dynamics of Employment Growth: New Evidence from 18 Countries' (OECD Science, Technology and Industry Policy Papers, no. 14; OECD Publishing, 2014) and Poh Kam Wong, Yuen Ping Ho, and Erkko Autio, 'Entrepreneurship, Innovation and Economic Growth: Evidence from GEM data' (2005) 24(3) Small Business Economics 335-350; Stefano Breschi, Julie Lassébie and Carlo Menon, 'A portrait of innovative start-ups across countries' (OECD Science, Technology and Industry Working Papers, 2018/02, OECD Publishing) 9.

[151] In the mechanical engineering sector patents are validated in four or a maximum of five countries and the core countries of validation remain Germany, France and the UK. See Georg von Graevenitz and Antanina Garanasvili, 'The European Patent System: a descriptive Analysis' (CGR Working Paper 2018) 13.

for national filings. However, there is also a great number of start-ups that prefer to use other forms of appropriation, namely, secrecy and lead-time advantage.

A study on the IP protection strategies in Europe has analysed data from the 1993 Community Innovation Survey and shows that for product innovations lead-time advantage and secrecy represent the most important IP strategy, respectively for 54% and 16,9% of (all-size) respondents, while patents rank instead second last among the indicated methods (lead-time advantages, secrecy, complexity of innovation, patents and design registration).[152] In order to understand what encourages start-ups to pursue these alternative methods of protection, it is relevant to explore their respective advantages and disadvantages.

III. Alternatives to Patent Protection – Brief Considerations on IP Management

1. Trade Secrets Protection

Trade secrets protect *inter alia* the know-how, which drives the innovation process and can be a very important intangible asset in the portfolio of a company, even more valuable than patents.[153] The extent to which legal protection is granted used to vary among jurisdictions. However, the EU has turned to complete harmonisation under the Trade Secrets Directive (EU) 2016/943, in particular as regards the requirements for the subject-matter of protection: a trade secret is unknown or not readily accessible to a relevant part of the public; it has a commercial value and there has to be an effort to keep it secret.[154]

The justifications of trade secrets law have long been the object of debate among courts and scholars and from a theoretical point of view it is controversial whether trade secrets law finds its roots in contract, property, tort or criminal law.[155] Two main theories have however explained

[152] Anthony Arundel, 'The relative effectiveness of patents and secrecy for appropriation' (2001) 30 Research Policy 611-615.

[153] Brownie Hall, Christian Helmers, Mark Rogers and Vania Sena, 'The Choice Between Formal and Informal Intellectual Property: A Review' (2014) 52(2) J. Econ. Lit. 375-423.

[154] Art. 2(1) Directive (EU) 2016/943 of the European Parliament and of the Council of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure, [2016] OJ L 157/9. For comments and on the Directive proposal and its transposition see, among others, Jean Lapousterle, Christophe Geiger, Norbert Olszak, and Luc Desaunettes-Barbero, 'What Protection for Trade Secrets in the European Union? CEIPI's Observations on the Proposal for a Directive on the Protection of Undisclosed Know-How and Business Information' (2016) 38(5) European Intellectual Property Review 255; Reto M. Hilty, Roland Knaak, Annette Kur, Luc Desaunettes, 'Stellungnahme zum Referentenentwurf eines Gesetzes zur Umsetzung der Richtlinie (EU) 2016/943 zum Schutz von Geschäftsgeheimnissen vor rechtswidrigem Erwerb sowie rechtswidriger Nutzung und Offenlegung vom 17. April 2018' (18 May 2018) available at https://www.ip.mpg.de/fileadmin/ipmpg/content/stellungnahmen/Stellungnahme_zum_Referentenentwurf_eines_Gesetzes_zur_Umsetzung_der_Richtlinie_EU_2016_943.pdf (accessed on 15 May 2020).

[155] For a more in-depth discussion of trade secrets law and theory see for example William B. Barton, 'A Study in the Law of Trade Secrets' (1939) 13 U. Cinc. L. Rev. 507, 558; Vincent Chiappetta, 'Myth, Chameleon, or Intellectual

the *rationale* behind trade secrets protection. The first is a utilitarian one and sees trade secrets as a form of property, arguing that the protection of the proprietary information fosters further investment. The second is instead more adjacent to unfair competition law highlighting that the purpose of trade secret law is to punish unfair conducts.[156]

Despite the difficulties of framing this phenomenon from a doctrinal point of view, it is possible to individuate some of the advantages and disadvantages of trade secrets over patent protection that start-ups may well consider in their IP management strategies. These are at the basis of the reasons why a start-up may prefer one type of protection over the other. They are therefore briefly addressed hereinafter.

a) Advantages

A start-up business may favour trade secret protection since it allows to overcome two of the main difficulties that start-ups often face, namely, financial and time constraints. Indeed, since trade secrets protection does not require any registration and approval, it is cheaper and quicker to obtain.[157] Furthermore, the protection covers types of information that in several cases would not comply with the requirements of patent protection.

b) Disadvantages

However, despite these agreed advantages, which can help start-ups make use of their know-how for their own production, problems arise when they would use the know-how as source of income or as an asset. In particular, it has to be stressed that the licensing of secret knowledge and secret information raises several difficulties. Especially start-ups operating in an open innovation environment have to take these difficulties into account. One problem relates to potential misconduct of the licensee, leading to underpayment of royalties and risk of misappropriation. Another problem arises from the fact that the absence of strong property rights may diminish the bargaining power in the hands of the licensor.[158]

First of all, it has been argued[159] that underpayment can derive from the fact that the exchange of secret knowledge requires a direct contact with the licensee's technical staff. Such investment in terms of costs and time is difficult to calculate *ex ante*. Thus, it often results in an inefficient

Property Olympian? A Normative Framework Supporting Trade Secret Law' (1999) 8 Geo. Mason L. *Rev.* 69; David D. Friedman et al., 'Some Economics of Trade Secret Law' (1991) 5 J. Econ. Persp. 61; Charles Tait Graves, 'Trade Secrets as Property: Theory and Consequences' (2007) 15 J. Intell. Prop. L. 39; Michael Risch, 'Why Do We Have Trade Secrets?' (2007) 11 Marq. Intell. Prop. L. Rev. 1; Mark A. Lemley, 'The Surprising Virtues of Treating Trade Secrets as IP Rights' (2008) 61 Stan. L. Rev. 311, 329 where the author suggests that trade secrets can be justified as a form of intellectual property rather than as a form of traditional property.

[156] For a more extensive explanation of all the different theories see Mark A. Lemley, 'The Surprising Virtues of Treating Trade Secrets as IP Rights' (2008) 61 Stan. L. Rev. 311, 319-329.

[157] Ibid., 312.

[158] These primary risks have been reported in John Dubiansky, 'The Role of Patents in Fostering Open Innovation' (2006) 11 Va. J. L. & Tech.1, 21.

[159] James J. Anton and Dennis A. Yao, 'The Sale of Ideas: Strategic Disclosure, Property Rights, and Contracting' (2002) 69 Rev. Econ. Stud. 513. See also Joshua S. Gans and Scott Stern, 'The Product Market and the Market for Ideas: Commercialization Strategies for Technology Entrepreneurs"' (2003) 32 Research Policy 333, 337.

allocation of royalties.[160] Then, the difficulty of measuring the value of secret knowledge is another possible cause of underpayment. Furthermore, the licensor has to deal with a high risk of misappropriation of her trade secrets. It is indeed very complex for the licensor to monitor the conduct of the licensee.[161]

Secondly, it has been stressed that, in this scenario, the licensee benefits form a greater bargaining power.[162] Moreover, the licensor may have to bear the risks and consequences deriving from the competition with other technologies held by other providers, protected either by IP rights or as trade secrets. In addition, if the licensee owns the complementary assets needed for production and commercialisation, her negotiating power is even higher.[163] Under these circumstances, the licensor could benefit from seeking patent protection, instead of simply relying on trade secrets protection, to strengthen her bargaining power vis-à-vis the licensee.[164]

3. First Mover Advantage

As an alternative to trade secret protection, a start-up may also consider to adopt a defensive strategy to gain advantage over its competitors by becoming the first mover in the market. The strategy consists in being able to bring into the market the new product and exploit the technology most effectively until competitors ultimately manage to copy it. The strategy is particularly suited for high-innovative companies where the ability to copy is not wide-spread and copying requires considerable time.[165]

IV. Reasons for Patenting and Not Patenting – Subjective Perceptions

Despite the existence of alternative measures of protection, it is relevant to explore the reasons behind the decision of start-ups to patent or not. The analysis is particularly important for the present research, since it allows for better understanding not only how start-ups interact with the patent system, but it also helps to individuate the most relevant factors which need to be taken into consideration in order to assess the influence of a new unitary system of patent protection on their innovation.

The reasons why start-ups pursue patent protection or not have been explored in the 2008 Berkeley Patent Survey, which represents the most comprehensive evidence on start-up

[160] Ibid.
[161] John Dubiansky, 'The Role of Patents in Fostering Open Innovation' (2006) 11 Va. J. L. & Tech. 1, 21.
[162] Joshua S. Gans and Scott Stern, 'The Product Market and the Market for Ideas: Commercialization Strategies for Technology Entrepreneurs"' (2003) 32 Research Policy 333, 338.
[163] Ibid.
[164] John Dubiansky, 'The Role of Patents in Fostering Open Innovation' (2006) 11 Va. J. L. & Tech. 1, 23.
[165] For more details in relation to this strategy, see Ignacio De Leon, Jose Fernandez Donoso, *Innovation, Startups and Intellectual Property Management. Strategies and evidence from Latin America and other regions* (Springer 2017) 37-38.

patenting, gathering information in relation to 1,332 high-tech start-ups younger than 10 years.[166]

The analysis sheds some light on the subjective perception of the market players, showing that start-ups patent mainly to prevent others from copying, to secure investment, to improve the negotiating position, to prevent infringement actions and obtain licensing revenues. Conversely, start-ups avoid patenting because of costs considerations, reluctance to disclose information and because of the fact that the technology seems not patentable.

Overall, the results show relevant differences in the patenting behaviour across industries. Indeed, patenting in biotech is a very important part of start-ups strategy, while companies in the IT-software industry are more sceptical about using the patent system. This Sub-section analyses the individuated reasons in order to gain a deeper understanding on how the patent system can influence the activity of start-ups.

1. Why start-ups do patent

a) The traditional use of patents as an exclusionary right and the use as bargaining tool

The most important reason for start-ups to patent is to prevent others from copying their products and services.[167] The result is interesting when compared to prior literature, which highlighted that start-ups did not use patents to prevent copying and competition because of the high costs of patenting and of enforcing patents.[168] However, it is important to stress that in any case, when compared to larger firms, small firms make little use of patents as a strategic tool to block competitors. Similarly, only rarely they use it to create a position of advantage in potential negotiations with other competitors.[169]

b) Improve chances of securing investment/IPO – The use of patents as a signal of quality and value

The second most important motive for seeking patent protection is that patents provide better opportunities to secure investment and improve the chances of start-ups to find external financing.[170] The underlying *rationale* of why patents can be valuable to secure investment and

[166] Stuart J.H. Graham., Robert P. Merges, Pamela Samuelson and Ted M. Sichelman, 'High technology entrepreneurs and the patent system: results of the 2008 Berkley patent survey' (2010) 24 Berkley Technology L.J. 1255-327.
[167] Ibid., 1297.
[168] Ronald J. Mann, 'Do Patents Facilitate Financing in the Software Industry' (2005) 83 Tex. L. Rev. 961, 981.
[169] Alan Hughes and Andrea Mina, 'The impact of the patent system on SMEs' (Centre for Business Research, Working Paper No. 411, September 2010) 24.
[170] Stuart J.H. Graham., Robert P. Merges, Pamela Samuelson and Ted M. Sichelman, 'High technology entrepreneurs and the patent system: results of the 2008 Berkley patent survey' (2010) 24 Berkley Technology L.J. 1255, 1303.

financing is that they can be seen as an indicator of the start-up's quality, innovative potential and, hence, of its capability to maintain high profits.

However, in this regard it needs to be acknowledged that the signalling function of patents, which is arguably particularly important for start-ups, is a highly debated concept in the economic literature. To gain a more comprehensive understanding on the potential signalling function of patents, the major findings are presented hereinafter. The issue is particularly relevant from a management perspective since the possible value of the patent could serve as a criterion to inform the decision on which type of patent to apply for.

Baum and Silverman[171] analysed 204 Canadian start-ups in the high-tech sector and found that patents, but also alliances and the experience of the team, are related positively with the received amount of venture capital (VC) financing. Along similar lines, Engel and Keilbach,[172] who base their conclusions on a set of 21,517 German start-ups, interpret patents and the education of team members as signals for funding. They find that at pre-funding stage, VC-funded firms hold more patent applications than non-VC-funded firms. Furthermore, in the US context Mann and Sager[173] without entering into a specific analysis of the signalling effects, find a positive correlation between the amount of investment, number of financing rounds and patenting activity. Other studies,[174] analysing different datasets, confirm the existence of a positive correlation between the number of patent applications and granted patents and the amount of VC funding. In many cases, the results are interpreted as the outcome of the informational role of patents, which allows for reducing uncertainty for investors. Interestingly, Greenberg finds that for young start-ups and in early stages of financing, granted patents have greater effect than mere patent applications. Conversely, Hoenen et al. find that only patent filings, and not granted patents, have a positive effect on the first round of VC financing. Yet, they identify no effects neither of patent applications nor of patent grants on the second-round of investment.[175]

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[171] Joal A.C. Baum and Brian S. Silverman, 'Picking Winners or Building Them? Alliance, Intellectual, and Human Capital as Selection Criteria in Venture Financing and Performance of Biotechnology Startups' (2004) 19(3) Journal of Business Venturing 411-436.

[172] Dirk Engel and Max Keilbach, 'Firm level implications of early stage venture capital investment – An empirical investigation' (2007) 14(2) *Journal of Empirical Finance* 150-167.

[173] Ronald J. Mann and Thomas W. Sager, 'Patents, Venture Capital, and Software Start-ups' (2007) 36 Research Policy 193, 197.

[174] Carolin Haeussler, Dietmar Harhoff and Elisabeth Mueller, 'To Be Financed or Not – The Role of Patents for Venture Capital Financing' (ZEW Discussion Paper No. 09-003, 2009) (analysing 190 firms in the UK and Germany in the biotech sector); Annamaria Conti, Mary C. Thursby and Frank T. Rothaermel, 'Show Me the Right Stuff: Signals for High Tech Start-ups' (2013) 20 Journal of Economics and Management Strategy 341-364 (analysing 117 start-ups in the US, finding that venture capitalists value patents more than founder, friends and family (FFF) money. The contrary applies in relation to business angels financing).

[175] Gili Greenberg, 'Small Firms, Big Patents? Estimating Patent Value Using Data on Israeli Start-ups' Financing Rounds' (2013) 10(4) European Management Review 183-196 (analysing 188 start-ups in Israel); Sebastian Hoenen, Christos Kolympiris, Wilfried Schoenmakers and Nickolas Kalaitzandonakes, 'The diminishing signalling value of patents between early rounds of venture capital financing' (2014) 43 Research Policy 956-989 (analysing 580 biotech firms in US).

Moreover, Hsu and Ziedonis[176] interpret patents as quality signals and find a positive correlation not only between patents and VC financing, but also with the pricing and valuation of an IPO. Further concentrating on the improvement of exit opportunities, Lerman[177] confirms the finding of the previous literature when it comes to the positive correlation of patents with investment but highlights how this considerably varies between industries as well as during the different stages of a start-up's life. In this regard, the study shows the importance of early patenting during the first three rounds of funding. Moreover, it demonstrates how the chances of being acquired increase for the start-ups that hold patents. Similarly, Ménière et al. show the positive correlation of patents with start-ups success, interpreted as the occurrence of a merger, IPO, acquisition or leveraged buy-out (LBO), and Gaugé finds a positive effect of patents on IPO and acquisition at higher prices for life science firms but not in the IT sector.[178]

From an interesting and slightly different perspective, Hoenig and Henkel[179] agree that VC investors recognize patents, alliances and team experience as criteria of selection. However, they highlight the difficulties to identify the signalling effect of these resources and to separate it from their function as productive assets.[180] Referring to patents in particular, they do not find any indication that they work as signals of technology quality. Nevertheless, the authors recognize that patents positively influence VC decisions in their function as property rights.

In light of the available empirical evidence, it is possible to argue that there is certainly a correlation between patenting and start-ups growth and that reasonably one affects the other. However, it is not yet clear how the causality between them operates, especially in relation to the effects on investment. In other words, it is questionable whether it is the patent title that spurs further funding or whether it is the increased amount of investment that encourages further patenting.

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[176] David H. Hsu and Rosemarie Ham Ziedonis, 'Patents As Quality Signals For Entrepreneurial Ventures' (2008) Academy of Management Annual Meeting Proceedings 1-6.

[177] Celia Lerman, 'Patent Strategies of Technology Startups: An Empirical Study' (2015) available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2610433 (accessed on 22 November 2018).

[178] Yann Ménière, Yann Dietrich, Justus Baron, Tim Pohlmann and Long Nguyen-Dinh, 'Patent positions and start-up success' Intellectual Asset Management (March-April 2015) 27-34 (considering 829 European SMEs and start-ups in which France Brevets has invested in between 2002 and 2012); Patrick Gaulé, 'Patents and the Success of Venture Capital Backed Start-Ups: Using Examiner Assignment to Estimate Causal Effects' (Center for Economic Research and Graduate Education – Economics Institute, Working Paper Series, 2015) 546 (using a sample of 2,191 U.S. start-ups applying for patent protection in the 24 months following their first round of venture capital funding).

[179] Daniel Hoenig and Joachim Henkel, 'Quality signals? The role of patents, alliances and team experience in Venture Capital Financing' (2015) 44 Research Policy 1049-1064.

[180] Among the above-mentioned literature only David H. Hsu and Rosemarie Ham Ziedonis, 'Patents As Quality Signals For Entrepreneurial Ventures' (2008) Academy of Management Annual Meeting Proceedings 1-6., and Sebastian Hoenen, Christos Kolympiris, Wilfried Schoenmakers and Nickolas Kalaitzandonakes, 'The diminishing signalling value of patents between early rounds of venture capital financing' (2014) 43 Research Policy 956-989 isolate the signalling effect. Others do not, and some acknowledge that they cannot disentangle whether the results that they report occur because of the patent or because of the technology *per se.* See Ronald J. Mann and Thomas W. Sager, 'Patents, Venture Capital, and Software Start-ups' (2007) 36 Research Policy 193, 200.

c) Patents as Shield – The Defensive Use of Patents

Furthermore, the previously mentioned 2008 Berkeley survey[181] finds that the next most important reason for start-ups to file a patent application is related to the possibility to diminish the likelihood of being sued for infringement as well as to achieve a better negotiation position. The result is relevant since it overcomes the assumption of the previous literature, namely, that start-ups were not targeted in licensing and litigation activity at such a larger extent to justify a defensive use of patents from their side.[182]

In general, the possibility for a start-up of strategically using patents in a defensive way will improve the allocation of risk among the parties, thus resulting in a more balanced patent litigation arena.

d) Securing licensing revenues – Other possible uses of patents as assets

Finally, when it comes to the importance of patents in order to secure licensing revenues, the 2008 Berkeley survey findings show that this factor is perceived as less important when compared to the other ones.[183] Nevertheless, the results show that start-ups rely more on licensing in comparison to established larger firms, and in particular firms in the biotechnology sector rate licensing as a more important reason to patent than firms in other technology sectors.[184] The theory that small firms are more likely to rely on licensing than established larger firms is furthermore supported by other empirical studies.[185] The finding is consistent with the markets-for-technology view, according to which, since they operate in upstream technology markets, start-ups rely more on licensing in order to provide technology inputs to large firms that are usually active in downstream product markets.[186] Indeed, as highlighted in Chapter 1, start-

[181] Stuart J.H. Graham., Robert P. Merges, Pamela Samuelson and Ted M. Sichelman, 'High technology entrepreneurs and the patent system: results of the 2008 Berkley patent survey' (2010) 24 Berkley Technology L.J. 1255, 1300.
[182] Ibid.
[183] Ibid., 1302.
[184] Ibid.
[185] See Alfonso Gambardella et al., 'The value of European patents: evidence from a survey of European Inventors' (2005) 41 available at https://www.ipeg.com/wp-content/uploads/2015/02/PatVal-EU-study-2005.pdf (accessed on 18 October 2018) and 'Study on evaluating the knowledge economy – What are patents actually worth? The value of patents for today's economy and society' Final Report (23 July 2006) 17-18. The latter study confirms that the sectors in which a high number of patents is licensed are mainly biotechnology and medical technology where several small companies are active, and this trend is getting stronger. When it comes to the differences in terms of type of applicant in relation to the share of the licensed and willing-to-be-licensed patents for the selected sample, the data show that small firms license 25.9% of their patents, while medium and large firms license 9.2% and 8.6%, respectively. Furthermore, small firms are willing to licence 38.8% of their patents against 9.2% and 8.6% of the other two types of firms. This *propensity* has been interpreted as the outcome of the fact that larger firm own much more complementary assets when compared to smaller firms.
[186] See Ashish Arora and Marco Ceccagnoli, 'Patent Protection, Complementary Assets, and Firms' Incentives for Technology licensing' (2006) 52 MGMT Sci. 293, 304.

ups who develop new ideas may well often lack the in-house technical expertise as well as the complementary assets in order to implement their technology in the end-product. Against this background, a cooperation with larger firms through licensing or joint development agreements is a viable option to strengthen the innovative potential of the start-up.

In their function as proprietary assets, start-ups can use patents not only for licensing or transfer purposes in order to generate streams of revenues, but also for collateralisation and securitisation, although the latter may well be of less importance within the start-up ecosystem. Indeed, according to the growing practice of using IP rights as a *collateral***,** start-ups can use patents to secure a loan or other forms of bank financing and can protect the lender (bank) if the investment is not successful, allowing seizure in case of default.[187]

In contrast, *securitisation* is a form of financing which consists in the pooling of revenue streams which are packaged in order to become marketable securities. Therefore, start-ups can potentially use the future revenue stream deriving from a patent in order to issue securities. In the securitisation process, the originator could be a bank that receives payments deriving from a mortgage as well as an IP owner who receives licensing fees. As a first step, the originator takes all the revenues from the various parties and puts them together in a common pool. At a second step, the originator transfers the assets and revenue streams that have been pooled to a so called 'special purpose vehicle' (SPV), which holds them and issues securities to investors as well as monitors the payment of dividends on the securities.[188] Securitisation presents several benefits. First of all, it allows to get liquidity from an upfront payment without having to wait to receive the full amount generated by the revenue stream. Secondly, the company can receive finance through securitisation without having to change the structure of the ownership.[189] Furthermore, once that the assets have been transferred to the SPV, the originator is no longer associated with them and therefore does not have to bear the risk that the revenue streams might not produce the due amount, a risk which is instead transferred to the SPV. However, securitisation is very costly because it requires expenses in terms of legal fees, the costs to establish the SPV and other fees. Therefore, it is unlikely that start-ups use patents for this method of financing, while it is mainly used by companies who have high earnings. Furthermore, small companies and start-ups may be reluctant to use it because of accountancy issues. Indeed, due to the fact that high rated

[187] For a thorough analysis on the uses of intellectual property rights as a collateral see Peter G. Picht, *Vom Materiellen Wert des Immateriellen* (Mohr Siebeck, 2018). For an analysis referring more specifically to the uses by start-ups see Xuan-Thao Nguyen, 'Collateralizing Intellectual Property' (2007) 42(1) Ga. L. Rev. 1, 15-22; Matthew J. Pinkerton, 'Considering the Next Generation of Innovators: Incorporating the Needs of Start-Ups into the United States Patent and Trademark Office's Intellectual Property Strategy' (2011) 23 Pac. McGeorge Global Bus. & Dev. L.J. 313, 318. See also Jean-Bernard Chatelain, Kirsten Ralf and Bruno Amable, 'Patents as collateral' (2010) 34(6) Journal of Economic Dynamics and Control 1092-1104.

[188] For more in this regard, see Marilee Owens Richards, 'The Collateralisation and Securitization of Intellectual Property' (2016) 136, available at https://qmro.qmul.ac.uk/xmlui/bitstream/handle/123456789/24716/Owens_Richards_M_PhD_260117.pdf?sequence=1 (accessed on 12 November 2018).

[189] Jason Kravitt, *Securitization of Financial Assets* (2nd ed. Supp. Aspen Publishers, 2011).

revenue streams are transferred away from the balance sheet of the company, securitisation can cause a diminution of the value of the company's portfolio.[190]

Even though collateralisation and securitisation are not frequently used, they constitute an increasing practice and can be potentially considered by start-ups as an additional way to use patents as assets in order to gain financing and liquidity, which will in turn positively boost their growth prospects.

2. Why start-ups do not patent

a) Costs considerations, the risk of litigation, the reluctance to disclose information and the belief that the technology is not patentable

On the other hand, when it comes to the decision not to file a patent application, the most frequently reason cited is the cost of patenting. The fear of cost exposure however is not limited to the mere grant of a patent but encompasses also the costs related to prosecution and enforcement.[191]

The quality of the enforcement mechanisms plays a central role in the way in which the patent system can influence the life and innovation of start-ups. Indeed, the design of a litigation system can have effects also on the other possible uses of patents, namely, in their defensive function as well as in their uses as assets and as a signal of value and quality. Even if data on litigation are rare and difficult to find, infringements can be a significant problem not only for SMEs[192] but particularly for start-ups. Due to the innovative character of their activities, they are indeed at a higher risk to be targets of predatory litigation. In certain circumstances, start-ups can benefit from the sale of their patent as a result of the lawsuit.[193] However this happens only in a minority of cases in which start-ups decide to monetise their patents and it does not hold true for start-

[190] Marilee Owens Richards, 'The Collateralisation and Securitization of Intellectual Property' (2016) 136, available at https://qmro.qmul.ac.uk/xmlui/bitstream/handle/123456789/24716/Owens_Richards_M_PhD_260117.pdf?sequence=1 (accessed on 12 November 2018).

[191] Stuart J.H. Graham., Robert P. Merges, Pamela Samuelson and Ted M, Sichelman, 'High technology entrepreneurs and the patent system: results of the 2008 Berkley patent survey' (2010) 24(4) Berkley Technology L.J.,.1255, 1311.

[192] Two separate studies highlight the extent of the problem and report that the vast majority of European SMEs (75 and 67% respectively) had experienced some form of IP abuse. See Simon Rodwell, Philippe Van Eeckhout, Alasdair Reid and Jacek Walendowski, 'Effects of counterfeiting on EU SMEs and a review of various public and private IPR enforcement initiatives and resources', Final Report on Behalf to the European Commission (2007); William Kingston, 'Making Patents Useful to Small Firms' (2004) Intell. Prop. Qu. 369-378. As cited in Alan Huges, Andrea Mina, 'The impact of the patent system on SMEs', Centre for Business Research, Working Paper No. 411 (September 2010) 2425.

[193] In some cases, startups have used the money received from the sale of patents to NPEs in order to fund a business pivot, to hire new employees and help the growth of the company. See Colleen Chien, 'Patent Assertion and Startup Innovation (2013) 20, available at http://digitalcommons.law.scu.edu/facpubs/856 (accessed 15 December 2018).

ups that do not own patents and whose innovation would be harmed in any case. Furthermore, start-ups' concern with patent enforcement extends to their inability to defend themselves against suits brought by larger competitors who are fearful of the start-up's success and therefore attempt to interfere and create obstacles to the business's operations.[194] By imposing litigation costs, large companies can force the start-up to leave the market. Moreover, a lawsuit can discourage investors and acquisition partners to fund the company, due to the detrimental effects that the suit can have on the business.[195] A lawsuit in any case represents a significant disruption to the business and can have detrimental effects also on the benefits that can derive from the other possible uses of the patent, in their function as assets in licensing and trade as well as of signals of quality and value of the company.

In any case, it is important to stress that, despite the fact that cost constraints are a main hindrance for start-ups to patent, the most important reason to avoid patenting differs among industries. Indeed, in the biotechnology sector, the reluctance to disclose information was cited as a most important factor.[196] Similarly, the reasons not to patent differ depending on whether the innovation relates to a product or a process technology. In the first case, filing costs are the most important factor. In the second case, the costs of filing, the reluctance to disclose information and the belief that the technology was not subject to patent protection count as equally important.[197]

In particular the latter reveals the problem of an overall lack of awareness in relation to the IP system, which is relevant in the context of the analysis of the influence of the patent system on the incentives to innovate and will therefore be analysed in more detail hereinafter.

V. Problem of Awareness and Implications on the Incentives to Innovate

Several studies explored the absence of IP awareness in relation to start-ups as well as SMEs, finding that often entrepreneurs are not aware of the value of intellectual property in the initial phase of a company. In more general terms, the issue of awareness involves businesses across different sectors and different sizes. Nevertheless, in general larger companies have more awareness of IP-related matters and have better resources to understand how to make greater

[194] In Colleen Chien, 'Patent Assertion and Startup Innovation (2013) 20, available at http://digitalcommons.law.scu.edu/facpubs/856 (accessed 15 December 2018) 20, the surveyed VCs A number of VCs expressed the sense that the patent advantages of incumbents were as great, if not greater, a problem for start-ups than patent trolls.

[195] See Mark A. Lemley, 'The Surprising Resilience of the Patent System' (2016) 95 Tex. L. Rev. 1, 45.

[196] Stuart J.H. Graham., Robert P. Merges, Pamela Samuelson and Ted M. Sichelman, 'High technology entrepreneurs and the patent system: results of the 2008 Berkley patent survey' (2010) 24 Berkley Technology L.J. 1255, 1314.

[197] Ibid.

use of IP. Indeed, according to the 2010 UK IP Awareness Survey, only 14% of firms with less than 50 employees knew that publication of an invention before filing for a patent would exclude successful patent applications. The percentage of awareness is instead greater when considering firms with more than 250 employees, almost reaching 30%.[198]

The general level of knowledge of the IP system and abilities of small firms to use it are modest. This either prevents these firms from using the IP system, or they have excessive expectations regarding its benefits. Conversely, large companies have a greater understanding and apply better IP strategies.[199] Along the same lines, further qualitative evidence suggests that young innovative companies lack IP awareness and stress the need of a reform of the patent system.[200]

Against the backdrop of the generally low level of awareness, some main issues that make it difficult for small businesses to obtain the support they need have been identified. In this regard, the fragmented sources for information, the lack of broad and standardised business advice and the costs related to IP management play a key role.[201]

Therefore, small businesses often do not gain the maximum benefits they can receive from the patent system, given that they rely on alternative means of protection, such as secrecy. Furthermore, the problem is also the complex architecture of the patent system, which presents a high level of uncertainty for the users. The entrepreneur's behaviour is mainly driven by the cognitive perceptions they have towards the IP system. It is indeed that perception that influences the decisions on IP strategies, and it is a general 'cognitive bias' towards the IP system that impedes start-ups and small enterprises to make full use of it.[202] Given the general lack of understanding on the functioning of the patent system, it is reasonable to doubt that the traditional incentive theory of the patent system works also for start-ups.

The incentive mechanism will only work if the individual start-up is conscious of the opportunities that the environment in which it operates can offer. This raises two questions, namely, whether

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[198] Robert Pitkethly, 'UK Intellectual Property Awareness Survey 2010', available at http://www.ipo.gov.uk/ipsurvey2010.pdf (accessed on 7 November 2018).

[199] Juhani Talvela, 'How to Improve the Awareness and Capabilities of Finnish Technology Oriented SMEs in Patent Related Matters', (Conference paper, June 2016) 270, available at https://www.researchgate.net/publication/316735577_How_to_Improve_the_Awareness_and_Capabilities_of_Finnish_Technology_Oriented_SMEs_in_Patent_Related_Matters (accessed 7 January 2019).

[200] Roya Ghafele, 'What Young Innovative Companies Want: Formulating Bottom-up Patent Policy for the Internet of Things' (2017) 7(1) Journal of Intellectual Property and Entertainment Law 86, 97-101. The study reports qualitative findings from 31 surveyed young innovative companies active in the Internet of Things field.

[201] See IPEuropeAware, 'Promoting the benefits of greater knowledge and effective management of European SMEs & Intermediaries (2013) 36 available at https://www.dpma.de/docs/dpma/conclusion_paper_ipeuropaware.pdf (accessed 7 November 2018); Ian Hargreaves, 'Digital Opportunity: A Review of Intellectual Property and Growth' (18 May 2011) 86-90, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32563/ipreview-finalreport.pdf (accessed 7 November 2018).

[202] As argued in Ignacio De Leon, Jose Fernandez Donoso, *Innovation, Startups and Intellectual Property Management. Strategies and evidence from Latin America and other regions* (Springer 2017) 6.

start-ups need the incentives of the patent system and whether changes of the patent system could have any positive effect on their perception of patents as incentives to innovate. In relation to the first question, it is possible to argue that patents may well not create any direct incentive to innovate for start-ups, since start-ups, regardless of whether they seek patent protection or not, are primarily driven by their willingness to grow.[203] Nevertheless, the features of the design of the patent system may to a certain extent facilitate or hinder their ability to innovate.

VI. Conclusion

This Section explored whether the incentive theory can work also for start-ups. It reviewed empirical data on how start-ups use the patent system and tried to clarify to what extent the patent system can hinder or encourage their innovation. It results that, even if patents may not be perceived as an incentive to innovate due to the lack of awareness on how the system works, patents can spur the innovation of start-ups when they are used in their function as an exclusive right, as an asset in licensing and trade or as a signal of the value and quality of the company.

C. Start-ups within the Unified Patent Package

In order to explore whether the adoption of a certain law or regulation in the patent field would be beneficial or detrimental to a particular group of businesses and what could be the effects of its implementation, it is relevant to explore the reasons and the way in which such a specific law has been drafted and adopted. Furthermore, for assessing whether the specific law meets their interests, it is necessary to explore how the adoption of the new regulation may influence the factors that start-ups may take into account when seeking patent protection. This will then allow to understand on which aspects it is more relevant to focus in the further analysis. The present Section C therefore aims at answering the following research questions: which interest groups had more influence during the legislative process? To what extent have the interests and the position of start-ups been taken into account during the discussions and within the resulting UPCA and connected Regulations? Which are the main strategical advantages and expectations that start-ups may have in relation to a system of unified patent protection in light of their interests?

To these aims the explanation of the development of interest group theories carried out in Sub-section I, will serve as a theoretical framework and basis for the analysis of the historical evolution of the patent law unification in Sub-section II. The analysis will show that due to the relevance that the features of the litigation system for patent disputes may have in relation to

[203] See Chapter I.

the factors that start-ups may strategically consider when deciding to seek patent protection, it is more appropriate to concentrate the further analysis on the main characteristics of the system of patent litigation which can have relevant implications for start-up litigants.

It must be stressed that for the following analysis not only start-ups but also the SMEs category will be taken into account. This is because the term 'start-up' has been coined only recently and has been used only in relation to more recent societal developments. In addition, although SMEs do not present the innovation characteristic that start-ups have, they however both share similar concerns when it comes to litigation. As a consequence, also the referral to the extent at which SMEs interests have been considered during the process, serves the purposes of the present analysis. The analysis is original since the theory of interest groups has not been applied to the case of the Unified Patent Court by any other study yet. However, the analysis presents some limitations, which are inherent to the application of the theory and relate to the impossibility of having concrete access to all the documents concerned. Nevertheless, the thorough analysis of all the documents mentioned during the exposition allows to reach informed conclusions. It certainly results that start-ups as defined in the present Chapter I Section A, have not been explicitly taken into account nor have they actively participated in the discussions. However, when considering the broader category of SMEs, with whom start-ups share many of the concerns in relation to litigation, the outcome is different. It results indeed that to some extent the implications that the establishment of a unified court would have had on SMEs have been a point of concern during part of the legislative evolution. However, it appears that when this was the case, the interests of SMEs (and indirectly start-ups) have been indirectly put forward by other larger established incumbents or industry associations. Rarely, if almost never, had they a direct voice in the discussion.

I – Theoretical Premise

1. An Overview of New Institutional Economics

The behaviour of market participants is modelled by formal and informal institutions that create and facilitate socio-economic interactions and can diminish uncertainty. A thorough explanation of the prevailing neoclassical economic theory and of the New Institutional Economic (NIE) theory goes beyond the scope of the present analysis. However, it is relevant to highlight that the NIE distinguishes itself from the neoclassical theory both when it comes to its assumptions and to its overall approach which identifies institutions as central elements of the economic environment and process. As regards its assumptions, it introduces the concept of 'bounded rationality',[204] which assumes that individuals only possess limited resources and capacity to handle information. The NIE consists of various theoretical approaches. It is not the purpose of this

[204] Introduced by Herbert Simon, see Herbert A. Simon, 'A Behavioral Model of Rational Choice' in Herbert A. Simon *Models of Man: Social and Rational* (1957) 241-260.

Section to review the theoretical foundations of the different approaches. Rather, it will instead focus only on one of the levels of analysis of principal interest to the NIE, namely, the institutional environment or the 'rules of the game'.[205] Before focusing on the analysis of the latter, it is important to explain how institutions are defined and to provide a broader overview of the different levels of analysis.

In the framework of New Institutional Economics there is a consensus on defining institutions as man-made rules which are shared among members of a social group. In particular, North defines institutions as 'humanly devised constraints that structure human interaction. They are made up of formal constraints (e.g., rules, laws, constitutions), informal constraints (e.g. conventions, self-imposed codes of conduct) and their enforcement characteristics'.[206] Therefore, if institutions are the rules of the game, organisations, such as political organisations, economic and social entities, constitute the players of the game and they may require institutional rules to function properly.

When it comes to the analysis of the economics of institutions, it is instructive to explain the classification presented by Williamson, who distinguishes between four different levels of analysis.[207]

The first level of analysis concerns the socially embedded institutions such as traditions, conventions and customs. They change over a long period of time but they play an important function since they influence the development of lower-level institutions as well.[208]

The second level of analysis relates to the institutional environment, the so called "rules of the game" which set the actions of the different players in pursuing their strategies.[209] This level encompasses the executive, judicative and legislative framework of a society. North, who mainly deals with this level of analysis, utilises elements of the property rights approach, of the transaction cost model and of public choice theory, which will be hereinafter addressed in more detail for the purposes of further analysis.

The third level of NIE analysis focuses on transaction costs as well as on the organisation of governance of the contractual relations. Williamson bases his Transaction Cost Economics on this third level of analysis and explains that here the normative question requires to investigate beyond the simple 'rules of the game' in order to understand 'the play of the game'.[210]

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[205] Douglass C. North, 'Institutions and Economic Theory' (1992) 36(1) The American Economist 3, 4; Oliver E. Williamson, 'The Institutions of Governance' (1998) 88 The American Economic Review 75-79.
[206] Douglas C. North, 'Institutions and Economic Theory' (1992) 36(1) The American Economist 3, 4.
[207] Oliver E. Williamson, 'The New Institutional Economics: Taking Stock, Looking Ahead' (2000) 38 Journal of Economic Literature 595-613.
[208] Ibid. 596.
[209] Chrysostomos Mantzavinos, *Individuals, Institutions, and Markets* (2001) 83.
[210] Oliver E. Williamson, 'The New Institutional Economics: Taking Stock, Looking Ahead' (2000) 38 Journal of Economic Literature 595, 599.

The fourth level of analysis is the traditional domain of neoclassical analysis and refers to the optimal allocation of resources of the firm through a proper alignment of incentives and adaptation of output and prices.

The next part will look more closely at the second level of analysis.

2. Institutional Environment

The second level of NIE analysis focuses on the institutional environment of society as the determinant of economic change and development. The approach of North's analysis is to look for the reasons and the ways in which institutions come into existence and how they change. North states that institutions exist in order to reduce uncertainty in social interactions and to facilitate order in the social and economic environment.[211] Moreover, according to North's theory institutions are brought into existence by political actors with different bargaining powers and that even if several alternative institutional choices exist, the inefficient institution may still prevail because of the emergence of temporary or permanent collusions of groups with specific interests.[212] In other words, groups and individuals act with the aim to influence the legislative process or the outcome of government decisions.

a) The Theory of Interest Groups

The literature has categorised interest groups in different ways.[213] Interest groups theories are a narrower category within the broader framework of public choice theory.[214] Early interest groups theories did not look into the specific interactions between the different interest groups and the legislature in order to understand how interest groups exert their pressure and how the government or the legislature then transpose that engagement into policy and legislation. Instead Stigler developed one of the first approaches to interest groups based on more solid theoretical foundations.[215]

In particular, according to Stigler's view, politicians decide on policies and regulations on the basis of the degree of political support they will receive from the groups that would be benefitted net of the opposition of the ones that are harmed. Under these circumstances, the ability of groups

[211] Douglass C. North, 'Institutions and Economic Theory' (1992) 36(1) The American Economist 3, 4.
[212] Douglass C. North, *Institutions, Institutional Change and Economic Performance* (1990) 12.
[213] See Kip W.Viscusi, Joseph E. Harrington et al., *Economics of Regulation and Antitrust* (2005).
[214] Among major contributors in the field see Kenneth J. Arrow, *Social Choice and Individual Values* (1951); Duncan Black and Robert A. Newing, *Committee Decisions with Complementary Valuation* (1951); Duncan Black, 'On the Rationale of Group Decision-Making' (1948) 56 J. Pol. Econ. 23-34; Anthony Downs, *An Economic Theory of Democracy* (1957); William Riker, *The Theory of Political Coalitions* (1962).
[215] George J. Stigler, 'The Theory of Economic Regulation' (1971) 2(1) The Bell Journal of Economics and Management Science 3-21. See also Robert McCormick and Robert Tollison, *Politicians, Legislation, and. the Economy: An Inquiry into the Interest-Group Theory of Government* (1981).

to organise themselves and provide support and information is a key feature in determining which interest groups will prevail. It follows that, first, policy will tend to address small, well-organised and uniform groups that are more able to give support.[216] Secondly, that politicians looking for support will direct their actions and reforms to industries and sectors where considerable changes can take place. Thirdly, it also implies that the regulation will distinguish within each group which sub-groups will be more capable of providing support. Thus, for example, policy distinguishes firms in the industry according to size, location and technology. This view has been then further detailed by Becker, who in addition considers that any type of redistribution through taxes and subsidies also implies deadweight losses that undermine efficiency. Hence, politicians would opt for methods and regulations that avoid high deadweight losses to maximise their net support.[217]

b) The difficulties of empirical testing interest group theories

Interest group theories provide a theoretical framework for assessing and testing the implications of policies and regulations. Certain tests aim at identifying changes in prices and other variables after specific policy amendments and then try to correlate these changes with the interests of certain groups. Nevertheless, these tests do not explain how groups exert their pressure. In this regard it is possible to identify three main problems.[218] First, it is difficult to measure the bargaining power and the level of organisation of each different interest group. Usually, measures such as the value of the products of a particular industry or the number of members of the group can help to tackle some of the pressures exercised on the legislature. Secondly, identifying the extent of interest group pressure on the draft of final policies and regulations is also problematic. It is indeed difficult to find an empirical method that can detect with rigour the influence of interest groups. Lastly, a third problem related to this type of tests is that every policy and regulation would in all cases lead to a certain redistribution. Consequently, it often occurs that the groups whose interests are satisfied are immediately deemed as the ones which had the most prominent role in influencing the outcome.

3. The relevance of the theory for the study and how to analyse it

The interest groups theoretical background is relevant to provide a foundation to the analysis on how the changes in patent law and policy can have an influence on and meet the interests of a

[216] See George J. Stigler, 'The Theory of Economic Regulation' (1971) 2(1) The Bell Journal of Economics and Management Science 3, who states that 'regulation is acquired by the industry and is designed and operated primarily for its benefit'.
[217] Gary S. Becker, 'A Theory of Competition Among Pressure Groups for Political Influence' (1983) 98 Quarterly Journal of Economics 371-400.
[218] See more extensively in this regard, Lee J. Alston, Bernardo Mueller, et al., *Institutional and Organizational Analysis: Concepts and Applications* (2016).

particular group, such as start-ups. The EPUE Regulation and the Unified Patent Court Agreement can indeed be seen as the new 'rules of the game' in Williamson's view within the patent law framework, of which certain groups such as start-ups, small and medium-sized enterprises, big industry, lawyers and judges are the main 'players'. On the presented 'second level' of analysis, it is therefore important to explore which interest groups may have exerted more pressure than others during the negotiation process and what has been the result of this influence in the final draft of the Agreement and of the Regulations. To this aim, despite the difficulties in empirically testing interest groups competition,[219] the next Sub-section proceeds with the envisaged analysis by exploring to what extent start-ups have been taken into account during the historical process that led to the creation of a unitary patent system and what have been the influences during the legislative process. Even if the historical evolution has been extensively addressed in the literature, there is no analysis which explores the position of start-ups and of small and medium-sized enterprises during the process. At the same time, the analysis will help to highlight which are the main justifications behind the establishment of a unitary system of patent protection and to what extent these could collide or coincide with the interests of start-ups.

II. From European Patent Integration to the Unitary Patent Package – SMEs and Start-ups in the Negotiations

In application of the theory of interest groups, the following Sub-section explores the historical evolution that led to the last proposal for the implementation of a unitary patent package, in light of the role and influence that start-ups may have had during the different phases.

1. From the Draft (Luxemburg) Community Patent Convention of 1975 to the Commission Proposal on the Community Patent (2000)

In the different phases of the historical evolution, several court models have been developed alongside the substantive patent proposal, with the aim to guarantee a functioning cross-border litigation system.

The First Community Patent Convention from 1975[220] envisaged a decentralised system similar to the one in place for community trademark and designs, based on national courts with the possibility of preliminary reference to the CJEU.

The preparatory documents show that the majority of the participants in the discussions were representatives of the Member States and of organisations representing the interests of big

[219] See above par. 2 b).
[220] Convention for the European patent for the common market (Community Patent Convention) of 15 December 1975 [1976] OJ L 17/1.

industries. Interestingly, however, during the discussions some industry associations already referred to the possible effects, benefits and issues that the implementation of such a system would potentially have on small enterprises. In particular, the International Federation of Inventors Associations (IFIA) highlighted how the establishment of the envisaged system had, as a primary objective, the realisation of a uniform market for the European Union together with the goal to support big industries, more than to encourage the growth of new small companies and to realise a cheaper environment for inventors.[221] Furthermore, the Fédération internationale des conseils en propriété industrielle (FICPI) stressed the importance of maintaining the relevance of national patents, since they constitute an important asset for the society and because they are the most important means for small and medium-sized enterprises in order to compete in the market. In the first years of existence, smaller enterprises are indeed restricted to smaller geographic markets on which their further growth and expansion are dependent.[222] The European Industrial Research Management Association (EIRMA) stressed instead the importance of the existence of a transitory period for both established as well as new and small enterprises.[223] More critically, IFIA highlighted the high costs of renewal fees and claimed their abolition and stressed that they should not be carried by financially weak applicants.[224]

In sum, the Preparatory Documents to the First Community Patent Convention show considerable presence of representatives of Member States and of big industry associations. Nevertheless, these associations raised the issue of the influence of the system on small and medium-sized enterprises as one of the points of concern. Nevertheless, those considerations may well not have received particular attention, given that the Preamble does not include any explicit referral to these concerns or to the potential benefits of the system for these smaller market actors, nor does the text of the Convention. The final text of the Community Patent Convention of 1975 envisaged the creation of a system of community patent divisions, the 'Revocation Division' and 'Revocation Board' of the European Patent Office,[225] with jurisdiction over nullity and revocation proceedings, while the jurisdiction over infringement proceedings would have remained with the national courts either with general jurisdiction when the action is filed before the courts of the defendant's domicile, or limited to acts of infringement committed

[221] Vorbereitendes Dokument Nr. 6 Revidierte Fassung – International Federation of Inventors Associations (IFIA), Januar 1974 in 'Dokumente der Luxemburger Konferenz über das Gemeinschaftspatent 1975', Generalsekretariat des Rates der Europäischen Gemeinschaften, Brüssel – Luxemburg (1981) 21.

[222] Vorbereitendes Dokument Nr. 33 – Fédération internationale des conseils en propriété industrielle (FICPI), September 1975 in 'Dokumente der Luxemburger Konferenz über das Gemeinschaftspatent 1975' Generalsekretariat des Rates der Europäischen Gemeinschaften, Brüssel – Luxemburg (1981) 115

[223] Vorbereitendes Dokument Nr. 34 – European Industrial Research Management Association (EIRMA), September 1975 in 'Dokumente der Luxemburger Konferenz über das Gemeinschaftspatent 1975', Generalsekretariat des Rates der Europäischen Gemeinschaften, Brüssel – Luxemburg (1981) 117.

[224] Vorbereitendes Dokument Nr. 44 – International Federation of Inventors Association (IFIA), Oktober 1975 in 'Dokumente der Luxemburger Konferenz über das Gemeinschaftspatent 1975', Generalsekretariat des Rates der Europäischen Gemeinschaften, Brüssel – Luxemburg (1981) 152-154.

[225] Arts. 9 and 10 Community Patent Convention.

within that State.[226] Therefore, the Convention foresaw a complex legal order. However, the CPC never entered into force, since only seven EEC Member States ratified it.

In contrast, the Second CPC 1989[227] envisaged the establishment of a Community Patent Appeal Court (COPAC) based on international law. It proposed centralised administrative appeals and the competence to take preliminary rulings from national courts. This proposal was however rejected by the industry mainly on the grounds that the Court would have lacked the requisite expertise and because of the costs of translation.[228]

Subsequently, the Commission Proposal for a Community Patent Regulation[229] from 2000 and the related previous 1997 Green Paper[230] foresaw a Community IP Court (CIPC), with jurisdiction in infringement and invalidity proceedings at first and last instance. The centralised Court would however not have had any competence in relation to administrative appeals, which would have remained with the EPO as the office granting the Community Patent.

By analysing the documents related to this proposal for a Community Patent Regulation, it is interesting to note how the position of SMEs began to gain proper attention. It is indeed explicitly stressed that the patent system should take into account all users' needs, thereby mentioning enterprises, inventors and SMEs.[231] Moreover, even if it is not possible to track the entire negotiation process that led to the 2000 Proposal, it must be stressed that the adoption of the Green Paper[232] has been preceded and followed by a consultation of interested parties in 1997 during which more than 150 opinions were collected and integrated with an hearing organized by the Commission together with the Luxemburg Presidency of the Council, open to all users of the patent system (enterprises, inventors, patent agents etc.). Although it is known that 200 users took part in the hearing.[233] This surely shows an attempt to favour broader participation in the matter. Yet it is not possible here to concretely assess whether and if yes, which number of SMEs did actually actively take part in the discussions. Nevertheless, it is evident how the idea that the interests of SMEs need to be safeguarded has become a clear point of concern in the agenda, which the envisaged Community Patent Regulation was meant to address with the aim of

[226] Art. 69 Community Patent Convention.
[227] Agreement relating to Community Patents (ACP), [1989] OJ L 401/1.
[228] In this sense, Otto Bossung, 'A Union Patent instead of the Community Patent – Developing the European Patent into an EU Patent' (2003) 34 IIC 1, 23.
[229] Commission Proposal for a Council Regulation on the Community patent, 1 August 2000, COM(2000) 412 final.
[230] European Commission, 'Promoting Innovation through Patents – Green Paper on the Community patent and the patent system in Europe, 24 June 1997, (97)COM 314 final, and the related Commission Communication 'Promoting Innovation through Patents – The follow-up to the Green Paper on the Community Patent and the Patent System in Europe', 5 February 1999, (1999)COM 42 final.
[231] Commission Communication 'Promoting Innovation through Patents – The follow-up to the Green Paper on the Community Patent and the Patent System in Europe' 5 February 1999, COM (1999) 42 final, 6.
[232] European Commission, 'Promoting Innovation through Patents – Green Paper on the Community patent and the patent system in Europe, 24 June 1997, (97) COM 314 final.
[233] Commission Communication, 'Promoting Innovation through Patents – The follow-up to the Green Paper on the Community Patent and the Patent System in Europe', 5 February 1999, COM (1999) 42 final, 6.

rendering the patent system more attractive by reducing fees and a potential insurance scheme covering disputes involving patents.[234]

2. The Common Political Approach (2003)

The Commission Proposal on the Community patent presented in 2000 was subject to debate in particular concerning the structure of the future jurisdictional system, the language regime, the costs, the distribution of renewal fees and the role of national patent offices.[235] With the aim to find an agreement, on 3 March 2003, the Council adopted a 'Common Political Approach'[236] to reach an agreement on the above-mentioned issues. Within the Common Political Approach, the only referral to SME was in relation to actions that national patent offices would need to take to disseminate patent information and advising SMEs.[237] Despite the efforts, it resulted however impossible to find a political compromise on this text, which had been therefore abandoned. Some months after the publication of the Common Political Approach, the Commission presented two documents concerning jurisdictional matters, namely, the 'Proposal for a Council Decision Conferring Jurisdiction on the Court of Justice in Disputes Relating to the Community Patent' and the 'Proposal for a Council Decision Establishing the Community Patent Court and Concerning Appeals Before the Court of First Instance', which afterwards had been also abandoned, due to dissents during subsequent negotiations.[238] These proposals attempted to put concretely into practice the new basis for specialised EU courts below the level of the General Court (GC) as set by Articles 229a and 225a, which were introduced into the EC Treaty by Article 2 of the Treaty of Nice, which entered into force on 1 February 2003. The proposals aimed at creating the centralised Community Patent Court (CPC), as an EU-law specialised court based on Article 257 TFEU, with competences for invalidity and infringement proceedings, while administrative appeals would have remained within the EPO system.[239] The mentioned documents containing the proposals show some attention to the interests of SMEs. In particular, the relevance for SMEs arises from the fact that the Commission foresaw the need of pursuing

[234] Ibid. 18-20.

[235] See in particular, Opinion of the Economic and Social Council on the Proposal for a Council regulation on the Community Patent (SEC/2001/411); Commission Staff Working Paper: A Community Policy for the Realisation of a Community Patent in the Context of a Revision of the European Patent Convention (SEC/2001/744 final); Commission Working Document on the planned community patent jurisdiction, COM(2002) 480 final.

[236] Council Doc. 7159/03 adopted on 7 March 2003.

[237] Council Doc. 7159/03 adopted on 7 March 2003, 4.

[238] Proposal of the Commission for a Council Decision Conferring Jurisdiction on the Court of Justice in Disputes Relating to the Community Patent, 23 December 2003, COM(2003) 827 final; Proposal of the Commission for a Council Decision establishing the Community Patent Court and concerning appeals before the Court of First Instance, 23 December 2003, COM(2003) 828 final.

[239] For more details concerning the envisaged structure and functioning of this model see Alfredo Ilardi, *The New European Patent* (Hart Publishing, 2015) 23.

an impact assessment and consultations on the impact of the Community Patent Court proposal on businesses and SMEs in particular.[240]

3. The EPLA

Between 2003 and 2005, in parallel to the ongoing work of the Commission and the Council Working Party on Litigation established within the EPO set an alternative plan to create a supranational court for cross-border patent litigation under the European Patent Litigation Agreement (EPLA).[241] The EPO Working Party coordinated the negotiations of the EPLA. During the development of the legislative initiative there is no explicit referral to the position of SMEs, but a more general statement that the proposed jurisdictional arrangement would represent an optimum solution for the users of the European patent system.[242] The proposal was definitely abandoned in 2007, when the Legal Service of the European Parliament issued a negative interim legal opinion stating that Member States were not entitled on their own to conclude the EPLA.[243] In particular, the Legal Service stressed that there was an overlap between the EPLA and the Directive 2004/48 on the enforcement of intellectual property rights and the existence of contradictions between the two instruments on several matters.[244] Furthermore, it highlighted that EPLA would also affect the uniform and consistent application of the Brussels Regulation 44/2001 on jurisdiction[245] and that EPLA was in breach of Article 292 of the EC Treaty, which provided that the Member States of the European Community were obliged to respect the

[240] Proposal for a Council Decision establishing the Community Patent Court and concerning appeals before the Court of First Instance COM (2003) 828 final, 23 December 2003, 66-68.

[241] European Patent Office, 'Legislative Initiatives in European Patent Law. European Patent Litigation Agreement – EPLA', available at https://web.archive.org/web/20061018103942/http://patlaw-reform.european-patent-office.org/epla/ (accessed on 14 May 2020). See more in detail Working Party on Litigation, 'Draft Agreement on the establishment of a European patent litigation system', 16 February 2004, available at https://www.ipeg.com/_UPLOAD%20BLOG/EPLA%20agreement_draft.pdf (accessed on 14 May 2020). For more information see Jochen Pagenberg, 'Industry, Legal Profession and Patent Judges Press for the Adoption of the European Patent Litigation Agreement (EPLA)' (2006) 37 IIC 46.

[242] Declaration of the Working Party on Litigation, 20 November 2003, available at https://web.archive.org/web/20061018103942/http://patlaw-reform.european-patent-office.org/epla/ (accessed 14 May 2020).

[243] IPEG, 'Negative Opinion on Powers of EU Member States to Agree Individually on EPLA' (February 10, 2007) available at http://ipgeek.blogspot.com/2007/02/negative-opinion-on-powers-of-eu-member.html (accessed 3 December 2020) referring to the EP Legal Service Interim Legal Opinion SJ-0844/06 dated 1st February 2007 and available at https://www.ipeg.com/_UPLOAD%20BLOG/Interim%20Legal%20Opinions%20Legal%20Service%20EP%20Feb%201%202007.pdf (accessed 3 December 2020). The legal status of the document is not clear and was not meant to be published as it does not appear on the EP website. For an analysis of the Interim Legal Opinion see also Anthony Arnull and Robin Jacob, 'European Patent Litigation: Out of the Impasse' (2007) 29(6) E.I.P.R. 209, 212-213.

[244] See EP Legal Service Interim Legal Opinion SJ-0844/06, para. 33.

[245] See EP Legal Service Interim Legal Opinion SJ-0844/06 paras. 59, 60.

exclusive jurisdiction of the CJEU to resolve disputes concerning the interpretation and application of Community law.[246]

4. The Commission Communication on the Strengthening of the Patent System in Europe (2007)

In any case, at the end of 2003, despite of the efforts of the Commission, there was a high risk that the negotiations would stop mainly because of issues concerning the language regime and jurisdictional matters. Therefore, in order to continue the debate, the Commission in March 2004 prepared a revised version of the previous 2000 Proposal for a Council Regulation on the Community Patent.[247] The Commission continued to highlight the 2000 Proposal ideas concerning the importance of adopting an affordable unitary patent system which should spur innovation, competition and economic growth. In this occasion, the Commission attempted to gain as many information as possible to provide many more elements for evaluation during the negotiations. First, it promoted a study of 27 industrial sectors to understand the industrial policy features. Secondly, on 16 January 2006, it launched a consultation in order to receive the opinions of the users on the patent system in Europe, asking which changes would be required to improve innovation, competition, employment and economic growth. The questionnaire was divided into four parts.[248] The answers to the first, concerning 'Basic Principles and Features of the Patent System' expressed the interest and importance of developing a European innovation policy to face the challenges originating from non-EU countries. In the second, relating to the 'Community Patent as a Priority for the EU', the survey shows a preference for the creation of a Community Patent but rejects the previous Common Political Approach concerning the language regime and jurisdictional matters. In the third part, referring to the EPLA, the majority of answers favoured changes in the litigation system towards more simplified, rapid and transparent procedures. The fourth part concerned a proposal on mutual recognition of national patents, which was however rejected by the majority of answers.[249] Although it is not feasible to directly check the identity of the participants to the consultation, it has nevertheless been highlighted that the Commission received 2,515 replies from businesses including SMEs from different sectors, Member States, researchers and academics.[250] It appears therefore that also SMEs had the opportunity to present their views in the framework of consultation. Indeed, their position has been explicitly taken into account in the next Communication of the Commission to the

[246] See EP Legal Service Interim Legal Opinion SJ-0844/06 paras. 63-66.
[247] Proposal for a Revised Council Regulation on the Community Patent, Council Doc. No. 7119/04.
[248] For an economic opinion in relation to the questionnaire see François Léveque and Yann Ménière, 'Academic Response to the European Commission's Questionnaire on the Patent System in Europe: An Academic Approach' (2008) 28(4) World Patent Information 305-311.
[249] Alfredo Ilardi, *The New European Patent* (Hart Publishing, 2015) 23.
[250] See Commission Communication, 'Enhancing the patent system in Europe', 3 April 2007, COM(2007) 165 final, 3.

European Parliament and the Council on "Enhancing the Patent System in Europe"[251] in particular in relation to the language regime and the need to enhance specific support services for these market players and foster the use of alternative dispute resolution mechanisms.[252]

5. From Enhanced Cooperation to the 'Patent Package'

By 2008, it has however become evident that the numerous issues addressed in the 2006 Consultation could have found an answer only through a unitary and coherent action of the Member States. Overall, the period between 2008 and 2011 saw the introduction of a series of proposals concerning the Community patent and the language regime and the debate concerning the creation of a unitary judicial system.

a) The CJEU Decision on the Creation of a European Patent Court

When it comes to the creation of a unified patent litigation system, from the above mentioned proposals and the 2006 consultation, it is evident how the debate on the proposed characteristics of the litigation system showed the existence of several and often diverging opinions of Member States and of potential users of the system. By taking this into consideration, on 23 March 2009, the Commission proposed the conclusion of a treaty among EU Member States and also other Member States of the EPO for the creation of a unified patent court system which would have jurisdiction over both unitary patents and European patents.[253] The draft treaty foresaw a decentralised court of first instance and a single appeal instance, with jurisdiction concerning the validity and infringement of European and future unitary patents. In order to make sure that the proposed draft treaty was compatible with EU law, the Council presented a request on 6 July 2009 to the CJEU for an opinion under Article 218(11) TFEU. On 8 March 2011, the CJEU issued its opinion[254] denying the compatibility of the treaty with EU law. In the opinion, the CJEU declared the incompatibility of such agreement with EU law. The basis of its opposition was constituted by the fact that the agreement deprived the courts of the EU Member States of the implementation of EU law and of the power to refer questions for a preliminary ruling. That lack of integration of the patent court within the EU jurisdictional system was therefore the core point of the CJEU's opposition to the Unified Patent Litigation System.

b) The Enhanced Cooperation and the Council Decision of 11 March 2011

[251] Commission Communication, 'Enhancing the patent system in Europe', 3 April 2007, COM(2007) 165 final.
[252] Ibid. 12-15.
[253] Council Document 7927/09 Opinion 1/09 of 8 March 2011 of 23 March 2009.
[254] CJEU Opinion 1/09 of 8 March 2011 ECLI:EU:C:2011:123, paras. 71 -89. For an analysis in this regard and alternative proposals see Thomas Jaeger, 'Back to square one? – an assessment of the latest proposals for a Patent and Court for the Internal Market and possible alternatives' (2012) 43 IIC 286–308.

In 2010, the Commission, with the support of the Council and of the Belgian Presidency, presented proposals that restated the idea that the language regime of the Council Regulation on the Translation Arrangements for EU Patents should be based on the trilingual system of the EPO.[255] However, a great number of Member States could not accept the final proposal and unanimity could not be reached during the Council meeting of 10 November 2010. In this framework, the entry into force of the Lisbon Treaty on 1 December 2009, changed the rules of the game. The newly introduced Article 118 TFEU indeed provides the EU with the possibility of adopting legislation on a European intellectual property title under the ordinary legislative procedure. However, pursuant to Article 118(2) TFEU, as regards the language arrangement for these unitary titles, the special legislative procedure applies and, thereby, continues to require unanimity in the Council. The difficulties on achieving a decision on the latter led several Member States to declare themselves open to implement a system of unitary patent protection within the framework of 'enhanced cooperation' pursuant to Article 20 TEU. In fact, according to Article 20 TEU and Articles 326-34 TFEU, a number of Member States are empowered to implement an enhanced cooperation in a specific area. Such enhanced cooperation is an exceptional measure to allow to pursue the objectives of the EU in a specific area when unanimity cannot be reached among Member States but where there is the intention of a group of Member States to cooperate to those aims. Therefore, the lack of unanimity in relation to the Commission's proposals opened the way to an enhanced cooperation for the creation of a unitary patent, which has been then finally adopted under Council Decision of 10 March 2011.[256] Later, the CJEU upheld this Decision, simultaneously rejecting the actions for annulment filed by Italy and Spain on the basis of lack of competence, misuse of powers and infringement of the Treaties.[257]

c) The Proposals on the Creation of Unitary Patent Protection and the Presidency Proposal of 2011 for Negotiations on the Creation of a Unified Patent Litigation System

The Council Decision of 10 March 2011 authorizing enhanced cooperation and the CJEU opinion of 8 March 2011 on the draft treaty on a unified patent litigation system were guiding the way forward to the adoption of a unitary patent system. On 13 April 2011, the Commission adopted

[255] Proposal of the Commission for a Council Regulation (EU) on the translation arrangements for the European Union patent" COM (2010) 350 final; Council Document 14377/10 of 6 October 2010 and Council document 15395/10 of 9 November 2010.

[256] Critical on the use of the enhanced cooperation mechanism Matthias Lamping, 'Enhanced Cooperation in the Area of Unitary Patent Protection – Testing the Boundaries of the Rule of Law' (2013) 20 Maastricht J. Eur. & Comp. L. 589. For more details on the Council decision see Alfredo Ilardi, *The New European Patent* (Hart Publishing, 2015) 30.

[257] Cases C-274/11 and 295/11 *Kingdom of Spain and Italian Republic v Council of the European Union* ECLI:EU:C:2013:240. For a thorough analysis on the cases see Matthias Lamping, 'Enhanced Cooperation in the Area of Unitary Patent Protection – Testing the Boundaries of the Rule of Law' (2013) 20 Maastricht J. Eur. & Comp. L. 589.

two proposals implementing enhanced cooperation, one in relation to the creation of unitary patent protection[258] and one with regard to the translation arrangements.[259]

In relation to the unified patent litigation system, after the CJEU opinion, the Hungarian Presidency proposed to the Council the resumption of the negotiations on the creation of unified jurisdiction on patent matters.[260] It proposed the conclusion of an international agreement limited to the Member States of the EU, envisaging the creation of a unitary court with exclusive jurisdiction in patent disputes for European patents and unitary patents. It was supposed to consist of a court of first instance with local and central divisions and a court of appeal and a registry, which would guarantee full compliance with EU law. The negotiations led to a series of draft agreements aimed at conforming with the CJEU Opinion.[261] Although the proposals reached a general consensus, there was no final agreement on the text. Rather, its adoption was linked with the adoption of the Regulations on unitary patent protection and translation arrangements as part of a larger 'patent package'. For the purposes of the present analysis it is to be highlighted that the content and results of the negotiations concerning the proposals debated between May 2011 and October 2012 were published only in part. The patent community has strongly criticised this lack of transparency of more than 12 months of secret negotiations.[262] It has been stressed that between November 2011 and September 2012 all requests for documentation regarding the patent package that were addressed to the Council and the Commission were rejected.[263] Moreover, it was the Council and the Commission, in the first place, who explicitly stated that it would be preferable that disputes and contradictory discussions on legal issues concerning the patent package should not reach the public, but rather find a solution internally.[264] As a consequence, it is legitimate to doubt that at this stage, the requests and concerns of the users of the system have actually reached the ears of the drafters, even when voiced by larger associations with members representing both large multinational associations and SMEs such as the European Patent Lawyers Association (EPLAW).[265] It is therefore evident that the influence

[258] Proposal of the Commission for a Regulation of the European Parliament and of the Council implementing enhanced cooperation in the area of the creation of unitary patent protection" COM(2011) 215 final.
[259] Proposal of the Commission for a Council Regulation implementing enhanced cooperation in the area of the creation of unitary patent protection with regard to the applicable translation arrangements" COM(2011) 216 final.
[260] Council Document 10630/11 of 26 May 2011.
[261] See in this regard Council Document 11533/11 of 14 June 2011; Council Document 13751/11 of September 2011; Council Document 18239/11, not published; Document 10059/11 of 24 May 2012; Document 14750/11 of 12 October 2012.
[262] See in this regard Jochen Pagenberg, 'Unitary Patent and Unified Court — What Lies Ahead?' (2013) 8 Journal of Intellectual Property Law & Practice 480-485.
[263] For a referral to the rejections see IPKat Blog http://ipkitten.blogspot.com/2011/09/ipkat-threatens-european-andjudicial.html (accessed 20 May 2020).
[264] See Council Document 6051/12 of 2 March 2012, p. 6.
[265] For example, on 27 September 2011, the EPLAW stressed that the Unified Patent Court proposal would have a negative rather than a positive economic impact on users, in particular for SMEs. The main concerns related in particular to the inexperience of local divisions, court fees and the transitional period. For more details see 'EPLAW Resolution on the Draft Agreement 13751/11 of September 2, 2011' available at https://www.bardehle.com/it/ip-

of SMEs (and start-up) interests over the debate on the last drafts of agreements has been minimal if not completely inexistent.

d) The Approval of the Agreement on the Patent Package

Once that the question of the seat of the Court of First Instance was resolved by agreeing on the Central Division in Paris, with two other sections in London and in Munich, respectively,[266] the negotiations accelerated and in its plenary session of 11 December 2012 the European Parliament with three Resolutions,[267] finally approved of the following instruments:

- A Regulation of the European Parliament and of the Council implementing enhanced cooperation in relation to the creation of unitary patent protection;
- A Council Regulation implementing enhanced cooperation in relation to the creation of unitary patent protection with regard to the applicable translation arrangements;
- The establishment of a jurisdictional system for patent disputes based on an international agreement.

Also, in relation to this phase, the minutes of the parliamentary debates occurred throughout the different stages of the drafting of the documents demonstrate that the participants to the discussions were representatives of political groups, representative of the European Commission, lawyers, presiding judges, representatives of the industry and the President of the European Patent Office.[268] In contrast, there is no evidence that SMEs or start-ups participated in the debates. Their views and interests were at best addressed and taken into account only indirectly by other representatives. Some evaluated the newly envisaged system positively as regards the interests of start-ups and SMEs, arguing that a strong, functioning and cost-effective patent system is a key economic tool, indispensable for companies to stimulate more R&D, and

news-conoscenza/ip-news/dettagli-news/eplaw-on-draft-agreement-for-a-unified-patent-court.html (accessed 22 May 2020).

[266] See Council Document EUCO 76/12 of 29 June 2012.

[267] European Parliament Legislative Resolution of 11 December 2012 on the Proposal for a Regulation of the European Parliament and of the Council Implementing Enhanced Cooperation in the Area of the Creation of a Unitary Patent Protection, COM (2011) 0215-C7-0099/2011-2011/0093 (COD); European Parliament Legislative Resolution of 11 December 2012 on the Proposal for a Regulation of the European Parliament and of the Council Implementing Enhanced Cooperation in the Area of the Creation of a Unitary Patent Protection with regard to Translation Arrangements, COM (2011) 0216-C7-0145/2011-2011/0094 (CNS); European Patent Legislative Resolution of 11 December 2012 on Jurisdictional System for Patent Disputes, 2011/2176 (INI).

[268] The minutes of the parliamentary discussions from the debate on the proposal for a Council Decision authorising enhanced cooperation in the area of the creation of unitary patent protection on 26 January 2011 to the debate on the creation of a unitary patent and a court system for patent disputes within the Plenary meeting of the European Parliament on 11 December 2012 are reported in Ingve B. Stjerna, *The Parliamentary History of the European 'Unitary Patent' – Verbatim protocol of selected meetings in the European Parliament and its Legal Affairs Committee* (Tredition, 2015). An analysis of the minutes shows that the majority were representatives of the EPP group, S&D group, ALDE group, EFD group; Pierre Véron and Stephen Jones as lawyers; Thomas Kühnen as presiding judge of the Higher Regional Court Düsseldorf and representatives of Business Europe.

that a number of support measures have been introduced for SMEs, such as a compensation of translation costs and an envisaged principle of good faith with regards to patent infringement. Furthermore, it is highlighted that access to patents for SMEs will be facilitated and that the system will bring about an efficient patent protection for SMEs, by lowering costs and facilitating proceedings.[269] In contrast, other representatives stressed that it would be hard to ensure that such system would avoid increasing costs and legal uncertainty, especially for SMEs, and that due to its complexity, large companies are favoured over smaller ones and that the system is everything but cheap and accessible for SMEs.[270] Also in this context, therefore, the position and implications for SMEs have been reported only indirectly and it is unlikely that any group has exerted a particular strong pressure and influence for the safeguard of their interests.

After the adoption of the so-called 'unitary patent package' and particularly after the signature of the UPCA in February 2013, a Preparatory Committee has been established in March 2013, whose members are representatives of all the signatory States of the UPCA, organized in form of a Chair, a Secretariat, Working Groups and Advisory Bodies and whose function was to prepare the practical arrangements for the coming into operation of the system.[271] In particular, the Legal Working Group has been in charge of drafting the Rules of Procedure of the UPC. This Group is composed by expert patent lawyers and judges[272] who have worked on several drafts of the Rules up to the current final version.[273] The drafting process included also written consultations in which law firms, patent attorneys, judges, organisations and enterprises could express their responses in relation to the appropriateness of the Rules and their likely impact on society. Even if the consultations were open to the public, there has been no specific intervention from representatives of start-ups and SMEs during the negotiations and drafting process.[274]

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[269] See Ingve B. Stjerna, *The Parliamentary History of the European 'Unitary Patent' – Verbatim protocol of selected meetings in the European Parliament and its Legal Affairs Committee* (Tredition, 2015) 116, 125, 213, 218, 230 respectively.

[270] Ibid. 102, 221, 223 respectively.

[271] The Working Groups are meant to deliver proposals to the Committee, which will discuss and agree on them after having received the input of the users through public consultations and hearings and deal with legal, financial issues (e.g. the implementation of the Rules of Procedure of the UPC, the budget of the Court and level of fees), IT issues, Human resources and facilities.

[272] Namely, Kevin Mooney, Sir Christopher Floyd, Pierre Veron, Alice Pezard, Winfried Tilmann, Klaus Grabinski, Willem Hoying.

[273] The working documents and composition of the Preparatory Committee are available at https://www.unified-patent-court.org/ (accessed 15 May 2019). The final Rules of Procedure of the UPC, changing the previous 18th draft, have been adopted by the UPC's Administrative Committee on 8 July 2022 and entered into force on 1 September 2022. The final RoP are available at https://www.unified-patent-court.org/sites/default/files/upc_documents/rop_en_25_july_2022_final_consolidated_published_on_website.pdf (accessed on 10 December 2022).

[274] The groups who responded to the consultations were mainly representatives of the lawyers and patent attorneys community (such as AIPLA; AIPPI; LES International; CIPA; EPLAW; FICPI) and of the big industries (such as Industry Coalition, Google, Business Europe; Ericsson). By way of example see the Response to the Public Consultation on the Rules of Procedure of the UPC – Digest 16th version, available at https://www.unified-patent-court.org/sites/default/files/rop-digest.pdf (accessed 20 May 2019) and the minutes of the Oral Hearing on the Rules

6. SMEs and Start-ups in the final text of the UPC Agreement and Regulations

Despite the minimal – if not absent – contribution that start-ups had during negotiations and during the drafting process, it is now relevant to explore if and to what extent they have been actually taken into account in the resulting final texts.

As a result of the influences and discussions occurred during the legislative process, in the final text of the Regulations and of the UPC Agreement and related Rules of Procedure, an explicit referral to small and medium-sized enterprises is made only in relation to the financial provisions and to the claim that they are the main beneficiaries and addressees of the system. In particular, the Recital 19 and Article 12 of the Regulation (EU) 1257/2012 stress that the level of renewal fees should be set taking into account the situation of these entities, by allowing for example lower fees, in order to foster innovation and competitiveness of European businesses. Along the same lines, according to Article 36 UPCA, Court fees shall also be set at a level which takes into account the principle of fair access to justice especially for small and medium-sized enterprises, which could equally be beneficiaries of special support measures. No explicit referral is instead included in the Rules of Procedure. Furthermore, both the UPCA in its Considerandum as well as the fifth Recital of the Regulation (EU) No 1260/2012 highlight the envisaged benefits for SMEs. The former, because a Unified Patent Court is expected to overcome the 'fragmented market for patents and the significant variations between national court systems', which are deemed to be detrimental for the innovation of SMEs; the latter, due to the fact that the translation arrangements would help to ensure legal certainty and innovation of small and medium-sized enterprises.

7. Conclusion

From the historical overview, it is therefore possible to retrieve that, from the early stages when the main concern of representatives of governments and heads of patent offices was to establish a European patent system in order to foster the growth of national industries after the Second World War, the attention slightly started to turn to small and medium-sized enterprises in 1975. In fact, it is only during the discussions aimed at the implementation of the Community Patent Convention of 1975 that the concern on the possible effects on SMEs arose, together with the need to find a legal basis for the implementation of a unified system of protection. The impact on these entities, in its potentially positive and negative dimensions, further appeared in several proposals during the legislative process, in particular from the 2000 Proposal onwards. Further

of Procedure held on 2th November 2014 in Trier, Germany, available at http://www.upc.documents.eu.com/PDFs/2014-10-31_Agreement_UPC_DE-EN-FR_and_Rules_Procedure_UPC_DE-EN-FR_Draft_17_and_Trier_hearing.pdf (accessed 5 June 2019). Only the organisations that had already participated in the written consultations were invited. However, transparency was ensured by allowing the interested users to follow the hearing via webcast.

on, the impact on SMEs has been presented as one of the main objectives and points of discussion at the final stage of the development that resulted in the unitary patent package.

The analysis shows that the groups mainly involved in the parliamentary debate and in the negotiations relating to the Rules of Procedure were representatives of the Member States and of patent offices as well as patent lawyers, judges and representatives of the big industry. These groups exerted a certain degree of influence on the formulation and legal framework of unitary patent protection. It is evident that the position and implications for SMEs have only been introduced by others and it is unlikely that any group has exerted a particular strong pressure to safeguard their interests. The absence of start-ups and SMEs is probably also due to the heterogeneity of the group and lack of expertise and interest in shaping a complex area such as patent law. This result is indeed consistent with interest groups theories and in particular with the consideration that regulation is more likely to address the needs of homogeneous and well-organised groups that are more likely to provide support and that the legislature and politicians looking for support will focus their efforts on the reform of sectors and industries where big changes could take place.[275] Therefore, even if the influence of the unitary system on these market players has been subject of concern and debate, it merely resulted in the addition of few financial provisions rather than in rethinking the overall design of the system. Therefore, if as testified by the early stages of the patent unification movement, its overarching aim is to enhance integration and the working of the internal market, it is legitimate to question to what extent the achievement of this objective matches at the same time also the needs and interests of start-ups. Furthermore, it is not clear to what extent the pressure exerted by the groups which have played an important role in shaping the design of the system would affect the welfare of other groups such as start-ups in particular.

In order to understand this, it is important to explore to what extent would start-ups need a unitary system of patent protection and what could be their needs, interests and expectations towards such a system.

III. Start-ups and their Potential Need of a Unitary Patent System

The preceding analysis shows that patents and the patent system may only play a limited role among all the other factors that have an influence on the innovation of start-ups. Consequently, also the changes that occur within that system may have little or no impact on these market players and this could to a certain extent justify the lack of their presence and influence during the legislative process. Nevertheless, this does not mean that, to a certain extent, they will not benefit from, or be potentially affected by, the implementation of a system of unitary patent protection. This system can indeed have some beneficial effect on the identified factors that

[275] See above Section C. I. 2.

constitute the reasons for start-ups to patent and on their main interests of growth. In particular, some of the main strategical advantages and expectations that start-ups could take into consideration are presented hereinafter. An extensive analysis of each single factor goes beyond the scope of the present research. On the contrary, the different aspects are presented with the aim to better contextualise the potential strategical opportunities and choices and individuate which characteristics of the envisaged system may have a greater influence on the development of their innovation activities. The Section concludes that due to the relevance that it may have in relation to all the considered factors, it is more appropriate to concentrate the analysis on the main features of the system of patent litigation.

1. Strategical Considerations and Potential Expectations

First, the broader coverage of protection of patents and the possibility of being enforced centrally could increase the opportunities for an early-stage business to expand at international level.

Secondly, the wider geographical scope of protection may well play a role in increasing the value of the asset, which could in turn have a positive effect on its signalling function thereby attracting more investors, despite the uncertainties related to the role of patents as quality signals.[276]

Thirdly, the unitary effect deriving from a centralised grant would facilitate the choices at strategic level, without having to wait whether and until when the product has success in the market in order to decide in which countries to seek protection, thereby lowering at the same time also the overall administrative burden. The practical difficulty and cost of obtaining wide-ranging coverage via the national route is indeed considerable, which is one of the reasons why the EPO has become so successful.

[276] See above Section B. IV. 1. b). In this regard it is moreover important to note that patent valuation is a highly debated and controversial topic. IP valuation methods have often been criticised for their lack of uniformity and for the fact that each method will produce different results. The three most common valuation methods are the income approach, the market approach and the cost approach. The first relates to the potential of the future income stream of the patent. The second uses a market comparable approach, which is however rarely used because of the difficulties in finding data on patent licences and sales. The third values an asset based on what it would cost to replace it. The rationale behind this method is that that the investor would pay no more to purchase the asset than what she would be paid to reproduce the asset. For literature in this regard see, among others, Donald Martin, 'Intellectual Property Valuation Techniques' (2006) The Licensing Journal 1-7; John Sykes and Kelvin King, *Valuation and Exploitation of Intellectual Property and Intangible Assets* (2004) 37; Harald Wirtz, 'Valuation of Intellectual Property: A Review of Approaches and Methods' (2012) 7(9) International Journal of Business and Management 40, 42; Gordon Smith, *Intellectual Property: Valuation, Exploitation and Infringement Damages* (2005) 183. Due to the uncertainty related to patent valuation, the analysis of the implications deriving from the ownership of a potentially more valuable but still not existent asset, i.e. the unitary patent, cannot be carried out within the scope of the present research. This would indeed require a thorough understanding of the application of patent valuation methods as well as the use of data that are currently not available.

Fourthly, a uniform regulation on the use of the patent as an object of property could facilitate the use of the patent as an asset to transfer.[277] However, while the EU legislature has regulated in more detail the uses of all Union titles as objects of property,[278] it refrained from adopting uniform rules on the proprietary aspects of the EPUE. The mere referral to national law as the law applicable to the patent as an object of property as provided for in Article 7 Reg. 1257/2012[279] increases the uncertainty for the users, thereby failing to reach the objective of providing for a set of uniform EU rules for the EPUE.[280] Uncertainty in particular results from two main aspects. On the one hand, the referral to the residence or principal place of business as a connecting factor for the individuation of the applicable national law may create confusion since the applicant's place of business may be unknown to interested persons. In this regard, the information contained in the register will have considerable importance.[281] Furthermore, it is also controversial what could qualify as 'principal place of business'. Indeed, this may relate to the registered office or to local agents and it is also questionable which place of business should be taken into consideration in the case in which there are multiple places of business within the EU. On the other hand, and most importantly, the national laws of the Member States differ in respect of how they deal with the patent as an object of property.[282] This will have several implications in relation to the transfer of the patent by way of assignment or other succession in title, but also in relation to its use as a collateral or to its use as a levy in execution, its subjection to bankruptcy and the nature and effects of licensing.[283] A more complete uniform regulation of certain property aspects of the EPUE, as Ullrich proposes,[284] would have, even if only indirectly, some potential beneficial practical effect for start-ups. By way of example, in the cases of mergers

[277] An extensive analysis of the implications of the uses of the patent as an object of property goes beyond the scope of the present research. Some critical remarks are provided only with the aim of better understanding the implications of this potential strategic factor.

[278] Arts 22-28 Regulation (EC) 2100/94 of the Council of 27 July 1994 on Community Plant Variety Protection, [1994] OJ L227/1; Art. 19 - 29 Regulation (EU) 2017/1001 of the Council of14 June 2017 on the European Union Trade Mark [2017] OJ L15/1; Arts 27-34 Regulation (EC) 6/2002 of the Council of 12 December 2001 on the Community Design, [2002] OJ L3/1.

[279] Under Art. 7(1) EPUE Reg, the main connecting factor for the applicable national law is the residence or the principal place of business of the patent applicant. According to Art. 7(3) EPUE Reg. in case the patent applicant has no residence or place of business in an enhanced cooperation State, the law of the place applies, where the EPO has its headquarters pursuant to Art. 6(1) EPC, i.e. German law.

[280] Hanns Ullrich, 'The Property Aspects of the European Patent with Unitary Effect', Max Planck Institute for Intellectual Property and Competition Law Research Paper No 13-17 (2013) 11.

[281] The issue however may have not particular relevance, due to the fact that about 60% of all patent applications originate from outside EPO Contracting States and therefore German law will apply in the majority of the cases.

[282] See the different rules of Arts L 613-8 et seq. French Code de la propriété intellectuelle, Sections 30, 33 UK Patents Act, § 15 German Patentgesetz, and as to the implementation for instance under German law Elke Ullmann, in Georg Benkard, *Patentgesetz* (10th edn, C.H. Beck, 2006) § 15 paras 2 et passim (transfer), 42 (rights in rem), 43 et passim (levy in execution), 56 et passim (licences)); for the UK see William Cornish, David Llewelyn and Tanya Aplin, *Intellectual Property* (Sweet and Maxwell, 2010) sub. 7-15 et passim; for France Michel Vivant and Jean-Louis Navarro, *Code de la propriété intellectuelle* (Lexisi Nexis 2011) comments on Art. L 613-8, L 613-9.

[284] Hanns Ullrich, 'The Property Aspects of the European Patent with Unitary Effect', Max Planck Institute for Intellectual Property and Competition Law Research Paper No 13-17 (2013) 16.

transactions, a clearer uniform regulation would enhance legal certainty thereby creating a more favorable legal framework in which the merging entity could operate and consequently facilitating the merger of the start-up company. However, it is important to note that the extent at which a more uniform regulation would foster and increase the likelihood of completing a successful merger depends, at a practical level, on the degree of awareness and attention that the merging entity would reserve to the law applicable to the patent as object of the transfer. Indeed, if on one hand more certainty as regards the applicable law would be beneficial, on the other hand it is unlikely that it will result in a direct considerable increase of mergers and acquisitions of start-ups, since these also depend on many additional factors that go beyond the wording of the law. Nevertheless, although the European legislature failed to provide sufficiently uniform regulation, the envisaged legal framework still provides for more uniformity than the currently more fragmented system, thereby facilitating the use of the patent as an asset.

2. Some Critical Observations on Strategical Aspects and Conclusion

However, the fact that many of the factors that incentivize start-ups to patent may register some improvements, it does not mean *per se* that start-ups would need a unified system of patent protection and that this system meets their interests. Indeed, if the main advantages of EPUEs derive from their broader geographical coverage and from the ability to enforce them centrally, these options are to a certain extent already available also within the current system. Indeed, the geographical coverage could also be achieved through multiple national filings or validations. In addition, when it comes to the possible need of a pan-European enforcement, it must be stressed that, already under the current system, in many cases obtaining a decision from German courts would be sufficient to set the direction of the case-law and to deter further infringements or lawsuits. In this regard it is in fact also relevant to highlight that parallel litigation in multiple jurisdictions does not occur that often.[285]

In addition, in order to understand which feature of the system may be more relevant for the influence on the innovation of those businesses, it is important to note that all the positive potential that the patent system can provide to the innovation of start-ups gets affected by the risk of becoming targets of a lawsuit. Indeed, both investors and acquirers are reluctant to put their resources in a business that risks getting bankrupt.[286] Similarly, also in the context of

[285] See in this regard the study of Katrin Cremers, Max Ernicke, Fabian Gässler et al., 'Patent Litigation in Europe' (2017) 44(1) Eur. J. Law Econ. 1, 31. The authors compare patent litigation cases across Germany, the UK, France and the Netherlands, using data from cases filed during the period 2000-2008. They find that the share of cases which are litigated in multiple jurisdictions is modest. They stress that the core problem is that, among these few cases, only a small share shows consistent outcomes among the jurisdictions in which they are litigated. Indeed, they find that only 28,6% of cases litigated both in Germany and the UK have the same outcome. And the percentage is of only 22,7% when considering cases litigated both in Germany and the Netherlands.

[286] See in this regard Stephen Kiebzak, Greg Rafert, Catherine E. Tucker, 'The Effect of Patent Litigation and Patent Assertion Entities on Entrepreneurial Activity' (2016) 45 Research Policy 218-131; Robin Feldman, 'Patent Demands

contractual negotiations, the stronger negotiation leverage that a start-up may have obtained thanks to the potential higher value of a unitary patent when compared to a national or European patent, may well be severely affected if that patent is the object of a lawsuit.

These concerns and the importance of start-ups for innovation require to analyse the reforms of the patent system in light of their distinct needs and vulnerabilities. They are indeed at great disadvantage when patent processes are slow, costly and require high patent expertise. Thus, the features of a system of patent enforcement can play an important role in either fostering their potential or making them more vulnerable to the action of incumbents who are threatened by their success as well as to nugatory patent claims brought by so-called patent trolls. Hence, in order to explore to what extent, the design of a new unitary system of patent protection can influence the innovation of start-ups, it is more appropriate to analyse the design and the main features of the patent litigation system. For these reasons, the subsequent Chapter will analyse more in depth some specific features of the design of the Unified Patent Court (UPC), which can have particular implications for start-ups as potential plaintiffs and defendants.

and Start-ups Companies: The View from the Venture Capital Community' (2014) 16 Yale Journal for Law and Technology 237-284.

Chapter 2 – Balances and Imbalances in the UPC System – Implications for Start-ups

The present Chapter explores to what extent the Unified Patent Court litigation system safeguards the interests of start-ups which may be involved in litigation as potential patentees and as potential non-patentees in comparison to the current system of national courts. To understand whether the system implements an appropriate balance of interests of all the parties involved and to understand which could be the implications for start-ups, Section A presents at first the different types of actions and strategical instruments that are available to the parties in both the current and new system. This serves not only the purpose of providing an overview of the available tools for litigation but also of setting the framework for the subsequent analysis. Section B analyses to what extent provisions of the Unified Patent Court Agreement (hereinafter 'UPCA') on jurisdiction respond to the interests of start-ups to litigate close to their domicile or place of activity. To this aim it analyses in which cases the envisaged UPC system departs from the principles enshrined in the Brussels Ia Regulation (hereinafter 'BR') and which consequences the found misalignment may cause for start-ups. Furthermore, considering that the extent of coverage of a court decision is a matter that can have various implications, in particular for start-ups, Section C undertakes an analysis of Article 34 UPCA and compares it to the jurisdiction of national courts. In addition, in the context of this analysis, Section C explores how certain types of decisions whose consequences may well be particularly relevant for start-ups, are taken and whether the respective provisions strike a proper balance of the interests of the parties involved. Further on, Section D and E compare the costs of litigation and analyse the opportunities offered by alternative dispute resolution methods, respectively.

The present Chapter therefore answers the following question and related sub-questions.

1. What are the implications of the establishment of the UPC for start-ups in the role of plaintiffs and defendants? Does the establishment of the UPC strike an appropriate balance of the interests involved?

    a) Which types of actions are available for start-ups as plaintiffs and defendants in comparison to the current litigation framework?
    b) Would litigation occur farther from the place of domicile in comparison to the current litigation framework?
    c) What would be the implications of the territorial scope of UPC decisions for the innovation of start-ups?
    d) To what extent would litigation before the UPC be more expensive than litigation before national courts?

e) To what extent could alternative dispute resolution methods represent a useful tool for start-ups?

The present analysis goes beyond the current state of the literature. Although recent studies have addressed the implications of jurisdiction strategies before national courts and before the UPC,[287] the present dissertation overcomes some of their limitations.[288] In fact, it addresses also the jurisdictional rules concerning actions on validity, on declaration of non-infringement and on permanent injunctions and *lis pendens* situations. Moreover, the present Chapter connects the analysis of the implications concerning the extent of jurisdiction to the analysis of the rules and principles that regulate how the specific decisions are taken. This is so because the basis upon which certain decisions are taken can play an important role in providing for an appropriate balance of the interests involved and in mitigating the potential negative consequences deriving from an extended territorial scope of jurisdiction. In this regard, the study goes beyond the available literature on the matter[289] to the extent that it takes into account the most recent legislative developments. In addition, the present Chapter overall advances the state of the currently available literature to the extent that each single feature is analysed in light of the implications it may have for the innovation of start-ups.

[287] Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar, 2017), who specifically takes into account also the jurisdiction rules of the UPC. For further legal literature on jurisdiction rules see, among others, Annette Kur, 'Jurisdiction and Enforcement of Foreign Judgments – The General Structure of the MPI Proposal' in Josef Drexl and Annette Kur (eds), *Intellectual Property and Private International Law, Heading for the Future,* IIC Studies vol, 24 (Hart Publishing, 2005) 21-34; Marcus Norrgard, 'Provisional Measures and Multiple Defendants in the MPI Proposal' in Josef Drexl and Annette Kur (eds), *Intellectual Property and Private International Law, Heading for the Future,* IIC Studies vol, 24 (Hart Publishing, 2005) 35-54; Alexander Peukert, 'Contractual Jurisdiction clauses and Intellectual Property' in Josef Drexl and Annette Kur (eds), *Intellectual Property and Private International Law, Heading for the Future,* IIC Studies vol, 24 (Hart Publishing, 2005) 55-86; Jan Willems, 'The EPLA Project and the Forthcoming Community Patent System – A Model for IP in General?' in Josef Drexl and Annette Kur (eds), *Intellectual Property and Private International Law, Heading for the Future,* IIC Studies vol, 24 (Hart Publishing, 2005) 87-100; Stefan Luginbhuehl, 'The Relationship Between Regional (Patent) Judiciary Systems in Europe and International Conventions – Smooth Coexistence or Confusion?' in Josef Drexl and Annette Kur (eds), *Intellectual Property and Private International Law, Heading for the Future,* IIC Studies vol. 24 (Hart Publishing, 2005) 101-128; James J. Fawcett and Paul Torremans, *Intellectual Property and Private International Law* (OUP 2011) 3 – 661.

[288] For the specific limitations of the study concerning also the UPC jurisdiction rules see, Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar, 2017) 17-21.

[289] See among others, Stefan Enchelmaier, 'A Competition Law Perspective I: Competition Law Aspects of European Patents with Unitary Effect' in Justine Pila and Christopher Wadlow (eds), *The Unitary EU Patent System* (Hart Publishing, 2015) 111–128; Mark Marfé, Alexander Reetz, Camille Pecnard et al., 'The Power of National Courts and the Unified Patent Court to Grant Injunctions: A Comparative Study' (2015) *Journal of* Intellectual Property Law and Practice 180, 181; Peter Meier-Beck, 'Bifurkation und Trennung – Überlegungen zum Übereinkommen über ein Einheitliches Patentgericht und zur Zukunft des Trennungsprinzips in Deutschland' (2015) GRUR 929, 929–936.

A. Available Types of Actions within the UPC and Implications for Start-ups

To understand the implications of the establishment of a Unified Patent Court for start-ups, it is at first instructive to explore which tools this forum could offer for a start-up patentee or non-patentee. In other words, it is relevant to explain which types of actions are available for litigation, in comparison to the current framework. To this aim, the present Section compares the actions and instruments available under the UPC and the ones available in selected Member States, namely, Germany, France and United Kingdom. Throughout the analysis, for explanation purposes, the distinction between patentees (plaintiffs) and non-patentees (defendants) is used. Although patentees are not always plaintiffs and defendants are not always non-patentees, this may occur in the great part of the cases. For the circumstances in which the situation may well often be different (e.g. in the case of negative declaratory actions), a distinction is made. The analysis will both serve the purpose of understanding whether the new envisaged system strikes a proper balance between the interest of start-ups as patentees and non-patentees and also sets the bases for the subsequent analysis in Section B and C.

Article 32 UPCA provides that the UPC has exclusive competence in relation to specific actions, whose main characteristics will be explained and analysed hereinafter.[290] This provision establishes the Court's subject-matter jurisdiction and delimits it from the jurisdiction of the national courts of the contracting Member States (in the following 'CMSs'). The list provided in Article 32 is exhaustive as confirmed by its paragraph 2, which stipulates that the national courts of the CMSs remain competent for actions relating to patents which do not fall within the exclusive competence of the UPC.[291]

1. Types of Actions for Claimants (Patentees) within the UPC

a) Actions for Actual or Threatened Infringement of Patents and SPCs (Article 32(1)(a) UPCA)

The UPC has competence in relation to actions for actual and threatened infringement of patents and SPCs and for 'related defences including objections concerning licences'. An actual infringement of a patent occurs when the contested embodiment fulfils all the features of the patented invention at hand in either a literal or equivalent form,[292] when the allegedly infringing act falls under the right of the patent proprietor to prevent it according to Articles 25 and 26

[290] The meaning of the concept of exclusive competence will be better clarified and analysed in Section B below in relation to the internal competence and international jurisdiction. In short, the subject-matter competence established by Art 32 UPCA has to be distinguished from the allocation of internal competence set in Art 33 UPCA, which determines which division of the UPC is to decide a case and from the international jurisdiction as set in Art 31.

[291] Pieter Callens and Sam Granata, *The Unitary Patent and the Unified Patent Court* (Wolters Kluwer 2017) 150.

[292] This has to be decided on the basis of the EPC Rules and related practice and in particular Art 69 EPC and the Protocol on Art 69.

UPCA and Articles 5(3) and 7 EPUE Reg., when it is neither subject to the limitations set in Article 27 UPCA and Articles 5(3) and 7 EPUE Reg. nor to exhaustion pursuant to Article 6 EPUE Reg. and Article 29 UPCA. An infringement is only threatened when there are circumstances that show that the defendant is about to commit an infringement. In relation to those acts, both actual and threatened, the UPC has jurisdiction also for the related defences, such as those arising from competition law,[293] excluding however the non-validity of a patent, which can only be claimed as counterclaim for revocation or an action for revocation pursuant to Article 32(1)(e) and (d) UPCA and Article 33(3) UPCA. Some further specified cases are for example the objection of a right of use on the basis of a licence, the right based on prior use or another unspecified example could be the right to the invention as recognized in Article 60 EPC.

b) Actions for Provisional and Protective Measures and Preliminary Injunctions (Article 32(1)(c) UPCA)

On the basis of Articles 32(1)(c) and 62 UPCA, the UPC may grant injunctions on a provisional basis against an alleged patent infringement or in order to prevent a imminent patent infringement, subject to a penalty payment in case of the continuation of the alleged patent infringement (Article 62(1) UPCA). The Court can also order the seizure or delivery of the products which are suspected of infringing a patent (Article 62(3) UPCA). Said measures will be granted by the UPC only upon application which includes sufficient evidence that the applicant's right has been or is about to be infringed.

c) Actions for Damages or Compensation Derived from Provisional Protection conferred by a Published European Patent Application (Article 32(1)(f) UPCA)

Pursuant to Articles 32(1)(a) and 68 UPCA the Court can order the infringer of a patent to pay damages. But under Article 32(1)(f) UPCA, the Court is also competent for action 'for damages or compensation derived from the provisional protection occurring after a published European patent application'. This case, however, does not concern unitary patent protection yet, since, prior to the grant of the European patent, it is still not clear whether the European patent will be registered for unitary patent protection. In this case, therefore, the UPC on the basis of Article 24(1)(c) UPCA has to apply Article 67 EPC.[294]

[293] The extent at which the UPC will have competence and decide for example in relation to FRAND objections, is a debated issue. See in this regard Mark Marfé, Alexander Reetz, Camille Pecnard et al., 'The Power of National Courts and the Unified Patent Court to Grant Injunctions: A Comparative Study' (2015) Journal of Intellectual Property Law and Practice 180—189.

[294] Art 67 EPC provides for protection according to Art 64 EPC (damages), but also allows the Contracting States for a limited scope for variation to the lower limit of adequate compensation (Art 67(2) EPC).

2. Types of Actions for Defendants (Non-Patentees) within the UPC

a) Actions for Declaration of Non-Infringement (Article 32(1)(b) UPCA)

Parties confronted with allegations of a patent infringement have the possibility to file an action in order to obtain a declaration of non-infringement before the UPC. However, in order to have the entitlement to lodge an action against the patent proprietor or licensee to obtain a declaration of non-infringement, they need to demonstrate a specific legitimate interest. The conditions to obtain that legal relief are set, in a non-exhaustive list, under Rule 61.1 UPCARoP, including either an allegation from the patent proprietor or licensee that the act constitutes an infringement or a request for the patent proprietor or licensee to provide for a written confirmation of non-infringement and subsequent non-receipt of that confirmation within one month. The burden of proof to show that such conditions are satisfied falls upon the plaintiff of the declaratory action.

Furthermore, when it comes to the relationship with an action for infringement, Article 33(6) UPCA explicitly shows that the declaratory action for non-infringement does not prevent the patent holder from bringing an infringement action. More specifically, Article 33(6) provides that the central division will have to stay the action for negative declaration, if an action for infringement is filed before a local or regional division within three months of the date in which the previous action was brought before the central division. As such, the alleged infringer can therefore not impose her decision to litigate before the central division to the patent proprietor or licensee.

Moreover, in this regard, it must be noted that an action of declaration of non-infringement could be filed before the court of an EU Member State that is not part of the UPCA (non-CMS), such as Spain for example, which would then impede an action before the UPC (torpedo effect). Indeed, in such situation, the UPC seized with a later infringement action for the identical part of that patent would have to stay the proceedings[295] pursuant to Article 29 BR. Article 29 BR will also apply during the transitional period (Article 83 UPCA) with regard to an action for a declaration of non-infringement which is pending before a court of a non-CMS and a subsequent action for infringement concerning an EP before a national court of a CMS according to Article 83(1) UPCA.[296]

[295] Cfr Landgericht Düsseldorf (1998) GRUR Int. 803, 804 – *Impfstoff*; Klaus Grabinski and Carsten Zülch in Georg Benkard (ed), *Patentgesetz* (11th edn, C.H.Beck 2015) § 139 para 101e.

[296] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018), p. 613.

b) Actions for Revocation of Patents and for Declaration of Invalidity of related SPCs (Article 32(1)(d) UPCA)

According to Articles 32(1)(d) and (e) and 65 UPCA, the UPC decides on the validity of a patent when an action for revocation or a counterclaim for revocation has been filed. Pursuant to Article 33(4) UPCA actions for revocation shall be brought before the central division. Nevertheless, if an action for infringement has been brought before a local or regional division, the actions for revocation may be brought only before the same local or regional division.[297] In that latter case, the patentee is therefore somehow favoured by then having the possibility to attract the entire dispute before the local or regional division of her choice. The UPC has the power to revoke, with retroactive effect, partly or entirely a patent only on the grounds of revocation of Articles 138(1) and 139(2) EPC. After the final decision, the UPC will have to notify the EPO about the revocation of an EP or EPUE and the national patent offices about the revocation of classical EPs.

c) Counterclaim for Revocation of Patent and for Declaration of Invalidity of Related SPCs (lit e)

As stated above, for counterclaims for revocation against actions for infringement, the division before which the infringement action has been filed, is competent. If the defendant in infringement proceedings wants to defend herself on the basis of the patent invalidity, she will have to bring a counterclaim for revocation, not merely an objection of invalidity. In that event, the UPC can decide to proceed according to the options established in Article 33(3) UPCA.[298]

d) Actions Relating to the Use of the Invention Prior to the Granting of the Patent or to the Right based on Prior Use of the Invention (Article 32(1)(g) UPCA)

Pursuant to Article 28 UPCA any person that would have had a right based on prior use of that specific invention under national patent law in an individual CMS shall enjoy in that CMS the same rights in relation to an EP or EPUE for that invention. Considering that the UPCA therefore incorporates a decision of national law by reference, it is evident that for start-ups in litigation there is from this point of view no particular difference to the current situation, neither in relation to the type of available actions, nor to its intrinsic characteristics. To achieve this goal, Article 32(1)(g) UPCA enables a start-up as a prior user of the patent to bring a declaratory action of the right of prior use.

[297] Art 33(4) UPCA.

[298] A detailed analysis is provided under Section B below.

e) Actions for Compensation for Licences on the basis of Article 8 EPUE Reg. (Article 32(1)(h) UPCA)

In actions pursuant to Article 32(1)(h) UPCA, the UPC will examine the right of the patent owner who has submitted a statement on licensing according to Article 8(1) EPUE Reg. and check whether the conditions of the statement are sufficient and what the amount of the licensing fee should be.[299] Pursuant to Article 8(1) EPUE Reg. the owner of a European patent with unitary effect can file a declaration with the EPO stating that, upon payment of appropriate consideration, she will allow any person to use the invention as a licensee. In this regard, Article 9(1)(c) EPUE Reg. provides that CMSs shall give the EPO the task to receive and register statements on licensing referred to in Article 8 in international standardisation bodies. From this wording, one could think that Article 32(1)(h) UPCA refers also to decisions concerning royalty rates for the use of standard essential patents for which the patent holder has committed to FRAND licensing.[300] However, considering that this is not expressly clarified in Article 32(1)(h) UPCA, the competence of the UPC for actions on the level of FRAND fees will depend on its interpretation of Article 32(1)(h) UPCA.

f) Protective Letter (Rule 207)

Any potential party, even if this may more often concern a potential future defendant and likely non-patentee, upon payment of a fee, has the possibility to file a protective letter with the Registry against an expected application for grant of a preliminary injunction (Rule 207 UPCARoP). The letter must include the names of the parties and the number of the patent and can also include facts and arguments concerning the validity or infringement of the patent (Rules 207.2 and 207.3 UPCARoP). The function of the protective letter is to prevent the grant of an order for provisional measures by the UPC. In addition, the protective letter aims at safeguarding the right of the defendant to be heard. Indeed, if a protective letter has been filed prior to the request of an order for a provisional measure, the UPC must take the letter into consideration. Pursuant to Rule 207.1 UPCARoP, the entitled person may file a protective letter only when there is a certain likelihood that an application for provisional measures may be lodged in the near future. If, then, an application for a preliminary injunction is filed, the Registry sends the protective letter to the applicant and to the competent judges. (Rule 207.8 UPCARoP). It is evident how the possibility to file a protective letter represents an important defensive tool for a potential start-up defendant who may fear a preliminary injunction.

[299] Pursuant to Art 8(1) EPUE Reg. the proprietor of a EPUE Reg. may state before the EPO that she is prepared to give a licence in return of proper consideration (so-called Licence of Rights).
[300] Massimo Scuffi, *Il Nuovo Sistema Europeo dei Brevetti. Il Tribunale Unificato e il Regolamento di Procedura* (Giuffré Editore, 2017) 82.

3. Comparative Overview of Types of Actions in Germany, France and UK: Actions for Patentees

a) Actions for Infringement

In Germany, the most common main type of action for a patentee is the infringement action, which includes as the most important remedies injunctive relief, damages, the potential removal of the products from the distribution chain and recall or destruction of the infringing products. Pursuant to Section 145 of the German Patent Act, claims that are related to 'the same or substantially identical infringing acts' but are based on different patents have to be asserted within the same action. Thus, if the same infringing act, which was already subject to prior infringement, is afterward used as the basis for another infringement action, the latter action would be declared inadmissible. The requirements of 'same' and 'substantially identical' infringing act are met only if the second claim is based on the very same features as the original action but includes also additional or different features, which are however so closely technically related to the original claim that it is evident they shall be dealt with in the same proceedings.[301] Germany has adopted a bifurcated system, and as a consequence infringement and validity proceedings are separated. Considering that the patent is presumed to be valid and that validity cannot be contested in the context of infringement proceedings, the defendant can file a separate action for revocation only before a different court, namely, the Federal Patent Court (*Bundespatentgericht*), whose decisions can be appealed before the Federal Court of Justice (*Bundesgerichtshof*). Such nullity action, which typically takes between 18 to 24 months and, hence, typically more time than infringement proceedings, is usually brought before the Federal Patent Court while the infringement action is pending. As a result, it may well happen that is the infringement court renders an enforceable decision of first instance while the validity question is still open.[302] The infringement court may stay the infringement proceedings. But it will only do so, if the likelihood of invalidity is high.[303]

Under French law, the most common type of action for patentees is also the one against past or potential future infringing acts as listed in Articles L. 613-3 and L. 613-4 of the French Intellectual Property Code (Code de la propriété intellectuelle, CPI). The burden of proof usually rests on the plaintiff, with the exception of the case in which the asserted patent relates to a process to obtain a product. In such event, it is the defendant who has to demonstrate that the process she used

[301] See in this regard Federal Court of Justice (BGH), 3 November 1988, X ZR 107/87 [1989] GRUR 187 – Kreiselegge II; Federal Court of Justice (BGH), 25 January 2011, X ZR 69/08 [2011] GRUR 411 – Raffvorhang as cited in Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (eds), *Patent Enforcement Worldwide* (Hart Publishing 2015) 111, 116.

[302] The origin, issues and implication of bifurcation in particular within the context of the UPC will be dealt with more thoroughly under Section C. The brief referral here merely serves the purpose of better contextualizing the functioning of infringement actions under the German system.

[303] Rudolf Kraßer and Christoph Ann, Patentrecht (, C.H.Beck 2016) Chapter 2 para 36. This may well occur in the case in which new and novelty destroying prior art which has not been considered before, is presented.

to obtain an identical product is different than the patented process, and this only if the patented product is new and if there is a high likelihood that the identical product was obtained by the patented process.[304] Infringement can be proven in many ways and the means most widely used to gather evidence is the *saisie contrafaçon*. Through this procedure, the patent holder, upon authorisation of a judge, is allowed to avail herself of a bailiff to report the infringement and to seize the items of evidence of the infringement.[305]

As in the other countries, in United Kingdom, the action for infringement is the most frequent action in patent cases.[306] Nevertheless, referring to United Kingdom courts is quite inaccurate because the three United Kingdom jurisdictions, England and Wales, Scotland and Northern Ireland, must be distinguished. The three jurisdictions all have their courts of first instance and first appeal, which are competent to hear patent cases. And a second appeal from all three jurisdictions goes to the UK Supreme Court, which includes judges drawn from all three jurisdictions.[307] In England and Wales, the parties can file infringement actions (and the same counts for revocation actions), before three possible first instance tribunals, two courts and a patent office. In particular, the Chancery Division of the High Court has had patent jurisdiction since 1870 and, from 1949 on, a sub-division called 'Patents Court' has been created, which now counts nine judges allocated to hear cases. In addition, litigants can file infringement actions (and also revocations and counterclaims for revocation) before the Intellectual Property Enterprise Court (IPEC), which is the successor of the Patents County Court (PCC) and was established to provide a low-cost and more simplified procedure for less complex and lower value cases.[308] Another peculiarity of the UK system, which is not present in the other analysed countries, is that, before filing an action for infringement (or also of revocation) before the national court, the parties can request the UKIPO to an opinion of a senior examiner about the infringement or validity of a UK or European patent.[309] The request can be made by paying a fee (of around 200 pounds) and providing to UKIPO relevant facts and arguments, copies of documents and evidence as well as any information concerning pending or completed UK or EPO proceedings. Such an opinion is not binding and therefore court proceedings can follow. However, it represents a clear

[304] Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed) *Patent Enforcement Worldwide* (Hart Publishing 2015) 146.
[305] For more details on the requirements and functioning of such measure see Pierre Véron (ed.), *Saise-contrefacon* (3rd edn, Dalloz Référence 2012).
[306] Between 2007 and 2013, 226 infringement and 176 revocation actions were initiated in the Patent Court. Before the IPEC the numbers were instead 72 and 10. Cfr. UKIPO, *Examining Patent Cases at the Patents Court and Intellectual Property Enterprise Court 2007-2013* (March 2015) 13.
[307] Procedural law in Northern Ireland is similar to that of England and Wales. Instead, the Scottish rules of procedure are very different in comparison and they provide for earlier judge case management and intervention. In that regard see Robert Buchan and Gill Grassie, 'Scotland's New Regime for Effective Intellectual Property Dispute Resolution' (2013) 8 Journal of Intellectual Property Law and Practice 383-387; Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 88.
[308] For the details on conducting IPEC proceedings see Angela Fox, *The Intellectual Property Enterprise Court: Practice and Procedure* (Sweet & Maxwell, 2016) 83-138.
[309] Patents Act 1977, ss 74A, 74B, as amended by the Intellectual Property Act 2014, s 16.

advantage for financially constrained businesses, since it allows to obtain an independent view on validity and/or infringement in a quick and not expensive manner.[310]

b) Customs Actions (Border Seizures)

When it comes to products imported from outside the European Union, in Germany, the patentee can request to the infringing authorities to seize infringing products which are entering, but not only transiting. This claim can be filed either on the basis of the EU Reg. No 608/2013[311] referred to in § 142b Patent Act, or pursuant to the national border procedure under Article 142a Patent Act.[312]

Under French law, the patentee can also apply for customs measures in order to stop the entry of infringing goods in France. Such measures can be requested on the basis of the EU Reg. No 608/2013 for products coming from a non-EU country or under Article L 614-32 of the CPI which covers also products coming from an EU-country.

c) Actions for Provisional and Protective Measures and Preliminary Injunctions

Under German law, the patentee can get access to evidence by filing a claim for inspection pursuant to § 140c Patent Act. In such event, the alleged infringer has to allow the claimant to inspect the potentially infringing product and present all the documents relevant for inspection. The prerequisite for a claim for inspection is a reasonable likelihood for infringement, meaning that there must be a significant possibility that the defendant uses the patented invention, but not that the infringement is certain.[313] Inspection proceedings are quite fast also considering that, even when there are not the requirements for a preliminary injunction, § 140c Patent Act allows for the use of preliminary injunction proceedings. In addition, the patentee may request a preliminary injunction. In order to obtain such relief, infringement and validity of the patent must be obvious so that it should be very rare that the main proceedings then demonstrate that the patent is not infringed or that it is not valid. To this aim, the law requires both a clear infringement and a confirmation of the patent validity after having survived opposition or nullity proceedings.[314] Furthermore, an additional requirement is the urgency, which is deemed to be fulfilled when the patentee files the request within four weeks from when she has become aware of the relevant circumstances or even after that period, when changes in the circumstances may well re-establish the urgency. These proceedings will be conducted *ex parte*, meaning that the court grants the preliminary injunction without giving the chance to the defendant to be heard,

[310] Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 92.
[311] Regulation (EU) No 608/2013 of the European Parliament and of the Council of 12 June 2013 concerning customs enforcement of intellectual property rights and repealing Council Regulation (EC) No 1383/2003 [2013] OJ L 181/15.
[312] Thomas Kühnen, *Handbuch der Patentverletzung* (7th edn, Carl Heymanns Verlag 2014) para. 530.
[313] Ibid. para. 366.
[314] Ibid. para. 2029.

if all the requirements are clearly met and there is high urgency for relief. Yet, the courts use this discretion to provide such a measure *ex parte* reluctantly and more often grant *inter partes* relief instead. When a PI is granted, the patentee must enforce it within 30 days and post a security if that is required by the decision of the court.[315]

Under French law, the patentee can also request and obtain a measure to be allowed to conduct investigations at the premises of the other party in order to gather evidence on the alleged infringement (*saisie contrefaçon*) pursuant to Article L 615-5 CPI.[316] The action can take place on the basis of a French patent or the French designation of a European patent or patent application. Such measure is authorized by the President of the *Tribunal de grand instance* (TGI) Paris in form of a court order, upon *ex parte* petition, hence without informing the defendant of such request. In short, to be granted a *saisie contrefaçon*, the applicant has to prove that she is the owner of the patent or the exclusive licensee and that the patent is in force. In addition, she has to explain to the judge the reasons why she believes that the patent is being infringed. With its order, the judge will then determine the extent of the powers of the bailiff. Once the *saise-contrafacon* has taken place, the plaintiff has to start an action on the merits within 31 calendar days or 21 working days, otherwise the measure becomes void and the plaintiff cannot use any of the gathered means of evidence.[317] Furthermore, also under French law it is possible to file a request for a preliminary injunction pursuant to Article L 615-3 CPI, although courts are to a certain extent cautious in granting them because of the risk for the patent to be found invalid or not infringed. Preliminary injunction proceedings can start either before or after the beginning of an infringement action on the merits. In most of the cases, the requested measure is a preliminary injunction, which prohibits the defendant to continue the allegedly infringing acts. But other measures can also be requested, such as the placement under seal of the allegedly infringing products and the recall of them from the distribution channels.[318] Under French law, preliminary injunctions can be granted only if the evidence is reasonably accessible to the claimant and provides high likelihood that the infringement is going to be committed.[319] In order to decide on the grant, the court has to balance the interests between the prejudice that may be caused to the patentee because of the infringement and the one caused to the defendant in the event of a preliminary injunction. This can be granted either on an *inter partes* or on an *ex parte* basis.

[315] Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 126, 127.

[316] For more details on the requirements and functioning of such measure see Pierre Véron (ed.), *Saise-contrefacon* (3rd edn, Dalloz Référence 2012); Pierre Véron, 'Patent Infringement Litigation in France' (2002) 93 Mitteilungen der deutschen Patentanwälte 386, 392; Luke McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court* (Edward Elgar 2016) 48.

[317] Cass Com, 3 June 2003, *Diffusion des ébénistes contemportains Roméo v Gélineau Xavier,* [2003] PIBD No. 774-III-557 as cited in Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 157.

[318] Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 160; Luke McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court* (Edward Elgar 2016) 51.

[319] Article L 615-3 CPI.

However, *ex parte* injunctions are granted only when otherwise there would be an irreparable harm to the patent holder.[320]

Similarly, in UK, the claimant can also request an interim injunction. Such measure was requested more often before the reforms of the English litigation system whose effect was to actually reduce the timeframe between the commencement of an action and the final judgment. Now, the shorter and simpler proceedings have limited the number of applications for those injunctions.[321] Prior to the 1975 decision of the House of Lords in *American Cyanamid v Ethicon,*[322] to such an aim, the claimant was required to demonstrate that the case was evident, a requirement which was often not fulfilled. In contrast, the new principles now require the claimant to merely show the court that the case may be well grounded. If that is the situation, the court will consider what would be the advantages and disadvantages of constraining the defendant until the moment of the trial, thereby balancing the interests of the parties. As a consequence, the outcome of an application to the court for an interim injunction will be more driven on the basis of the commercial positions of the claimant and of the defendant.[323] In any case, a condition for the grant of an interim injunction is that the claimant has to undertake that if her action is not upheld in the subsequent trial, she will compensate the defendant for the eventual damages and losses that the interim injunction may have caused and undertake to obtain a bank guarantee for such an eventuality.[324] In addition, the patentee can also request a so called 'search order',[325] of which defendants will not receive any notice until when the defendant will actually be required to admit the claimant in his premises for purposes of inspection and seizure. Based on this order, the patentee may obtain information also from answers to questions relating to sources of supply or further destination of illicit material. To obtain such an order, more strictly than in the case of an interim injunction, the claimant is, required to demonstrate that she has a *prima facie* case and that the loss is going to be relevant. Furthermore, in addition to these intrinsic characteristics, both freezing orders and search orders would include an interim injunction preventing the defendant from continuing the potentially infringing activity until a given date. In addition, other possible orders that can be requested both prior to and during the infringement proceedings are orders for inspection, for taking samples or

[320] Luke McDonagh, *European Patent Litigation in the Shadow of the Unified Patent Court* (Edward Elgar 2016) 51.
[321] Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 92. Nick Beckett and Jeremy Morton, 'United Kingdom' in Nick Becker and Jeremy Morton (eds) *CMS International Patent Litigation Guide* (CMS 2013) 95, 99.
[322] 5 February 1975 (1975) AC 396.
[323] Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 93; Nick Beckett and Jeremy Morton, 'United Kingdom' in Nick Becker and Jeremy Morton (eds) *CMS International Patent Litigation Guide* (CMS 2013) 95, 99.
[324] Ibid.
[325] Such orders are called in the practice *Anton Piller* orders, after the first case in which this order was made, namely, *Anton Piller KG v Manufacturing Process Ltd & Others,* 8 December 1975 (1975) EWCA Civ 12.

for delivery of specific items and disclosure of documents. Furthermore, such orders can be adapted to changing circumstances.[326]

4. Overview of the Types of Actions in Germany, France and UK: Actions for Non-Patentees (Defendants)

a) Protective Letter (*Schutzschrift*)

A first instrument of defence that the German litigation system offers to the patentees is to file a protective letter ('*Schutzschrift*') through which a party who wants to avoid an adverse preliminary injunction can explain to the court the factual and legal situation and the reasons why the court should not grant the injunction or at least not grant it *ex parte*. The protective letter will only be considered by the court if it has been deposited to the court. Therefore, one has to be particularly cautious when considering before which forum it is most appropriate to file it.[327] Conversely, in France and in the United Kingdom there is no possibility to file protective letters as a preventive measure to avoid and anticipate *ex parte* preliminary injunctions. Nevertheless, under French law, the party against whom an *ex parte* preliminary injunction is granted can still request the judge to revoke the order in *inter partes* proceedings.[328]

b) Actions for Declaration of Non-Infringement

Under German law, an alleged infringer can also file an action for declaration of non-infringement. Such request can be particularly strategic if there is a need for a confirmation of freedom to operate, especially in cases in which the patentee often threatens to file an action for infringement but then does not do so. According to German law and practice, for a negative declaratory action to be admissible, it is required that a patentee claims that a product is infringing the patent. It is however not required that the patentee threatens to sue.[329]

In France, non-patentees can also file an action for declaration of non-infringement, even if this rarely occurs, also due to the fact that such action is subject to the fulfillment of two requirements. First, the plaintiff must prove that she is implementing acts of exploitation, or making preparations to that effect.[330] Secondly, the claimant, before filing the action, must inform the patentee and send her the description of the relevant product or process and ask for

[326] Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 97.
[327] Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 111, 126.
[328] Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 162.
[329] Federal Court of Justice (BGH), 12 July 2011, X ZR 56/09 [2011] 995 – Besonderer Mechanismus as cited in Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 111, 117.
[330] CPI, Art L 615-9.

the patentee's opinion. The action can then be initiated only in case of a disagreement of the parties on the legal situation or after expiry of a three-month period.[331]

Similarly, in the UK, a party can also commence proceedings for a declaration that she is not infringing a patent.[332]

c) Actions for Revocation of Patents and Counterclaims for Revocation

The most common defences for patent infringement in Germany are actions for revocation filed at the Federal Patent Court (*Bundespatentgericht*) and, within a nine months' period from the grant of the patent, an opposition before the EPO or respectively the German Patent and Trade Mark Office (*Deutsches Patent- und Markenamt, DPMA*).[333] For these actions, no legitimate interest of the claimant is required. Nevertheless, in Germany, it is not possible to file an action for revocation before the national court as long as opposition or appeal proceedings are still pending before the EPO or the national office.[334]

Partially different from German law, under French law the revocation can only be requested by a third party who can demonstrate a legitimate interest in that regard. Some recent decisions have actually even raised the threshold and established that in certain circumstances the plaintiff lacked standing to sue, because she did not present her intention and ability to exploit the patent in dispute.[335] Furthermore, under French law, the plaintiff must respect a specific time limit to initiate a revocation action within five years after the date when she has become, or should have become, aware of the relevant facts.[336] Furthermore, it must be noted that in France it is not possible to file an opposition against the grant of a French patent before the French Patent Office. However, in case of opposition before the EPO against a European patent which includes a French designation, any party can request a stay of the proceedings before French courts where litigation on the respective French patent is pending until the decision of the Opposition Division

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[331] Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 152.

[332] Patents Act 1977, § 71.

[333] German Patent Act, § 59(1)(2); § 81(1).

[334] German Patent Act, § 81(2).

[335] *Cour d'appel de Paris*, 17 February 2012, *Merial v Omnipharm,* RG No 11/09940, available at www.frenchpatentcaselaw.info (accessed 10 February 2020); *Tribunal de grande instance de Paris*, 5 June 2014, *E. Bickel Maschinen Apparatebau v Newmat,* RG No 12/10282, where the action was not admissible because the plaintiff did not exercise any activity in the field of the patent.

[336] Art 2224 Code Civil: 'The right to initiate personal actions and real actions based on movable assets lapses five years after the date at which the owner of a right becomes aware or should have been aware of the facts which entitled him to do so.' This time limit is considered applicable also to revocation actions. In particular, the Tribunal de Grande instance de Paris decided that the starting point of that time limit should be decided in *concreto* and not be merely corresponding to the moment of publication of the patent application. See TGI Paris, 6 November 2014, *Raccords et Plastiques Nicoll v MEP*, [2015] PIBD No. 1020-III-43.

is rendered. French courts grant such stay at their discretion.[337] In addition, invalidity can also be brought as a defence in infringement proceedings.

In the UK, in addition to the possibility to bring the invalidity defence or a counterclaim in infringement proceedings, there is also the possibility to file an independent action for revocation without having become the target of infringement proceedings.[338] Under UK law, a specific interest in the matter is not required, although in the majority of the cases the claimant is a competitor attempting to enter the market. Furthermore, anyone can start opposition proceedings before the UKIPO or before the EPO to oppose a European patent within nine months after the patent grant. This can open the possibility of parallel invalidity proceedings in the EPO or the national office and UK courts. The national court may therefore stay its proceedings until a final decision is made on the opposition. The decision is discretionary, and the court should exercise its discretion to achieve a fair balance between the interest of the parties, by taking into account the relevant circumstances of the case.[339] In addition, as noted above for infringement proceedings, before filing a revocation action, the interested party also has the possibility to request a preliminary opinion from the UKIPO.

d) Actions Relating to the Prior Use of the Invention

When it comes to actions concerning the right of prior use of the invention, which can be available to the non-patentee, Germany requires a proper prior use in the sense of initial use or preparations towards such use. In France, instead, the mere possession of the invention, which does not require a commercial exploitation of the invention but rather corresponds to the knowledge of the invention, would be sufficient.[340] Under UK law, prior use is more linked to public prior use and publication as opposed to a patent's novelty. Thus, in opposition proceedings or in an action for revocation, a prior user can assert public prior use. In certain circumstances, also non-public prior use can be taken into account; but in such a case a right that limits patent protection does not exist.[341]

5. Conclusion

The aim of the above analysis was to provide an overview of the possible types of actions that can be available to a potential start-up as plaintiff and/or defendant in the framework of the UPC system in comparison to the current system of national courts. As a result, the UPC litigation

[337] Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 152.
[338] Patents Act 1977, s 72.
[339] The principles to be used by English courts in this circumstance have been set in *Ipcom GmbH & Co KG v HTC Europe Co Limited,* 21 November 2013 [2013] EWCA Civ 1496, para. 38.
[340] Helmut Eichmann, 'Kritische Überlegungen zum Vor- und Weiterbenutzungsrecht' (1993) GRUR 73, 73 (footnotes15 and 16).
[341] Ibid.

framework provides the potential start-ups litigants with a very similar – if not almost the same – spectrum of options that are available under the different national systems. Accordingly, it can be concluded that there is a fair balance of interests between the tools available to a start-up patentee and the means of defence available to a start-up defendant. Nevertheless, it can be noted how in certain cases some national procedural laws provide for some additional options, or have specific characteristics, which can be used particularly by the non-patentee. It is therefore possible to consider the introduction of those instruments also within the UPC system. In particular, it can be advisable to include the possibility to ask for a preliminary opinion to the European Patent Office on potential infringement and/or validity as it occurs in the United Kingdom. In addition, also as a lesson to take form the English system, it would be possible to consider the introduction of a specific small claims-track procedure as in the IPEC court in the United Kingdom. The former, would allow the start-up litigant to obtain a high-quality opinion on whether it would be worthwhile to commence an action or defend itself with regard to the patent at hand. The latter may open the opportunity for a start-up litigant involved in a low-value dispute to be involved in a less expensive and more speedy procedure. Yet it is an open question whether the benefits of such an introduction would outweigh its potential disadvantages or not. Thus, although this option may deserve some consideration, the proposal for its implementation within the UPC requires a more thorough analysis.[342]

After having considered which types of actions could be available to a start-up company under both the current and new system, what may have considerable implications for a start-up is the place in which the litigation may occur. The implications of the location of litigation for start-ups both as plaintiffs (patentees) and defendants (non-patentees) are explored in the next Section.

B. The Proximity of Litigation

Indeed, start-up companies, both in the position of plaintiffs and of defendants, will prefer to litigate in a forum which is closer to their domicile or to their centre of activities for evident reasons. Proximity to the place of litigation would indeed allow the financially constrained business to litigate, either as defendant or plaintiff, in a forum which is familiar to the firms, both in terms of language and of legal and cultural tradition. Litigation in a nearby forum would be less expensive and burdensome. Proximity of jurisdiction is one of the principles of private international law.[343] The proximity principle also applies outside of the scope of the BR as a general consideration or an expression of common sense.[344] In this regard, it is important to

[342] The advantages or disadvantages of the potential implementation of an IPEC procedure within the UPC will be explored in more detail in Section E, concerning the costs of litigation.

[343] Jannet A. Pontier and Edwige Burg, *EU Principles on Jurisdiction and Recognition and Enforcement of Judgements in Civil and Commercial Matters according to the Case Law of the European Court of Justice* (TMC Asser Press 2004) 160.

[344] AG Jääskinen in Case C-360/12 *Coty Prestige Lancaster Group* ECLI:EU:C:2013:764, para. 35.

distinguish between proximity as the principle underlying the defendant's domicile rule and proximity as a basis of the special jurisdiction rules for which proximity relates to either 'a close connection between the court and the action or a sound administration of justice'.[345] Against this backdrop, it is important to analyse to what extent the establishment of the Unified Patent Court would increase the likelihood that a start-up will be sued or has to initiate an action in more remote places in comparison to the current situation. With this aim, the present Section provides an overview of the relevant BR provisions and of the principles behind their application. Furthermore, it analyses the relevant UPCA provisions and explores to what extent the principle of proximity is respected in the context of the envisaged Unified Patent Court. The analysis finds that in several circumstances the UPCA structure and competence is not aligned with the principles enshrined in the BR and that this may have implications in particular for start-up businesses. The final part concludes with the proposal of some changes and alternative solutions which may achieve a better balance of the interests of the parties involved.

I. Preliminary Considerations on Jurisdiction and Competence (Article 31 UPCA)

The jurisdiction of the UPC covers the matters enumerated in Article 32(1) UPCA. Hence, the UPC has the authority to decide such actions with binding effect for the parties. Article 31 UPCA concerns the issue of whether the UPC has international jurisdiction in relation to other courts that operate outside of the geographical reach of the UPCA and for which it has internal jurisdiction (hereinafter 'competence') according to Article 32 UPCA. Therefore, the latter regulates the internal competence of the UPC in relation to the courts of the CMSs and confers that competence on the UPC. In sum, also for the purposes of the following analysis and for clarification, a distinction should be made between three main aspects. First, the cognition of the UPC in terms of subject-matter (Article 32 UPCA). Second, the internal jurisdiction that the UPC has in relation to the territory of the CMSs (as guaranteed by Articles 71a and 71b BR), also in connection with the rules concerning the transitional period (Article 71c (2) BR) and on enforcement and recognition of judgments. Third, the external international jurisdiction that the UPC has with regard to the EU Member States which are not CMSs (Article 31 UPCA, Articles 71a and 71b (1) UPCA).

[345] Brussels I Regulation, recital 16. Torsten B. Larsen *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar Publishing 2017) 87, notes how from early 1975 to 2009 the CJEU in its case-law seems to justify the importance of a closer connection to the dispute with more and more subordinate grounds including efficient proceedings, sound administration of justice until cumulatively adding to these mentioned two, in the 2002-2009 case law, also easy access to evidence and proximity. Yet, despite the apparent incongruence of the wording, there is no disharmony between the Recital 16 of the Brussels I Regulation and the development of CJEU case-law, because they both rely on the general principle of proximity.

In order to allow the conclusion of the UPCA as an international agreement between the CMSs, which otherwise would have been excluded by Article 71 BR,[346] Reg. (EU) 542/2014 has introduced Articles 71a through 73c in the BR. These amendments were introduced in order to regulate the international jurisdiction of the UPC and the recognition and enforcement of judgments of the UPC in Member States which are not CMSs of the UPC and also to govern the relationship between the UPC and the national courts during the transitional period.[347] It is outside of the scope of this thesis to provide a thorough analysis of Articles 71a through 73c. Instead, a brief overview is provided to better contextualize and understand the relationship between the BR and the UPCA and therefore between the current and potentially future system.

Pursuant to Article 71a BR, the Unified Patent Court (UPC) as established by the UPCA is, for the purposes of the BR, a 'common court' to several Member States, which therefore will act for each CMSs as a court belonging to their own judicial system. Along the same lines, Article 71b(1) BR provides that the UPC has jurisdiction where, 'under this Regulation [Brussels Ibis Reg.], the courts of a Member State party to the instrument establishing the common court would have jurisdiction in a matter governed by that instrument.' This provision therefore recognizes the assignment of jurisdiction by the CMSs to the UPC.[348] However, it also establishes a limitation of such a transfer, which is expressed by the wording 'under this Regulation'. Said limitation has been interpreted as meaning that the UPC, in using the assigned jurisdiction, must respect all limitations and conditions to which the BR subjects the jurisdiction of the CMSs.[349] Yet, it has been stressed that such limitation cannot be interpreted in a way to subject the relationship

[346] Art 71 BR provides as follows:

> 1. This Regulation shall not affect any conventions to which the Member States are parties and which, in relation to particular matters, govern jurisdiction or the recognition or enforcement of judgments.
>
> 2. With a view to its uniform interpretation, paragraph 1 shall be applied in the following manner:
>
> (a) this Regulation shall not prevent a court of a Member State which is party to a convention on a particular matter from assuming jurisdiction in accordance with that convention, even where the defendant is domiciled in another Member State which is not party to that convention. The court hearing the action shall, in any event, apply Article 28 of this Regulation;
>
> (b) judgments given in a Member State by a court in the exercise of jurisdiction provided for in a convention on a particular matter shall be recognised and enforced in the other Member States in accordance with this Regulation. Where a convention on a particular matter to which both the Member State of origin and the Member State addressed are parties lays down conditions for the recognition or enforcement of judgments, those conditions shall apply. In any event, the provisions of this Regulation on recognition and enforcement of judgments may be applied.

As a consequence, the conclusion of new agreements on jurisdiction, recognition and enforcement of judicial decisions, in addition to the ones already existing at the time of the entry into force of the Brussels Ia Reg. is not allowed. Thus, the provision creates a sort of 'barrier' in this regard, which could only be overcome through an amendment of the Brussels Ia Reg. This is why the UPCA establishes the UPC as a court of the CMSs.

[347] Massimo Scuffi, *Il Nuovo Sistema Europeo dei Brevetti. Il Tribunale Unificato e il Regolamento di Procedura* (Giuffré Editore 2017) 78.

[348] Massimo Scuffi, *Il Nuovo Sistema Europeo dei Brevetti. Il Tribunale Unificato e il Regolamento di Procedura* (Giuffré Editore 2017) 78.

[349] For such an interpretation see Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 584.

between the UPC and the courts of the CMSs to the BR *per se*.[350] Conversely, this may well mean that the rules on jurisdiction of the BR have to be applied in the relationship between the UPC and EU Member States that are not CMSs, because these latter States must apply the BR in respect to the other EU Member States. Thus, the UPC has international jurisdiction according to Articles 4, 6, 7(2) and 8(1) BR[351] and has to recognize the corresponding jurisdiction of the courts of EU Member States that are not CMSs. As a consequence, it seems possible to argue that on the basis of Article 4 BR on jurisdiction at the defendant's domicile, in a case in which the defendant has her domicile in a CMS, the UPC has jurisdiction for infringement actions for a EP, also in relation to EP parts that are protected in non-CMS EU MSs, as well as for EPUEs if parts of the underlying EP have protection in the other non-CMSs. Conversely, the courts of an EU Member State that is not a CMSs, but where the defendant has her domicile, can also have jurisdiction over infringement actions (except revocation) for the parts of the EP that are protected in the CMSs. In that event, the national courts of a EU Member State that is not a CMS would need to apply the substantive law provision of the UPCA.[352]

Furthermore, for jurisdiction according to Article 6(1) BR, Art 71b(2) BR provides that where the defendant is not domiciled in any EU Member State and where the BR does not otherwise confer jurisdiction upon that person, Chapter II (including Articles 7(2) and 8(1) BR) applies 'regardless of the defendant domicile'. Article 71b(3) goes further in extending the cognition of the UPC pursuant to Article 71b(2), called upon to decide on an action relating to the infringement of a European patent giving rise to damages in the EU, to cover also damages which have arisen outside the EU from this infringement.[353]

Moreover, Article 71c(1) BR provides that Articles 29-32 BR (on *lis pendens*, duties to stay proceedings) apply in the relationship between the UPC and the courts of the EU Member States

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[350] Ibid.

[351] A more detailed analysis and overview of these provisions and their justifications is provided below.

[352] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 585.

[353] Art 71b Brussels Ibis Reg reads:

> The jurisdiction of a common court shall be determined as follows:
>
> (1) a common court shall have jurisdiction where, under this Regulation, the courts of a Member State party to the instrument establishing the common court would have jurisdiction in a matter governed by that instrument;
>
> (2) where the defendant is not domiciled in a Member State, and this Regulation does not otherwise confer jurisdiction over him, Chapter II shall apply as appropriate regardless of the defendant's domicile.
>
> Application may be made to a common court for provisional, including protective, measures even if the courts of a third State have jurisdiction as to the substance of the matter;
>
> (3) where a common court has jurisdiction over a defendant under point 2 in a dispute relating to an infringement of a European patent giving rise to damage within the Union, that court may also exercise jurisdiction in relation to damage arising outside the Union from such an infringement.
>
> Such jurisdiction may only be established if property belonging to the defendant is located in any Member State party to the instrument establishing the common court and the dispute has a sufficient connection with any such Member State.

The problems and complexities deriving from such provision will be analysed more extensively under Section C.

that are not CMSs; and pursuant to Article 71d(1) BR, recognition and enforcement of decisions are governed by the respective rules of the BR.[354]

In any case, as regards the extent to which the UPC can be deemed to be bound by the BR, Tilmann[355] argues that the limitation 'under this Regulation' as pointed out in Article 71b(1) BR, does have implications in relation to the internal distribution of competences between the local, regional and central division of the UPC. As a consequence, the distribution of competences must mirror the provisions and principles of the BR.[356] In this regard, however, it must be highlighted that Article 33 UPCA deals only with the internal distribution of competences of the UPC divisions. The allocation of cases between different divisions is not an issue of local or international jurisdiction and it is therefore not covered by the BR.[357] Nevertheless, despite the absence of a clear legal basis, it is relevant to highlight the importance of an alignment of Article 33 UPCA with the principles and provisions of the BR. Indeed, Article 33 UPCA concerns a distribution of competences between divisions which are situated in different Member States and it therefore corresponds to the situation in which the BR applies. Therefore, considering that from this point of view, the UPC internal distribution of competences is different from the internal distribution of competences within a court which is located only in one place, it is advisable that Article 33 UPCA provides the plaintiffs and defendants with the guarantees enshrined in the BR principles. Indeed, the BR protects both material interests, namely, the protection of the defendant, which must be sued before the courts of the state in which she has her domicile (Article 4 BR), as well as procedural interests, such as the fact that proceedings should be conducted close to the place where the infringing act has occurred, because it will be easier to gather the means of evidence there and because it is there that the parties have direct interests in conflict. In addition, the alternative grounds for jurisdiction (Articles 7(2) and 8(1) BR), need to be applied restrictively to protect the defendant. Thus, there is no specific and contrary reason why one would argue that those principles and material interests do not have to be followed and respected by the UPCA as well. This is why the following Sub-section will critically analyse to what extent such departure from the principles of the BR occurs within the UPCA and its potential implications for start-ups as plaintiffs (patentees) or defendants (non-patentees). Before, an overview of the content and justification of the relevant BR provisions will be provided.

[354] Pieter Callens and Sam Granata, *The Unitary Patent and the Unified Patent Court* (Wolters Kluwer 2017) 147-149; Pedro A. De Miguel Asensio, 'Regulation (EU) No. 542/2014 and the International Jurisdiction of the Unified Patent Court' (2014) 45 IIC 868, 872-873.
[355] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 585.
[356] Ibid.
[357] In this sense see Stefan Luginbühl and Dieter Stauder, 'Application of Revised Rules on Jurisdiction under Brussels I Regulation to Patent Lawsuits' (2015) 10 Journal of Intellectual Property Law and Practice 135, 143.

II. Internal Case Allocation under Article 33 UPCA: Analysis and Implications for Start-Ups

When detailing the competence of the Court of First Instance, the UPCA partially deviates from the principles governing the BR. The resulting imbalances require either to rethink the distribution of competence or to ask the question which could be the most suited interpretation.

First of all, it is nevertheless remarkable that the proposed UPC system does not provide for a completely centralized system, as it was the case in the previous drafts of this project. Indeed, the Council Common Position of 3 March 2003 foresaw such a centralized judicial system for European patents. [358] In such case even the First Instance Division, and therefore also the point of entry of litigation and not only the Court of Appeal, was deemed to have its seat in Luxemburg. A great part of the stakeholders however opposed such envisaged strong centralisation, considering that it would have been overly burdensome and unreasonable to transfer all patent cases, which usually occur in one or only a few more Member States, to a centralized Court in Luxemburg.[359] Taking in consideration such observations, the subsequent draft of the European Patent Litigation Agreement (EPLA) and the related rules of procedure provided for decentralized points of entry.[360] Afterwards, according to the Draft of an Agreement on a European and Community Patents Court[361] of 8 January 2009, which envisaged a judicial system available for European patents, as it was the case with the EPLA and for Community patents as in the draft of 2003, the Court of First Instance was planned to be organized in decentralized divisions.

In general, the choice between centralisation or decentralisation is based on their respective implications. More in particular, the attempted decentralisation of the point of entry, which the current Article 33 UPCA tries to implement, is based on four main aspects. First of all, particularly during the transitional period, the Court would be able to rely on the capacities of judges and judicial institutions at local or regional level. And those judges can be active both within and outside the unified judicial system, thereby ensuring a certain extent of flexibility.[362] Secondly, for commencing the action, a plaintiff can choose the division which is closest to the conflict, being it either the division of the defendant's domicile or the one of the state of infringement.[363]

[358] COM (2003) 828 final; Council Doc 5189/04.
[359] Winfried Tilmann, 'Die Zukunft der Patent-Streitregelung in Europa' (2001) GRUR 1079, 1080.
[360] For more in this regard see Jochen Pagenberg, 'Industry, Legal Profession and Patent Judges Press for Adoption of the European Patent Litigation Agreement (EPLA)' (2006) 37 IIC 46, 46-49. Nevertheless, in this case the project did not proceed because of objections raised by the Commission, based on co-competence of the EU for certain parts of the EPLA.
[361] Council Doc 5072/09 and Recommendation from the Commission to the Council to authorise the Commission to open negotiations for the adoption of an Agreement creating a Unified Patent Litigation System of 20 March 2009, SEC(2009) 330 final.
[362] Winfried Tilmann, 'Die Zukunft der Patent-Streitregelung in Europa' (2001) GRUR 1079, 1080; Winfried Tilmann, 'UPCA and EPUE-Reg – Construction and Application' (2016) GRUR Int. 409, 417.
[363] Winfried Tilmann, 'Die Zukunft der Patent-Streitregelung in Europa' (2001) GRUR 1079, 1080–1081.

Thirdly, decentralisation is beneficial also to the defendant in the first case, since the division will be located closer to the defendant's domicile and, as regards jurisdiction at the place of infringement, because the defendant will in any case be familiar with this place where this person exercises, and can control, the allegedly infringing conduct.[364] Fourth, in the case in which litigation takes place at the defendant domicile, decentralisation allows the defendant to litigate and defend herself before the division in her own language because the language of the division is the language of the state where the seat of the division is located (Article 49 UPCA).[365] Furthermore, this advantage would occur also when the plaintiff chooses the place of infringement, since the defendant would in any case be familiar with the language of the state in which she exercised the allegedly infringing act. Therefore, considering these potential advantages of decentralisation, which constitute the reasons for the choice of a decentralized system and should be preserved, it is questionable to what extent the UPC system does actually apply such decentralisation and to what extent such regulation observes or departs from the principles enshrined in the BR. To this aim, it is preliminarily necessary to recall and provide an overview of the most important provisions of the BR in this regard and of their justifications.[366]

1. Rules of Jurisdiction of National Courts under the Brussels System

Overall, the basic principle of jurisdiction is that defendants are sued at their domicile or seat. This general rule of jurisdiction is complemented by some additional grounds of special jurisdiction that are at the disposal of the claimant in relation to a certain subject-matter (e.g. the place where the harmful event occurred or may occur). These different grounds of jurisdiction are normally, as already explained further above, justified by a close connection of the court with the dispute. Moreover, some rules confer exclusive jurisdiction to the courts of a given state under certain circumstances regarding specific matters, which the court is better suited to decide upon. In these cases, the parties do not have any possibility to choose another forum. Due to their compulsory nature, exclusive rules of jurisdiction are indicated as a strict exception to the principle of the domicile of the defendant.

1.1. The Forum of the Defendant's Domicile (General Jurisdiction)

Pursuant to Article 4(1) BR, persons domiciled in an EU Member State can be sued before the courts of that Member State.[367] The provision therefore expresses the basic principle that

[364] Ibid.
[365] Winfried Tilmann, 'UPCA and EPUE-Reg – Construction and Application' (2016) GRUR Int. 409, 416.
[366] The following overview does not aim to provide an extensively detailed analysis or comment of the selected rules, but merely to set a framework for the subsequent discussion.
[367] Art 4 BR: '[P]ersons domiciled in a Member State shall, whatever their nationality, be sued in the courts of that Member State'.

defendants must be sued where they are domiciled.[368] In general terms, the rationale of this principle is to protect the defendant.[369] The rule applies when the defendant is domiciled in the EU/EFTA regardless of his/her nationality and regardless of the domicile of the plaintiff.[370] The term domicile is defined differently for natural and legal persons. Considering that the core of the current analysis is on start-ups, only the latter is explained in more detail. The BR definition of domicile for legal persons includes three alternatives. The first is the "statutory seat", namely, the place where the legal person is incorporated.[371] The second is the 'central administration', or in other words, the centre of management and control. The last one is the 'principal place of business', namely, the Member State where the main business activities are located.[372] As a consequence, if only one of the places is located within a Member State and the other two are instead outside (e.g. in the US or China), it will be possible to sue the legal person in that Member State.

1.2. Special Jurisdiction

The most relevant grounds of special jurisdiction, which will be analysed hereinafter, are the place where the harmful event occurred (Article 7(2) BR), the place of establishment (Article 7(5) BR), actions against multiple defendants (Article 8(1) BR) and counterclaims (Article 8(3) BR).

a) The Establishment Rule (Article 7(5) BR)

Article 7(5) BR is a special jurisdiction rule which supplements Article 4 BR and provides the plaintiff with the opportunity to choose among the two.[373] The overall justification for the

[368] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation,* (Sellier European Law Publishers, 2016) 108; European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:101 comment C01 with references; Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar Publishing, 2017) 92. The principle is also expressed in Recital (15) Brussels I Regulation.

[369] Among others, see Case 220/84 *AS-Autoteile Service* ECLI:EU:C:1985:302, para. 15; Case C-26/91 *Handte* ECLI:EU:C:1992:268, para. 14; Case C-412/98 *Group Josi Reinsurance Company* ECLI:EU:C:2000:399, para. 35; James J. Fawcett and Paul Torremans, *Intellectual Property and Private International Law* (2nd edn, OUP 2011) para. 5.07; Annette Kur, 'Jurisdiction and Enforcement of Foreign Judgements – the General Structure of the MPI Proposal' in Josef Drexl and Annette Kur (eds), *Intellectual Property and Private International Law – Heading for the Future* (Hart Publishing 2005) 21, 31; European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:101 comment C01; Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar Publishing 2017) 93.

[370] Case C-327/10 *Hypotecní banka* ECLI:EU:C:2011:745, para. 31; Case C-412/98 *Group Josi Reinsurance Company* ECLI:EU:C:2000:399, para 78; Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2012) 78.

[371] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation,* (2nd edn, Sellier European Law Publishers 2016) 111.

[372] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 111. Yet, as noted in Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar Publishing 2017) 94, Art. 63(1)(c) BR is deviating from Principle 2:601(3) CLIP Principles, which refers to the place from which the external activities are exercised. See European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:203 comment C05 and Principle 2:601 comment C07.

[373] Art 7(5) BR reads as follows:

provision is, also in this case, the proximity principle. Thus, the provision can be interpreted as bringing further precision to the domicile rule. Indeed, when the defendant is operating a branch, agency or other establishment for the purposes of doing business this represents the place in which the business may seek an advantage or in which she should legitimately take into account the consequences of being sued.[374] First of all, in order for the rule to apply, the defendant must have a branch, agency or other establishment in a EU/EFTA state different than the state of domicile (Article 7 BR). It is further required that the establishment[375] is a fixed and permanent place of business and, therefore, a website does not qualify in this regard. Article 7(5) BR uses the concept of establishment as a synonym to branches and agencies, meaning entities that do not have their own legal personality. According to the CJEU case law, the application of this ground of jurisdiction is subject to the existence of four conditions: (a) the establishment is a place of business which has the appearance of permanency in the Member State where it is located; (b) it is an entity capable of being interlocutor for third parties following the instructions of the parent company; (c) the establishment acts on behalf of the parent company; (d) the acts giving rise to the disputes must have been committed by the establishment.[376] Conversely, subsidiaries are considered as independent legal entities that are responsible for their own legal acts, even if they may be acting under the instructions of a parent company. Secondly, the dispute has to arise in relation to the establishment in the sense of a connection between the dispute and the establishment.[377] It is not completely clear whether a close connection is required or also a more distant one would be sufficient. Yet, taking into account the interests involved and considering Recital 16 BR and the exceptional character of the provision, it seems more likely that the close connection requirement should be favoured.[378]

A person domiciled in a Member State may be sued in another Member State as regards a dispute arising out of the operations of a branch, agency or other establishments, in the courts for the place where the branch, agency or other establishment is situated.

As noted in Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar Publishing, 2017) 114, the term 'establishment rule' is not uniformly used. In the literature, it is sometimes referred to as 'special jurisdiction based on the establishment' (see Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2012) 277 or as the 'domicile of the branch' (Marta Pertegás Sender, *Cross-Border Enforcement of Patent Rights* (OUP 2002) para. 3.56) and sometimes as 'branch, agency or other establishment' as in Principle 2:207 in European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:207 comment C01.

[374] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 351.

[375] Here the term is meant to include any branch and agency, which constitute mere specifications of the former.

[376] CJEU Case 33/78, *Somafer* ECLI:EU:C:1978:205; CJEU Case C- 439/93 *Lloyd's* ECLI:EU:C:1995:104.

[377] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 358; European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:207 comment C03.

[378] Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar Publishing 2017) 118.

b) Place where the Harmful Event Occurred (Article 7(2) BR)

The *forum delicti* rule is a special jurisdiction rule[379] which supplements Article 4 BR and thus the plaintiff can choose between the two and is not restricted by the doctrine of *forum non conveniens.* Yet, in comparison to Article 4 BR, which protects more the defendant, Article 7(2) BR tries to strike a balance between the interests of the parties.[380] Article 7(2) BR has been applied to intellectual property rights in *Wintersteiger.*[381] In this case, the CJEU confirmed the distinction between place of action and place of effects in a case of online infringement of trade marks and defined the former as the place where the advertiser is established and the latter as the place in which the trade mark is registered.[382] The former has been justified with the principle of proximity and the latter with the principle of territoriality, thereby respecting the need of predictability and proximity.[383] In relation to the former, the action can be brought at the place which normally coincides with the domicile of the defendant. In relation to the latter, in contrast, it is possible to bring an action in another Member State where the plaintiff has a trade mark registration. The place of registration then corresponds to the forum as provided by Article 24(4) BR when the litigation regards invalidity. Furthermore, in *Folien Fischer*,[384] the CJEU held that Article 7(2) BR is also applicable to actions for declaration of non-infringement. The CJEU based its decision on the arguments that a negative declaration relates to the same law, the same fact and cause of action as the corresponding positive action and must therefore be treated in the

[379] Art 7(2) BR reads as follows: 'A person domiciled in a Member State may be sued in another Member State in matters relating to tort, delicti or quasi-delict, in the courts for the place where the harmful event occurred or may occur.'

[380] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 263. Recital 11 and 16 BR express the three main arguments for the interpretation and application of Art 7(2) BR. First, the fact that grounds for special jurisdiction have at their basis a close connection between the court and the action or are set in order to facilitate the administration of justice. Secondly, relevance is attributed to easy access and local vicinity to the means of evidence. Thirdly, the special jurisdiction rule is more likely to lead to the application of the substantive national law of the forum and may thereby facilitate administration of justice.

[381] Case C-523/10 *Wintersteiger* ECLI:EU:C:2012:220. For an in-depth analysis of the case see, among others, the comment by Peter Picht, 'Von eDate zu Wintersteiger – Die Ausformung des Art. 5 Nr. 3 EuGGVO für Internetdelikte durch die Rechtsprechung des EuGH' (2013) GRUR Int. 19-27.

[382] Case C-523/10 *Wintersteiger* ECLI:EU:C:2012:220, paras 29 and 37. In doing so the CJEU did not apply the so called 'centre of interests rule', which applies to online infringements of personality rights and where the action can be brought at the *forum actoris.* Trade mark rights are therefore treated differently than personality rights in Joined Cases C-509/09 and C-161/10 *eDate Advertising and Martinez* ECLI:EU:C:2011:685 para. 44. This is mainly so because, in comparison to personality rights, trade mark rights are are territorial in nature and are also related to the commercial exploitation of a product.

[383] Case C-523/10 *Wintersteiger* ECLI:EU:C:2012:220 paras. 25, 27, 37. For a thorough analysis of nine general and specific principles as applied in *Wintersteiger,* see Torsten B. Larsen, *Intellectual Property Jurisdiction Strategies – Where to Litigate Unitary Rights vs National Rights in the EU* (Edward Elgar Publishing 2017) 179–207. For other cases concerning national IP rights and the application of the 'forum commissi delicti' rule, see Case C-441/13 *Hejduk* ECLI:EU:C:2015:28; Case C-170/12 *Pinckney* ECLI:EU:C:2013:635; Case C-618/15 *Concurrence Sàrl* ECLI:EU:C:2016:843.

[384] Case C-133/11 *Folien Fischer* ECLI:EU:C:2012:664.

same manner and that the wording of Article 7(2) BR does not exclude negative declarations.[385] The result of *Folien Fischer* is thus that the infringer may choose between different forums when bringing an action for declaration of non-infringement and this may well increase the risk of 'torpedos'.

c) Multiple Defendants in Related Actions (Article 8(1) BR)

Pursuant to Art. 8(1) BR multiple defendants can be sued in the country where only one of them is domiciled provided that 'the claims are so closely connected that it is expedient to hear them and determine them together in order to avoid the risk of irreconcilable judgments deriving from separate proceedings'. This multiple defendants rule is a special jurisdiction rule and must be interpreted and applied strictly.[386] Therefore, the rule should not apply if the intent is to deprive the defendant of the jurisdiction of the courts of her domicile.[387] Thus, the rule works as a supplement to the defendant's domicile rule and allows the plaintiff to choose between the two without the restriction of the *forum non conveniens* doctrine.[388] The justification of the rule consists in the avoidance of irreconcilable judgments and the opportunity to foresee where one could be sued.[389] It provides the plaintiff with the possibility to consolidate actions against several defendants, where all of them are part of the same 'web'. Yet one requirement for its application is that the claims have to be closely connected and to this aim the courts need to verify whether the laws to be applied are substantially identical and whether the facts are the same. As regards the substantially identical law requirement concerning European patents, the question arises whether cases relating to the protection of different national prongs of a European patent are identical in law or not.[390] In *Roche Nederland*, the CJEU denied the application of Article 8(1) BR, stating that to the infringement different national laws apply and that therefore the claims were not closely connected.[391] Yet, this approach was criticized by several scholars,[392] claiming in particular that the CJEU interpreted the territoriality principle too

[385] Ibid., paras 36, 42, 46, 47, 48, 49, 52 and 54.

[386] Case C-462/06 *GlaxoSmithKline v Rouard* ECLI:EU:C:2008:299 para. 28; Case C-145/10 *Painer* ECLI:EU:C:2011:239 para 74; Case 616/10 *Solvay* ECLI:EU:C:2012:445 para 21; Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) p 372.

[387] Case C-51/97 *Reúnion européenne SA* ECLI:EU:C:1998:509 para 47; Case C-103/05 *Reisch Montage AG* ECLI:EU:C:2006:471 para. 32.

[388] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 372.

[389] Case C-145/10 *Painer* ECLI:EU:C:2011:239 paras 75 and 77; Case 616/10 *Solvay* ECLI:EU:C:2012:445 paras. 19 and 20; Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 373 and 381, and Recital 15 Brussels Ibis Regulation.

[390] The first broader approach was adopted in the Netherlands and in Britain; see *Coin Controls Ltd. v Suzo International (UK) Ltd.* [1999] Ch 33; Marta Pertegás Sender, *Cross-Border Enforcement of Patent Rights* (OUP 2002) para. 3.19. The narrower approach was instead adopted in Denmark, Germany and Britain.

[391] Case C-539/03 *Roche Nederland* ECLI:EU:C:2006:458 paras 28, 32, 35.

[392] Among others, see, Annette Kur, 'A Farewell to Cross-Border Injunctions? The ECJ Decision GAT v LuK and Roche Nederland v Primus Goldenberg' (2006) 37 IIC 844; Annette Kur and Axel Metzger, 'Exclusive Jurisdiction and Cross Border IP (Patent) Infringement Suggestions for Amendment of the Brussels I Regulation' (2007) 23(1) *Intellectuelle*

strictly and excluded consolidation where the national laws are different because of the *lex loci protectionis* principle[393] and stating that the approach would lead to fragmented litigation[394] and was therefore cost-inefficient. Later, the CJEU in *Freeport* stated that a different legal basis does not impede the application of Article 8(1) BR.[395] Moreover, in *Painer*, without mentioning *Roche Nederland*, the CJEU clarified that the identical legal basis is not an indispensable requirement and that a difference in the legal basis will not preclude Article 8(1) BR from being applied, if the national laws are substantially identical.[396] It is clear that when it comes to European patents the requirement can be met for the same national part of a European patent.[397] In contrast, infringement of different national parts of the same European patent by different defendants requires a more complex assessment. The *Roche Nederland* approach suggest that such a casewould not meet the requirement for Article 8(1) application.[398] However, by taking *Painer* in consideration, one could overcome such stricter approach, in light of the fact that national patent law is equally harmonized as regards the scope of protection.[399] In addition, a second requirement for its application is that the defendants must have acted 'in an identical or similar manner', thereby requiring that the infringement relates to the same use of an IP right[400] and that they acted 'in accordance to a common policy elaborated by one of them'. Thus, the multiple defendants must not have acted independently. There has to be a common policy imposed by a directing party.[401] In addition to the mentioned requirements of application, it must however further be noted that if during infringement or non-infringement actions, invalidity is raised with regard to different prongs of a European patent, this may impose a separation of proceedings according to Article 24(4) BR as revised in the light of the *GAT v LuK* judgment.[402]

1.3. Exclusive Jurisdiction

Furthermore, a ground of exclusive jurisdiction exists in relation to the invalidity of patents. In those cases, Article 24(4) BR applies, which concerns the validity of IP rights registered in a

Eigendom & Reclamerecht 1; Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 385.

[393] European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) 111.

[394] James J. Fawcett and Paul Torremans, *Intellectual Property and Private International Law* (2nd edn, OUP 2011) para. 11.06.

[395] Case C-98/06 *Freeport* ECLI:EU:C:2007:595 paras 40 and 47.

[396] Case 145/10 *Painer* ECLI:EU:C:2011:239 paras 80—82.

[397] Case 616/10 *Solvay* ECLI:EU:C:2012:445 paras 27, 29 and 30.

[398] European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) 112.

[399] National harmonization occurred under the aegis of the Luxemburg Patent Convention which, however, never entered into force. Convention for the European patent for the common market (Community Patent Convention) of 15 December 1975 [1976] OJ L 17/1. See also Chapter 2, Section II.1.

[400] European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) 106.

[401] Ibid. 107.

[402] Case 4/03 *GAT v LuK* ECLI:EU:C:2006:457 and Art. 24(4) BR will be analysed hereinafter.

Member State.[403] The provision is an exception to the domicile rule and therefore must be interpreted strictly and narrowly.[404]

Article 24(4) BR has been amended to implement the decision held by the CJEU in *GAT v Luk,* which concerned the interpretation of Article 16(4) of the Brussels Convention, as applicable at that time.[405] In the case at hand, both parties were companies established in Germany and LuK alleged that GAT had infringed two of its French patents. In response, GAT brought a declaratory action before the Dusseldorf Regional Court (*Landgericht Düsseldorf)*, to establish that its products did not infringe LuK's French patents and that those patents were either void or invalid. The Regional Court dismissed the action holding that LuK's French patents satisfied the requirements of patentability. On appeal by GAT, the Higher Regional Court Dusseldorf *(Oberlandesgericht Düsseldorf),* stayed the proceedings and referred the question to the CJEU for a preliminary ruling on whether the scope of exclusive jurisdiction as provided for in Article 16(4) of the Convention concerned all proceedings relating to the registration or validity of a patent, regardless of whether the question was raised by way of an action or as a defence in infringement proceedings or whether its application was limited only to the cases in which the issue of patent registration or validity was raised by way of an action.[406] The CJEU clarified that the rule of exclusive jurisdiction established in Article 16(4) of the Brussels Convention, 'concerns all proceedings relating to the registration or validity of a patent, irrespective of whether the issue is raised by way of an action or a plea in objection".[407] The provision, as it can now be found in Article 22(4) BR, has then been amended in light of the CJEU's judgment. As a result of the CJEU decision, the plaintiff had to bring the proceeding before the French court, which had exclusive jurisdiction over the validity of the French patents. The German Court instead only had ordinary jurisdiction in relation to the infringement claims, considering that Germany was the country of the defendant's domicile. Therefore, the German Court would have to stay its proceeding and resume the case and examine the infringement claims only after the French Court's decision on the validity of the patents has been rendered.[408] The *GAT v LuK* decision has been strongly criticized.[409] In particular, the critiques related to the fact that the wording of

[403] Art. 24(4) BR reads: 'in proceedings concerned with the registration or validity of patents, trademarks, designs, or other similar rights required to be deposited or registered, irrespective of whether the issue is raised by way of an action or as a defence, the courts of the Member State in which the deposit or registration has been applied for, has taken place or is under the terms of an instrument of the Union or an international convention deemed to have taken place'.

[404] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 560-561; European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:401 note N07.

[405] Case 4/03 *GAT v LuK* ECLI:EU:C:2006:457, para 31.

[406] Ibid. para. 15.

[407] Ibid. para. 32.

[408] Benedetta Ubertazzi, 'Intellectual Property Rights and Exclusive (Subject-Matter) Jurisdiction' (2011) GRUR Int 199, 212.

[409] Annette Kur, 'A Farewell to Cross-Border Injunctions?' (2006) 37 IIC 844, 847; Paul Torremans, 'The Widening Reach of Exclusive Jurisdiction: Where Can The Widening Reach of Exclusive Juridiction: Where Can You Litigate After GAT?' in Arnaud Nuyts (ed.), *International Litigation in Intellectual Property and Information Technology* (Kluwer

Article 16(4) Brussels Convention would have allowed a narrower interpretation.[410] In addition, the CJEU argument that the alternative solution would lead to a multiplicity of heads of jurisdiction, which in turn would reduce the amount of legal certainty, cannot be supported.[411] Indeed, the presence of multiple heads of jurisdiction is at the basis of the system and does not represent a distortion of it.[412] As a consequence of the *GAT v. LuK* judgment, the cases against a defendant concerning invalidity of several parallel patents must be brought before each relevant country of registration. This leads to a duplication of disputes, higher costs and a greater risk of diverging decisions, considering that parallel designations of a European patent, based on the same facts and legal rules, can be dealt with differently in different Member States.[413]

Against this backdrop, the need to overcome the resulting current status of fragmented litigation was a strong argument for the initiative to concentrate litigation before a single Unified Patent Court.[414]

1.4. *Lis Pendens* Proceedings

Articles 29-32 regulate parallel proceedings before different national courts. In particular, Article 29 BR establishes that the court later seized shall stay its proceedings where 'proceedings involving the same cause of action and between the same parties are brought in the courts of different Member States'. First of all, it is therefore necessary for the parties in both proceedings to be identical.[415] For example, a licensor and a licensee are not identical parties and can pursue different interests. Furthermore, the issue of whether a parent company and its wholly owned subsidiary with its own corporate identity are identical or not is still controversial.[416] It is possible for such separate legal entities to be treated as the same parties for the purposes of Article 29. However, a court should be careful in doing this, in order not to extend the scope of Article 29, thereby limiting the discretion of the other court to determine cases individually.[417] Secondly,

Law International 2008) 61; European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:401 note N10.

[410] Benedetta Ubertazzi, 'Intellectual Property Rights and Exclusive (Subject-Matter) Jurisdiction' (2011) GRUR Int 199, 210.

[411] Paul Torremans, 'The Widening Reach of Exclusive Jurisdiction: Where Can the Widening Reach of Exclusive Juridiction: Where Can You Litigate After GAT?' in Arnaud Nuyts (ed.), *International Litigation in Intellectual Property and Information Technology* (Kluwer Law International 2008) 70; Annette Kur, 'A Farewell to Cross-Border Injunctions?' (2006) 36 IIC 844, 848.

[412] Ibid.

[413] Paul Torremans, 'The Widening Reach of Exclusive Jurisdiction: Where Can the Widening Reach of Exclusive Juridiction: Where Can You Litigate After GAT?' in Arnaud Nuyts (ed.), *International Litigation in Intellectual Property and Information Technology* (Kluwer Law International 2008) 72.

[414] Benedetta Ubertazzi, 'Intellectual Property Rights and Exclusive (Subject-Matter) Jurisdiction' (2011) GRUR Int 199, 212.

[415] Such identity must be determined according to criteria of EU law. See Case C-406/92 *Tatry* ECLI:EU:C:1994:400 paras 30 and 47.

[416] Ulrich Magnus and Peter Mankowski, *Brussels I Regulation* (2nd edn, Sellier European Law Publishers 2016) 728.

[417] Ibid.

the actions have to refer to the same cause of action, hence, the same patent and the same acts of infringement. In this regard, the CJEU has clarified that an infringement action and a corresponding action for declaration of non-infringement involve the same cause of action.[418] This in turn creates the so-called 'torpedo' phenomenon, which occurs when an action for declaration of non-infringement is brought to the courts of a country where proceedings are particularly slow, so that such action can block a subsequent infringement action in another country. In particular, under the Brussels system, declarations of non-infringement can be brought either before the defendant's domicile (Article 4(1) BR) or before the court of the place where the harmful event occurred (Article 7(2) BR).[419] In the latter instance it is however not yet clear whether the jurisdiction is restricted only to the infringement of the part of the European patent protected in that state or whether it also extends to the others national prongs.[420]

2. Analysis Article 33 UPCA in Comparison with the Principles of the Brussels Ibis Regulation

This Sub-section will present an analysis of Article 33 UPCA in order to provide a framework for the subsequent comparison with the Brussels Regulation. This comparision will highlight where potential inconsistencies with the BR principles may arise and analyse their implications for start-ups. By combining centralisation for revocation and decentralisation for infringement actions, Articles 32 and 33 UPCA attempt to strike a proper balance between the interests of patentees and third parties both as regards legal certainty and the interest in litigating before a most convenient forum. Nevertheless, under certain circumstances, these UPCA provisions depart from the principles of the BR, thereby creating certain imbalances, which in turn may have several implications for start-ups during litigation.

2.1. Competence for Infringement Actions (Article 33(1) UPCA)

Article 33(1) UPCA is divided in three sub-paragraphs. The first establishes the internal competence of the UPC for the actions referred to in Article 32(1)(a), (c), (f), (g) and (h), namely, actions for infringement of a patent or an SPC, provisional and protective measures and injunctions, damages or compensation, actions brought on the basis of a right based on prior use and actions for compensation for licences on the basis of Article 8 EPUE Reg. For such actions Article 33(1) establishes the competence of the division hosted by the CMS where 'the actual or threatened infringement has occurred or may occur' (lit. a) or of the local division hosted by the CMS 'where the defendant or, in the case of multiple defendants, one of the defendants has its

[418] Case C-406/92 *Tatry* ECLI:EU:C:1994:400 paras 43-45.
[419] Case C-133/11 *Folien Fischer* ECLI:EU:C:2012:664, paras 42-54.
[420] National courts in Germany and Italy have applied the most restrictive approach, considering that the jurisdiction relating to declarations of non-infringement is specular to declarations of infringement. See Tribunale di Milano, Sezione specializzata in material di impresa, Case No. 1143/2014, 21 January 2014; Dusseldorf Higher Regional Court (*Oberlandesgericht Düsseldorf*), Case I-2 U 67/03, 12 May 2005.

residence, or principal place of business, or in the absence of residence or principal place of business, its place of business, or the regional division in which that CMS participates' (lit. b). In other words, Article 33(1) provides for a choice between the infringement division and the domicile division in line with the principles of the Brussels system. The patentee can therefore have a wide choice in relation to which division of the UPC hears the claim, in particular when the harm occurs in several participating CMS, as it is often the case.[421] In particular, the infringement divisions are competent in the case both of actual and threatened infringement.[422] An actual infringement occurs when an infringing act, as defined in Articles 5(3) and 7 EPUE Reg. and Articles 25 and 26 UPCA, implements all features of the claim. In this regard, under Article 7(2) BR, the CJEU differentiates between the place where the damage occurred (*locus damni*) and the place where the event which gave rise to the damage occurred (*locus actus*).[423] When it comes to registered intellectual property rights, the *locus damni* is the state in which the right is registered[424] or the state of validation as far as a European patent is concerned. Indeed, on the basis of the principle of territoriality, infringing acts can only occur in the state of registration. The CJEU however also noted that with regard to the place where the event occurred which gave rise to an alleged infringement of a national trade mark (*locus actus*) through advertisements posted on a website in another country which are accessible also in the country of protection, 'the territorial limitation of the protection of a national mark is not such as to exclude the international jurisdiction of courts other than the courts of the Member State in which that trade mark is registered'.[425] In these cases, the CJEU considers the place of the activities of the infringer as the *locus actus* and holds that such an infringement action can also be brought before the Courts of the Member State where the infringement activities have been carried out.[426]

While this is the approach that the CJEU has followed for the interpretation of the *forum commissi delicti* rule in relation to the infringement of national intellectual property rights, it is in this context relevant to highlight how the CJEU has interpreted the rule with regard to the infringement of unitary IP rights. In particular, the development and changes in the approach can

[421] In this regard see Michael Carter, 'To the UPC and Beyond! Is this the End of Forum Shopping?' (2016) CIPA Journal 12, 14; Aurelio Lopez-Tarruella Martinez 'Tutela Effectiva de la Propriedad Intelectual Y Forum Shopping' in Juan Antonio Moreno Martinez (eds) *Problemática actual de la tutela civil ante la vulneración de la propiedad industrial e intelectual* (Dykinson 2017) 325, 357.

[422] Aloys Hüttermann, *Einheitspatent und Einheitliches Patentgericht* (Carl Heymanns Verlag, 2016) 90.

[423] See CJEU C-523/10 *Wintersteiger* ECLI:EU:C:2012:220, para 19.

[424] Ibid. paras 27-29.

[425] Ibid. para 30.

[426] Ibid. paras 38, 39. In *Wintersteiger* the CJEU considered the place of the infringer´s activities as the place of the establishment of the advertising entity, where the technical process is carried out, on the basis of the argument that it is a definite place both for the applicant and for the defendant and that it can facilitate the taking of evidence. See CJEU C-523/10 *Wintersteiger* ECLI:EU:C:2012:220, para 37. For other cases concerning national IP rights and the application of the 'forum commissi delicti' rule, see Case C-441/13 *Hejduk* ECLI:EU:C:2015:28; Case C-170/12 *Pinckney* ECLI:EU:C:2013:635; Case C-618/15 *Concurrence Sàrl* ECLI:EU:C:2016:843.

be followed in the *Coty Germany*[427] and *AMS Neve*[428] judgments concerning the infringement of European Union trade marks (EUTM).

The first case dealt with the alleged infringement of a three-dimensional EUTM owned by Coty Germany, an undertaken established in Germany, which produced and distributed cosmetic products, including the women's 'Davidoff Cool Water Woman' perfume in a bottle reproducing its EUTM. Coty Germany brought an action against First Note, a wholesaler established in Belgium who had sold the perfume 'Blue Safe for Women' to an individual with a place of business in Germany who subsequently sold again the products in Germany, claiming that the distribution of 'Blue Safe' perfume infringed Coty Germany's EUTM. The claim was not successful at first and second instance and in particular, on appeal, the German court denied jurisdiction to hear the case. The German Federal Court of Justice (*Bundesgerichtshof*, *BGH*) referred the case to the CJEU for a preliminary ruling on whether German courts can have jurisdiction to hear an infringement action against a wholesaler which was established in Belgium and who had not directly acted in Germany.[429] Thus, the question was essentially whether German courts were competent in this case, since Germany was the place where the harmful event occurred. The Court held that Article 97(5) (now Article 125(5)) EUTMR[430] could not be interpreted as Article 7(2) BR. And this both because the EUTMR already provides for different grounds of international jurisdiction[431] and because it excludes the application of Article 7(2) BR to infringement proceedings.[432] In addition, the Court stressed that the duality of linking factors, namely, the place of the event giving rise to damage and the place where damage occurred used by the Court in relation to the interpretation of Article 7(2) BR cannot directly apply to the concept of 'the Member State in which the act of infringement has been committed or threatened' in Article 97(5) (now 125(5)) EUTMR.[433] The Court concluded that the wording of the latter provision refers to an active conduct from the person causing the infringement and that therefore the linking factor here relates to 'the Member State where the act giving rise to the alleged infringement occurred or may occur, not the Member State where that infringement produces its effects'.[434] Therefore, according to this interpretation, the grounds of jurisdiction pursuant to Article 97(5) (now 125(5)) EUTMR would be narrower than the ones under Article 7(2) BR.[435] However, while using only the linking factor

[427] Case C-360/12 *Coty Germany v First Note Perfumes* ECLI: EU:C:2013:764.
[428] Case C-172/18 *AMS Neve and Others* ECLI:EU:C:2019:674.
[429] Case C-360/12 *Coty Germany* ECLI: EU:C:2013:764, para 23.
[430] Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union trade mark, [2017] OJ L154/1. Article 125(5) EUTMR reads: 'Proceedings in respect of the actions and claims referred to in Article 124, with the exception of actions for a declaration of non-infringement of an EU trade mark, may also be brought in the courts of the Member State in which the act of infringement has been committed or threatened, or in which an act referred to in Article 11(2) has been committed.'
[431] Case C-360/12 *Coty Germany* ECLI: EU:C:2013:764, para 29.
[432] Ibid. paras 26-28.
[433] Ibid. 31, 32.
[434] Ibid. 34.
[435] See Annette Kur, 'Abolishing Infringement Jurisdiction for EU Marks? – The Perfume Marks Decision by the General Federal Court of Justice' (2018) 49 IIC, 452—465, noting that this approach may well affect the effective

of the place of the event giving rise to the damage may be more straightforward in the case of offline infringements, this can be more problematic in relation to infringements occurring on the Internet. It would indeed be difficult to locate the place of the relevant act of infringement in the context of online activities.[436] In addition, it is relevant to note how it usually happens that the place where the damage of an online infringement occurs, coincides with the Member State where the IP right owner is domiciled and carries out her activities. In these cases, it is therefore clear that the IP owner would prefer to sue in that State.

The CJEU had the opportunity to clarify the application of its *Coty Germany* decision to infringements committed over the Internet in its subsequent *AMS Neve* judgment. The case concerned a company domiciled in Spain, which was offering through its website products to consumers located in the United Kingdom and which were deemed to infringe the EUTM and UK trademark of a British company. Here, it is interesting to note that the factual situation is partly different form the case in *Coty Germany,* where the infringing goods had been introduced in the Member State where the complaint had been filed due to resales by a third party and not by the defendant herself, as instead occurred in *AMS Neve.* In any case, while, according to the CJEU case-law concerning the interpretation of Article 7(2) BR, English courts certainly have the jurisdiction to hear the complaint concerning the UK national trademark, the referring Court of Appeals of England and Wales questioned its own jurisdiction in relation to the EUTM in light of *Coty Germany* interpretation. Nevertheless, in *AMS Neve*, the CJEU adopted a partly different approach and held that, for the purposes of Article 97(5) (now Article 125(5)) EUTMR, an EUTM infringement is deemed to be committed in 'the place of the Member State within which the consumers or traders to whom that advertising and those offers for sale are directed are located, notwithstanding the fact that the defendant is established elsewhere.'[437]The decision is not in contradiction with *Coty Germany*, considering the mentioned differences between the factual situations. However, it is evident how in EUTM cases the CJEU introduced a new 'targeting activities' criterion, meaning that for the EUTM courts to confirm jurisdiction, the defendant must have targeted her commercial activities to the market of that Member State.

When it comes to the UPCA, the wording of Article 33(1)(a) UPCA, referring to the place where 'the infringement has occurred or may occur', may lead to interpret the provision as only referring to the *locus actus*. However, it is here suggested to follow an interpretation aligned to the principles set by the CJEU case law in relation to Article 7(2) BR. In the context of the UPCA, there is in fact no specific reason why Article 33(1)(a) UPCA could not be interpreted as Article 7(2) BR, as instead held by the CJEU in relation to Article 125(5) EUTMR.[438] Therefore, also under

enforcement of unitary IP rights, as long as the competence of the courts to hear actions for infringement is being curtailed.

[436] In this regard, see also Eleonora Rosati, 'International jurisdiction in online EU trade mark infringement cases: where is the place of infringement located?' (2016) 38(8) European Intellectual Property Review, 482-491.

[437] CJEU C-172/18 *AMS Neve and Others* ECLI:EU:C:2019:674, para 47.

[438] CJEU C-360/12 *Coty Germany* ECLI: EU:C:2013:764, paras 26-29.

Article 33(1)(a) both the *locus actus* and the *locus damni* shall be deemed relevant to establish which division is competent to the extent that they fall within the territory of protection of the CMSs. This interpretation would both avoid any limitation to the enforcement and would guarantee an alignment with the BR principles and related case-law. In any case, in this context, it must be recalled that according to the principle of territoriality, the patent is protected only against specifically defined acts which have to take place within the territory of protection. However, pursuant to Article 34 UPCA, any competent division can decide on all infringing acts in all CMSs where a European patent is protected.[439] This does not pose any problem in relation to EPUEs, since in that case the territory of protection is the territory of all CMSs.

As regards the competence of the domicile division, Article 33(1)(b) UPCA does not literally follow the definition of Article 63 BR for companies and legal persons, which alternatively relies on the statutory seat, the central administration and the principal place of business. The broader wording of Article 33(1)(b), according to which any "place of business" may suffice, seems therefore to suggest a broader scope of application than the scope available under Article 4 BR, , as the term 'place of business' covers both the other two connecting factors of 'statutory seat' and 'central administration' and any other place where some business activities are carried out.[440] This may well also include a subsidiary, even if Article 33(1)(b) does not explicitly refer to the place of the subsidiary.[441]

As a result, as regards the application of the *forum commissi delicti* rule, litigating before the UPC would not be particularly different for a start-up from litigating under the current system, if the UPC interpreted Article 31(1)(a) UPCA along the same lines of the principles set by the CJEU case-law in relation to Article 7(2) BR. When it comes to the competence of the domicile division instead, it is clear that the wording of Article 33(1)(b) UPCA is broader than that of Article 4 BR, as it may refer to any place where there are business activities. Although this broad wording and interpretation is to some extent still in conformity with the proximity principle, it opens the door to several forum shopping opportunities. And the remaining uncertainty concerning which types of entities should be considered for the purposes of Article 33(1)(b) UPCA may render it more difficult for businesses to plan a litigation or defensive strategy.

a) Multiple Defendants (Article 33(1)(1)(b) UPCA)

Moreover, for cases in which more than one defendant is involved, according to Article 33(1)(1)(b) UPCA, it is sufficient that one of them has its 'domicile' in the CMS with the

[439] The issues and incongruences deriving from such provision will be dealt with under Section C.

[440] In this sense and comparing it with the German term '*Geschäftssitz'*, see Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 585.

[441] Aurelio Lopez-Tarruella 'Tutela Effectiva de la Propriedad Intelectual y Forum Shopping' in Juan Antonio Moreno Martínez (ed.), *Problemática actual de la tutela civil ante la vulneración de la propiedad industrial e intelectual* (Dykinson 2017) 325, 357.

regional/local division where the plaintiff wants to bring the action. So far, this is consistent with the correspondent provision of Article 8 BR. However, Article 33(1)(1)(b) also provides that 'an action may be brought against multiple defendants only where the defendants have a commercial relationship and where the action relates to the same alleged infringement', where the meaning of 'same commercial relationship' is not further clarified.[442] Such wording differs from the requirements set by Article 8(1) BR requiring that 'the claims [be] so closely connected that it is expedient to hear and determine them together to avoid the risk of irreconcilable judgements resulting from separate proceeding'.[443] The UPCA provision is therefore broader to the extent that it does not require a close connection and it is narrower since it requires the existence of a commercial relationship and the same alleged infringement. For these reasons, it has been noted that the provision is less restrictive than the conditions that have been set under the 'spider in the web' theory as applied by Dutch courts.[444] Tilmann observes that, regardless of the correct interpretation of Article 8(1) BR, the UPC should strictly follow the interpretation of Article 8(1) BR when applying Article 33(1)(1)(b) UPCA.[445] This is so because in the case of a domicile action against a first defendant domiciled within a CMS, Art 71b(2)(1) BR allows for joining an action against a second defendant not domiciled in an EU Member State pursuant to Article 8(1) BR. Therefore, it is possible to argue that the same rule has to be applied in the case of a second defendant who is domiciled in an EU Member State that is not a CMS.[446]

As a consequence, the implications that the multiple defendants' rule may have for start-ups as plaintiffs and/or defendants in comparison to the current framework may vary depending on how the UPC will interpret such provision. If the UPC will align its interpretation to the case law which evolved from the BR, no substantial difference would occur in this regard. However, if the UPC will apply the provision literally, the implications may depend on the meaning that it would be attributed to the term 'commercial relationship'. If that would be interpreted more broadly, the likelihood of a joinder of action will be higher. As a result, this could be detrimental for a start-up as a defendant, since the company would be more often required to join an action which takes place before a less convenient forum. Nevertheless, it is also true that it may be more advantageous for a start-up company to have the support of another commercially related company during litigation and that therefore the proximity of litigation would not play too big a role in this context. Furthermore, a broader interpretation of the provision would help start-ups in the position of plaintiffs. Indeed, the increased number of consolidations of actions would actually more often allow a start-up to sue several defendants within a sole proceeding, rather than having to file separate ones. Therefore, when it comes to considering the implications for

[442] Massimo Scuffi, *Il Nuovo Sistema Europeo dei Brevetti. Il Tribunale Unificato e il Regolamento di Procedura* (Giuffré Editore 2017) 84.
[443] See above Section B. II. 1.2 c).
[444] On this opinion see Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 640.
[445] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 641.
[446] Ibid.

start-ups, contrary to Tilmann's observation, it seems that a broader interpretation and more extensive use of the multiple defendants' rule in comparison to the current Article 8(1) BR situation, would be advisable and overall beneficial for start-ups both as plaintiffs and as defendants. This is so because start-ups would also benefit as co-defendants since, in such situation, they will typically be sued together with incumbents with which they are involved in commercial relationships.[447] The advantage here is that, in such a position, they can join forces and get support from the co-defendants.

b) Defendant without place of business in territory of the CMSs (Article 33(1)(3) UPCA)

Pursuant to Article 33(1)(3) UPCA, in the cases in which the defendant does not have her residence, principal place of business or place of business within the territory of the CMSs, the plaintiff has the option to bring an action also before the central division. As noted by Tilmann,[448] this provision conflicts with Article 6(1) BR, according to which the absence of domicile in the territory of a CMS would result in the application of the jurisdictional rules of national law. These rules will typically accept domestic jurisdiction, if the place of the infringement is within the national territory. Furthermore, the rule is also not justified on the basis of Article 4 BR, considering that none of the seats of the central division (Paris, Munich or Milan) are close to a defendant who is outside of the CMSs. Thus, the more appropriate criterion for allocating jurisdiction within the UPCA for defendants without domicile in the CMSs should have been the place of infringement, following the model of Article 7(2) BR, which would guarantee the proximity of the litigation at least to the defendant's activities. The additional jurisdiction of the central division under Article 33(1)(3) UPCA is based on erroneous premises. The idea behind Article 33(1)(3) was to provide the plaintiff with an alternative for not being able to bring the action at the defendant's domicile, since the defendant's domicile rule would lead to jurisdiction outside the territorial reach of the UPC. The rationale behind this assumption was the idea, deriving from Article 4 BR, that bringing an action before the domicile of the defendant provides the plaintiff with the advantage that all infringements within the Union are covered, while actions brought at the place of infringement pursuant to Article 7(2) BR only cover the infringement occurred in that territory.[449] Yet such justification cannot be accepted in the context of the UPC, considering that every decision of any division of the UPC will cover all infringements in the CMS according to Article 34 UPCA.[450] This means that for the start-up as a plaintiff, the situation will not particularly change in comparison to the current framework. However, from the defendant's perspective, such departure from the Brussels framework is more detrimental, to the extent that it forces the start-up in such a position to litigate before the central division. In this regard it is

[447] Cfr, Chapter I of the present dissertation.
[448] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 632.
[449] In this sense Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 642.
[450] Ibid.

however important to note that Article 33(1)(3) UPCA may well be applicable only in a limited number of cases. The provision indeed applies to cases in which the infringement is located within the territory of the CMS, while the 'place of business' is not. However, the wording of Article 33(1)(b), which refers to any 'place of business', is broad and may encompass any commercial activity.[451] Therefore, in the majority of cases, the place of infringement will coincide with the commercial activity and thus, with the 'place of business'. However, this may not occur in cross-border cases involving the use of Internet and in which an actor performs some parts of the claims of the Internet patent in one jurisdiction, while the effects of the invention are realised by the same or even other actors in another jurisdiction. By way of example, a computer program product[452] is developed, installed and used through the Internet and other programmable communication devices, and the parts and modules that form this product are accessible and used at transnational level.[453] In such a scenario, an actor implementing a computer program technology in one country may be accused of infringing the patent for a computer-implemented invention if she sells or supplies the computer program technology over the Internet to a customer in another country where the invention is protected under a patent.[454] It is certainly true that, from the defendant's perspective, Article 33(1)(3) UPCA will only concern start-ups that do not have a place of business in any CMS and thus they will be less relevant from a EU innovation policy perspective. Furthermore, in Internet-related cases, the competence of the division of the place of infringement, meant to serve the purpose of guaranteeing the proximity to the infringer activities, may well not be required to that aim. Indeed, the use or sale of the allegedly infringing invention may well occur regardless of the presence of any place of business, or subsidiary, thereby excluding any specific 'familiarity' with the division located in the CMS where the infringement occurred. Nevertheless, the competence of that division would at least ensure an alignment with the principles of the BR.

c) CMSs without a Local Division (Article 33(1)(4) UPCA)

Furthermore, Article 33(1)(4) provides that if the CMS does not host a local division or does not participate in a regional one, the central division has exclusive competence for infringements in that state and for a revocation of the patent in case of a counterclaim. It must in any case be

[451] See above Section B. II. 2.1 a).

[452] A computer program can be patentable and avoid exclusion under Article 52(2) and (3) EPC to the extent that the claims explicitly mention the use of any hardware, of a computer or a computer-readable storage medium. See EPO Opinion of the Enlarged Board of Appeal of 12 May 2010, G 0003/08 para. 10.13.

[453] Nari Lee, 'Computer Program Patent Infringement in Global Economy' (2010) 4 available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1677311 (accessed on 10 September 2020). For a detailed example on the functioning of cloud computing services see Ibid., 8-9.

[454] For example, in a patent infringement case in the United Kingdom. concerning an Internet-base gambling system which was operated from a host computer located in Antigua, the Court of Appeal found an infringement holding that the supply of the related CD in the United Kingdom has to be intended as to put the invention into effect in the United Kingdom and that the location of the host computer did not prevent the assertion of rights in the United Kingdom. See *Menasche Bus. Mercantile Ltd. v William Hill org. Ltd,* [2002] EWXA (Civ) 1702, para. 33.

highlighted that such situation may rarely occur as, at the time of writing, Bulgaria is the only CMS that has not opted for any local or regional division.[455] Nevertheless, also this provision departs from the principles of the BR.[456] Indeed, for the cases in which the states of the central division does not host a local division, the central division is deemed to be competent although the defendant does neither have his seat in the state of the central division (para 1(b)) nor the infringing acts have been committed in that state (para 1(a)). It is therefore evident that the state of the seat of the central division will be different from state(s) of the courts with jurisdiction under Articles 4 BR and Article 7(2) BR.[457] The main reason is to avoid an excessive expansion of the jurisdiction of one local or regional division as opposed to the one of the other local or regional divisions.[458] However, as a consequence, such provision does not imply a particular change for start-ups in the position of plaintiff, yet it is more disadvantageous for start-ups as defendants in comparison to the current framework.

2.2. Lis Pendens and Infringement in the Territory of at least Three Regional Divisions (Article 33(2) UPCA)

The first and third sub-paragraphs of Article 33(2) concerning *lis pendens* must be read together. They also relate to actions as listed in Article 32(1)(a), (c), (f), (g) and (h) and deny jurisdiction to the division later seised if such action is already pending before another division. The provision is in line with Article 29(1) BR, which provides that the court later seised is required to stay the proceedings until the jurisdiction of the court first seised is established. Accordingly, Article 29(3) BR requires the court later seised to contact the first one and wait for this court to establish its jurisdiction. Due to the similarities between Article 33(2)(1) and (3) UPCA with the provisions of the BR, this 'internal *lis pendens*' rule does not pose particular issues or implications for start-ups in comparison to the current scenario.

On the contrary, the regional division clause included in Article 33(2)(2) UPCA may well cause issues since it departs from the mentioned principles. Indeed, if an action referred to in Article 32(1)(a) UPCA is pending before a regional division and the infringement occurs in the territories of three or more regional divisions, the concerned regional division, at the request of the

[455] For an overview of all Contracting Member States and local and regional divisions see https://www.unified-patent-court.org/en/court/locations (accessed on 12 December 2022). The existing scenario can of course change in the future, including the number of possible future CMS deciding not to opt for any local or regional divisions.
[456] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 633.
[457] Aloys Hüttermann, *Einheitspatent und Einheitliches Patentgericht* (Carl Heymanns Verlag, 2016) 90.
[458] In this sense Massimo Scuffi, *Il Nuovo Sistema Europeo dei Brevetti. Il Tribunale Unificato e il Regolamento di Procedura* (Giuffré Editore 2017) 84; Massimo Scuffi, 'Il Tribunale Unificato dei Brevetti: Evoluzione Storica, Ordinamento e Regole Procedimentali' in Costanza Honorati (ed.) *Luci e Ombre del Nuovo Sistema UE di Tutela Brevettuale* (Giappichelli Editore 2014) 73, 90. In this regard, noting that the provision represents an adequate solution to meet the goal of concentrating the litigation before a single division see Aurelio Lopez-Tarruella 'Tutela Effectiva de la Propriedad Intelectual y Forum Shopping' in Juan Antonio Moreno Martínez (eds) *Problemática actual de la tutela civil ante la vulneración de la propiedad industrial e intelectual* (Dykinson 2017) 325, 357.

defendant, must refer the case to the central division. As a consequence, the action is moved from the place of the acts of infringement to a place where no infringement has occurred, thereby departing from the model of Article 7(2) BR. This regional clause does therefore undermine the right of the plaintiff to choose the division under the provisions that mirror the principles of the BR.[459] As a consequence, this provision is particularly critical more in the case in which a start-up happens to be a plaintiff rather than a defendant. Indeed, the start-up defendant can choose whether to request the referral or not. All the more, it seems unlikely that a start-up in such position would have any interest in forcing the dispute to take place far from the more convenient forum. Conversely, in the position of plaintiff, the start-up would actually be deprived from the advantage deriving from the possibility to choose the most suited division.

2.3. Right to Bring a Counterclaim for Revocation (Article 33(3) UPCA)

Article 33(3) UPCA introduces the right to bring a counterclaim for revocation in response to an action of infringement. This means that it is not possible to start an autonomous action for revocation (Article 32(1)(d) UPCA) as long as the infringement action is ongoing. Yet, this provision merely provides the start-up defendant with the option of a counterclaim for revocation. This does not pose issues from the point of view of the compatibility with the BR and in particular with its Article 24(4), which confirms exclusive jurisdiction of the courts of the state of registration.[460] This is so because the UPC is a common court to all CMSs and, on the basis of Article 71b(1) BR, substitutes the jurisdiction of the courts in the state of registration. Nevertheless, when it comes to the issues related to the proximity of litigation, the venue of litigation would depend on the decision of the UPC division pursuant to Article 33(3) UPCA. Indeed, based on this provision, in the case in which such counterclaim for revocation is brought before the infringement division, the judges can choose between three options: (a) proceed with both the action for infringement and with the counterclaim for revocation, by adding a technically qualified judge to the panel, (b) transfer the counterclaim for revocation, but not transfer the infringement action, to the central division and within this case also decide whether to stay the infringement proceedings or opt for their continuation, and (c) transfer both the infringement action and the counterclaim for revocation to the central division.[461]

Option (c) appears to be particularly problematic in the light of the concerns relating to the litigation venue and to the compatibility with Brussels principles. The envisaged transfer of action is against the interests of start-ups both as plaintiffs and as defendants, in particular in relation

[459] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 634.
[460] See above Section B. II. 1.3.. See also CJEU C-4/03 *GAT v LUK* ECLI:EU:C:2006:457.
[461] On the procedure for applying Art 33(3) UPCA see Pieter Callens and Sam Granata, *The Unitary Patent and the Unified Patent Court* (Wolters Kluwer 2017) 156. In particular, Rule 37 RoP provides that after the closure of the written procedure the panel shall decide in relation to the application of Art 33(3) UPCA and the parties shall be given the opportunity to be heard. Thus, pursuant to Rule 264 RoP, the Court may request the parties to provide written submission within a specific period or invite them to an oral hearing.

to the fact that the infringement action would then be dealt with far away from the place of the alleged infringement. It is clear that such referral is justified on the basis of having to guarantee a sufficient degree of technical expertise in order to ensure a proper and correct decision on a potential revocation.[462] Nevertheless, the intervention of the technical expertise as foreseen in option (a) should be sufficient to guarantee a correct understanding of the patent and also of its equivalent technical effects.[463] The intervention of a court-appointed expert in support of the panel is claimed to be counterproductive since it might cause an increase in the length of proceedings.[464] Yet it may better respond to the need of additional technical expertise than a complete referral of the case to the central division with all its disadvantages. Certainly, it must be seen whether in terms of costs it may well be better to bear the expenses of an additional technical expert or to face the consequences of decentralized litigation.

Whether a court will refer the counterclaim for revocation only to the central division (option (b)) depends on the discretion of the regional division.[465] It is therefore not easy to predict to what extent this will occur and therefore to what extent this may have detrimental implications for a start-up having to litigate as a plaintiff or as a defendant in a less convenient forum. The practice that will be developed by local divisions will have an important role in the decision on where to start proceedings. A patentee is unlikely to be in favour of a stay of her infringement action, while the proceeding on validity is pending before the central division. Conversely, if a division often bifurcates proceedings, it may well become a more attractive forum, where patentees are encouraged to commence proceedings.[466] In any case, this rule on the competence of the infringement division for infringement and the competence of the central division for the revocation action and/or counterclaim for revocation is compatible with Article 24(1) BR, since in this case the UPC represents the court of the state of registration, regardless of whether it is deciding through the infringement division or through the central one.[467] Therefore, from this point of view, there are not too many differences in comparison to the current situation. And such differences would depend on the extent at which the panel would make use of such an option. There are some cases in which it would be more advisable to split the case and transfer

[462] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 651.
[463] Equivalence pursuant to Art. 2 of the Protocol to Art. 69 EPC may well be very complex to understand. In particular, the question of how the UPC will interpret equivalence remains to be seen. This is due to the different interpretations that have developed during the last years in the case-law of EU Member States. It is not within the purpose of the present dissertation to provide an extensive explanation on the application of the doctrine of equivalence. For a comparative overview of the most common approaches in this regard see Karen Walsh, 'Promoting harmonisation across the European patent system through judicial dialogue and cooperation' (2019) 50 IIC 422.
[464] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 651.
[465] Massimo Scuffi, 'Il Tribunale Unificato dei Brevetti: Evoluzione Storica, Ordinamento e Regole Procedimentali' in Costanza Honorati (ed.) *Luci e Ombre del Nuovo Sistema UE di Tutela Brevettuale* (Giappichelli Editore 2014) 73, 91.
[466] In this regard see Michael Carter, 'To the UPC and Beyond! Is this the End of Forum Shopping?' (2016) CIPA Journal 12, 15.
[467] Winfried Tilmann, Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (Oxford University Press 2018), p. 648.

the counterclaim for revocation to the central division and others in which that would be not necessary. In particular, if the counterclaim for revocation requires a considerable effort and expenses and could not easily be decided without the need to involve a court expert, then it seems reasonable to consider the possibility of a referral. That situation may especially occur when the infringement action would otherwise be very much likely to be granted and, hence, the focus of the case is primarily on the action for revocation, or where new and problematic prior art is presented, so that it is evident that the infringement action would have to be dismissed. On the contrary, in the case in which the question of invalidity does not pose particular issues and seems to be quite straightforward, the transfer can and should be avoided.[468]

Once that the local division decides to refer the counterclaim for revocation to the central division, it must then decide whether to stay the infringement proceedings until a decision on the revocation claim is rendered or to continue these proceedings. In the latter scenario, the counterclaim for revocation before the central division and the infringement action would be dealt with at the same time, thereby creating a situation of bifurcation.[469] This is compatible with the BR and does not pose particular issues in relation to the matter at hand, namely, the proximity of litigation. Yet such split situation raises several issues for a start-up in the position of defendant.[470]

2.4. Action for Declaration of Non-Infringement and Action for Revocation (Article 33(4) UPCA)

Pursuant to Article 33(4), 1st sentence, UPCA both actions for declaration of non-infringement (Article 32(1)(b)) and actions for revocation (Article 32(1)(d) and (e)) must be brought before the central division.[471] This provision is also problematic as regards the compatibility with the principles of the BR, in particular when it comes to the negative declaratory action. Indeed, in this case, the division of the domicile of the future plaintiff or the infringement division should be competent against the backdrop of the application of Article 7(2) BR to such actions.[472] Therefore, a start-up that wishes to make use of this valuable litigation tool would have to face the consequences of litigating in a less favorable venue. As a consequence, despite the existence of this possibility of action as such, this case allocation may reduce the likelihood that a start-up will actually make use of it. Conversely, when it comes to the revocation action, that requirement

[468] Winfried Tilmann, Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (Oxford University Press 2018) 653; Pieter Callens and Sam Granata, *The Unitary Patent and the Unified Patent Court* (Wolters Kluwer 2017) 156.

[469] This is not the only one 'splitted situation' foreseen by Art. 33. The ones occurring pursuant to para 5 and para 10, will be analysed further below. A more detailed analysis of the consequences of bifurcation for start-ups will follow under Section C.

[470] Ibid.

[471] Aloys Hüttermann, *Einheitspatent und Einheitliches Patentgericht* (Carl Heymanns Verlag, 2016) 91, 92.

[472] In this regard see CJEU C-133/11 *Folien Fischer* ECLI:EU:C:2012:664. For a discussion in this regard see above Section B. II. 1.2 b).

does not pose particular problems of compatibility with the BR.[473] However, that requirement has both negative and positive implications for a start-up. On one hand, under the current system, a start-up can bring the revocation action only in the jurisdiction in which she wants to use the invention and which can be potentially closer to the interests of the start-up than the central division. On the other hand, under the UPC system, a start-up has the opportunity to contest the validity within the whole CMS territory, by bringing only one action.

Article 33(4), 2nd sentence, UPCA provides that if an infringement action (Article 32(1)(a)) is pending, then the division which is competent for the negative declaratory action and for the action for revocation is not anymore the central division but the local or regional division before which the infringement action is pending. In relation to the action for declaration of non-infringement, this clause is applicable in the cases in which the action is based either on a limitation of the patent right (Article 27 UPCA), on a prior right of use (Article 28 UPCA) or on exhaustion of the patent right (Article 29 UPCA; Article 6 EPUE Reg).[474] In any case, t, in comparison to the current framework, he clause at hand does not have any more detrimental nor more positive effect for a start-up litigating in the UPC.

2.5. Counterclaim for Infringement before the Central Division (Art. 33(5) UPCA)

In case of a pending action for revocation before the central division, Article 33 provides the patent holder who wants to file a counterclaim for infringement with the choice between bringing such action before the competent local or regional division and the central division. The purpose of the latter option is evidently to allow the plaintiff to have also the action for infringement to be decided by the central division, which can decide upon it together with the pending action for revocation. While, on the one hand, such merging of proceedings may be economically efficient, such centralisation of proceedings departs again from the principles of Articles 4 and 7(2) BR.[475] As a consequence, the situation stemming from such a provision may be worst for a start-up who acts as defendant to the revocation action, raising the counterclaim for infringement.

In this context, it has to be noted that the decision of the defendant in the revocation proceedings to bring the action at the local or regional division will not necessarily help. It has to noted that in such a situation Article 33(5), last sentence, UPCA provides that the local or regional division

[473] As analysed above, in this regard, the UPC acts as the court of the state of registration. See analysis above concerning Article 33(3) UPCA.

[474] If the action is instead only seeking a declaration that the performed acts do not fall within the acts referred to in Arts 25 or 26 UPCA or Art. 5 EPUE Reg., it is claimed that negative declaratory action would be inadmissible for lack of legitimate interest in obtaining such a relief. Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 654.

[475] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 656.

has the right to proceed pursuant to Article 33(3) and transfer the infringement action to the central division. This therefore becomes particularly problematic for a start-up who act as defendant to the revocation action if the local division additionally forces it to litigate the infringement action before the remote central division.

2.6. Negative Declaratory Action Prior to the Infringement Action and Party Agreement on Competence (Art. 33(6), (7) and (8) UPCA)

Furthermore, Article 33(6) UPCA provides that if the patent holder or the licensee brings an action for infringement before a local or regional division within three months after the filing of a respective action for declaration of non-infringement before the central division, the central division will stay the action for declaration of non-infringement. To a certain extent this provision prevents the defendant (plaintiff of the negative declaratory action) from causing a 'torpedo' situation.[476] However, as for the competence of the central division, the same criticism as presented above applies. In any case, even after the expiry of the time limit, the patent proprietor or licensee will still be able to bring an action for infringement, which is available at any time under Article 33(1) UPCA. The only difference is that in case of later filing the infringement action will not have the consequence of imposing a stay of the negative declaratory action.

Moreover, it is questionable to what extent the possibility provided to the parties under Article 33(7) UPCA to agree to bring actions listed in Article 32 (1)(a)-(h) before the division of their choice would play in favour of a litigating start-up, no matter whether in the position of defendant or plaintiff. Indeed, the need to find an agreement would *per se* tip the balance in favour of the party who has more bargaining power.

Pursuant to Article 33(8) UPC, an independent action for revocation and a counterclaim for revocation are admissible even if an opposition can still be filed or if opposition proceedings are still pending before the EPO.[477] The fact that the UPCA allows for parallel proceedings (opposition and revocation) has implications more for start-ups as plaintiffs (patentees) rather than as defendants (non-patentees). This is so because, in the position of defendants (non-patentees), start-ups can decide whether they start parallel proceedings or simply continue the proceedings of their first choice. Such decision should be influenced by case-by-case considerations concerning costs and strategical convenience. And, since the choice is with the start-up

[476] Massimo Scuffi, *Il Nuovo Sistema Europeo dei Brevetti. Il Tribunale Unificato e il Regolamento di Procedura* (Giuffré Editore 2017) 85; Aurelio Lopez-Tarruella 'Tutela Effectiva de la Propriedad Intelectual Y Forum Shopping' in Juan Antonio Moreno Martínez (eds) *Problemática actual de la tutela civil ante la vulneración de la propriedad industrial e intelectual* (Dykinson 2017) 325, 360.

[477] The EPC does not provide anything in relation to whether an action for revocation is still admissible or not, while opposition proceedings are still pending or while it is still possible to file such an opposition. Therefore, Germany and Austria do not allow an action of revocation while opposition proceedings are pending (§ 81(2) PatG; § 11 Patentverträge-Einführungsgesetz – PatV-EG). On the contrary, in the UK courta decide on a case-by-case basis which procedure it is more advisable to stay or not to stay.

challenging the validity of the patent, no particular concern arises in relation to the venue of litigation, which is not different than the one under the current framework. Conversely, the situation turns to be detrimental to a start-up that happens to be the patentee, since in this case the start-up would be forced to defend the patent simultaneously in two parallel venues.

To conclude the analysis, Article 33(9) UPCA provides that actions against the EPO because of decisions made by the EPO exercising its the powers pursuant to Art 9 EPUE Reg. must be brought before the central division. Article 33(10) UPCA requires the parties to inform the UPC on any pending opposition or limitation proceedings. Both Article 33(9) and 10 UPCA are neutral as regards the interest of start-ups to litigate in a venue in its proximity.

III. Implications for Start-Ups and Proposals for Reform

From the preceding comparative analysis, it follows that in several cases the rules on the allocation of competence within the UPC do not follow the principles of the BR with potentially harmful consequences for both plaintiffs (patentees) and defendants (non-patentees), depending on the situation taken into consideration. The greatest disadvantages derive from the fact that, despite of the attempt to construe a decentralized common court, litigation is going to occur more and more often abroad, in comparison to what occurs within the current framework. The majority of the cases in which it is possible to foresee potential harmful consequences relates to the position of the defendant (non-patentee). Yet, regardless of the specific position in which the parties may find themselves in the individual case, it is evident that the weakest parties, hence the most financially constrained businesses, including start-ups, are the ones who will suffer more from the changes in the patent litigation landscape. As a consequence, this imbalance results to be not only to a certain extent more in favour of the plaintiff (patentee) but in particular at the advantage of the financially and strategically stronger party. This means that an attempt to rebalance the rules of the game is called for.

In relation to the case of the defendant without a place of business in the territory of a CMS (Article 33(1)(3) UPCA) for which the central division is competent, Tilmann suggests that the question concerning whether Article 33(1)(3) UPCA can be applied or not, should be referred to the CJEU.[478] It is clear that the CJEU does not have the power to interpret the UPCA as an international agreement, but only in case of violation of EU law. In his opinion, this would however be a question of interpretation and application of Articles 6(1) BR and 71b(2) BR, which have relevance for the competences of the divisions of the UPC.[479] The CJEU would therefore be answering a question on the interpretation and application of the Brussels Ibis Regulation in the

[478] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 633. For a similar proposal in relation to Art. 33(1)(4) UPCA, Art, 33(2)(2) UPCA, Art. 33(6) UPCA and Art. 33(5) UPCA see Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 633, 634, and 656 respectively.
[479] Ibid.

case of a court common to the Member States. In this regard, it is however important to stress that the distribution of competences of the divisions pursuant to Article 33 UPCA is only an internal matter for the UPC and does not deal with international jurisdiction, as required for the application of the BR. Although the feasibility of a referral to the CJEU in this regard is highly questionable, it is nevertheless relevant to stress the importance of an alignment with the principles and provisions of the BR. Indeed, although formally the distribution of competence to the divisions of the UPC is an internal matter, it is in practice different from the internal distribution of competences within a court which is located only in one place. It is instead a distribution of competences between divisions which are situated in different Member States and it therefore corresponds to the situation in which the BR applies. In this context, when establishing a common court integrated into the court system of each CMS, the UPCA should provide defendants and plaintiffs with the guarantees set by the BR. Therefore, it is important to think about possible reforms to the provisions of the UPCA that would help rebalance the mentioned inconsistencies with the principles of the BR. Such amendments could be implemented at the stage of a future general revision of the UPCA.

This being said, the following can be suggested. First, for the case of absence of the place of business in the territory of a CMSs, it is advisable to substitute the competence of the central division with the competence of the division of the place of infringement. Although this alternative rule may well be less relevant from an EU innovation policy perspective,[480] it will however ensure an alignment with the BR and thus more coherence with the other provisions as amended according to the present proposals. Second, the already mentioned and envisaged solution of moving the place of litigation to the division of the CMS which is closest to the CMS without division rather than in the central division, seems the best solution for the cases in which the relevant CMS is without a local division (Article 33(1)(4) UPCA). Third, also the regional division clause (Article 33(2)(2), should be changed by deleting the possibility to move the competence to the central division at the request of the defendant.[481] Indeed, leaving the competence in the hands of the local or regional division would not constitute a real disadvantage for a start-up defendant, which may well not even make use of the possibility to request the referral. Yet such reform would help a start-up plaintiff (patentee), which would then be protected against strategic decisions of a potentially stronger defendant. Similar considerations may well apply in relation to the envisaged Article 33(5) UPCA providing the patent holder with the choice of the division where to file an infringement action once that opposition or an invalidity action has been filed. Also, in this case, the provision should be amended by limiting the competence to the place of infringement. Last, the competence for the declaration of non-infringement (Article 33(6) UPCA) should also be moved from the central division to the division at the place of infringement. The envisaged amendments appear feasible

[480] See above Section B. II. 2.1. b).
[481] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 634.

and coherent and would result in a more balanced system, which in turn would improve the situation for potential start-up litigants.

The proposed amendments would operate in the same manner for all market players. Indeed, there would be no justification nor a specific legal basis for implementing rules only tailored for financially constrained start-ups. Such a solution would not only be discriminatory with regard to the other market players, but also almost impossible to implement. Indeed, this would require to adopt a strict and objective definition of the term start-up, which not always may correspond to the real needs that the amendments would aim to address and whose fixed characteristics may be not suited to follow the developments of a market in constant change. As a result, other financially constrained businesses, which may not fall within the strict definition but present the same interests and needs, may well fall outside such definition. In addition, an attempt to protect only one group of market players in the context of jurisdictional rules may be counterproductive. Indeed, as a consequence of tailored-made provisions, the other market players may well be discouraged from entering into business transactions with the protected group of market actors, because that would expose them to a clearly more disadvantaged position. Accordingly, the proposed amendments do not discriminate on the basis of the specific characteristics of the market players, but rather attempt to insert more balance within the overall picture in an objective and non-discriminatory manner.

C. The Territorial Scope of Judgments and their Implications for Start-up

Another point of concern relates to the extent of jurisdiction, namely, as regards the territorial scope of judgments of the UPC.

The territorial scope of a court decision is a matter which can have several implications in particular for start-ups. It is indeed evident that the broader the territorial reach, the greater would be either the risk or the advantage deriving from the outcome of a decision. Of course, depending on the position in which the start-up litigant finds itself, the implications will differ and could be either more positive or negative. Nevertheless, it is clear that the potentially negative implications that may derive from a more extended scope of jurisdiction may affect more a start-up litigant in comparison to what would occur to other market players. This is so because of their generally weaker and financially constrained situation. This justifies analysing the extent of jurisdiction of the UPC in comparison to the system of national courts. With this aim, the present Section provides an analysis of Article 34 UPCA and compares it to the extent of scope of jurisdiction of the system of national courts. In addition, in the context of this analysis, the Section explores how certain types of decisions, whose consequences may well be

particularly relevant for start-ups, are taken and whether the related provisions strike a proper balance of the interests of the parties involved. This is so because the manner in which certain decisions are taken and the factors considered in that context may well play a role in mitigating the potentially negative consequences deriving from a broad territorial scope of jurisdiction. Preliminarily, it must be stressed that the scope of jurisdiction can be more or less unrestricted or restricted. The former, which is also known as, among others, cross-border jurisdiction,[482] general jurisdiction[483] or central jurisdiction,[484] gives the court the competence to hear a claim for infringement regardless of where the infringement occurred. Conversely the latter, known also as territorial jurisdiction,[485] allows a competent court to hear a claim for an infringement that occurred within the Member State where the court is located. Unrestricted jurisdiction presents the advantage, both for plaintiffs and defendants, to potentially save time and costs, since the entire case can be addressed in the same proceedings and judgment. The restricted jurisdiction presents the advantage of litigating in one national forum and then potentially using the case as a reference to induce future opponents to enter into settlements. Although unrestricted and restricted jurisdiction can both present advantages and disadvantages for both plaintiffs and defendants, for the purposes of the present study, unrestricted jurisdiction represents a high risk and potential threat to the existence of financially constrained businesses, such as a start-ups. The present Section shows that, despite of the availability of unrestricted jurisdiction under the current system of national courts, the UPC it vested with much broader scope of jurisdiction. The Section finds and proposes that only a balanced interpretation of the provisions regulating the manner in which decisions are taken can help mitigate the potential risks arising from the broad scope of jurisdiction of the UPC.

I. Scope of Territorial Jurisdiction under the Current System

1. Invalidity Decisions under the Current System

As regards the extent of jurisdiction and scope covered by the decision concerning invalidity, as explored above,[486] it is clear that in the framework of the current system, the scope is limited to the Member State concerned. Indeed, as provided by Article 24(4) BR, the courts of a Member State have exclusive jurisdiction in relation to the registration and validity of patents granted in the country. Indeed, the aim of Article 24(4) is to guarantee that in these cases, jurisdiction is concentrated in the courts most closely linked with the case both in fact and law. The importance

[482] Marta Pertegás Sender, *Cross-Border Enforcement of Patent Rights* (OUP, 2002) para. 3.115.
[483] European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (OUP 2013) Principle 2:101 comment C01 and Principle 2:203 Comment C03.
[484] Annette Kur, 'Case C-235/09, DHL Express v. Chronopost, Judgment of the Court of Justice (Grand Chamber) of 12 April 2011' (2012) 49 Common Market Law Review 753, 753.
[485] European Max Planck Group on Conflicts of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property, The CLIP Principles and Commentary* (Oxford University Press 2013) Principle 2:203 comment C03.
[486] See Section B. II. 1.3.

of the application of that provision in patent cases was first affirmed in *GAT v. Luk*,[487] where the CJEU held that the earlier version of this provision (Article 16(4) Brussels Convention, now Article 24(4) BR), despite its vague wording in this regard, should have been applied regardless of whether invalidity is raised as the main cause of action or only as a defence in the framework of infringement actions. Indeed, the court noted that a different decision would have led to undesired consequences, such as the fact that the parties would have been able, depending on how they formulate the claims, to circumvent the mandatory nature of Article 16(4) Brussels Convention (now Article 24(4) BR) and that, allowing foreign courts to decide on the validity of a patent, would have increased legal uncertainty and multiplied the risk of conflicting decisions.[488] As a consequence of the *GAT v. Luk* judgment, the plaintiff had to bring the proceeding before a French court, which had exclusive jurisdiction over the validity of the French patents at hand. The German Court instead kept the jurisdiction in relation to the infringement claims, since Germany was the country of the defendant´s domicile. As a consequence of the *GAT v. LuK* judgment, the cases against a defendant concerning validity of several parallel patents must be brought before the courts of each and every state for which such patents were granted or validated. This leads to more litigation, higher costs and a greater risk of diverging decisions, considering that national courts in the EU have to decide separately on invalidity of different designations of a European patent.[489] And due to the fact that the current version of the BR, has implemented the *GAT v. LuK* holding into wording of Article 24(4) BR, the situation of fragmentation and duplication of disputes is still present. Against this backdrop, the establishment of a Unified Patent Court for patent litigation in Europe has been welcomed as the most suited solution to the current status of fragmented litigation.[490]

2. Infringement Proceedings: Cross–Border Injunctions under the Current System and Damages

When it comes to infringement proceedings, there are mainly two ways in which cross-border infringement actions can be consolidated under the existing system. First, as regards actions against multiple defendants, Article 8 BR, under certain conditions, also allows for actions against defendants domiciled in other Member States than the ones of the court seised. And second, pursuant to Article 4(1) BR, claims concerning infringements in multiple national territories can be consolidated in one action before the courts of the defendant's domicile.

[487] Case C-4/03 *GAT v LuK* ECLI:EU:C:2006:457.
[488] Paul England, 'Cross-border actions in the CJEU and English Patents Court – ten years on from GAT v. LuK' (2017) GRUR Int. 293, 295.
[489] Paul Torremans, 'The Widening Reach of Exclusive Jurisdiction: Where Can The Widening Reach of Exclusive Juridiction: Where Can You Litigate After GAT?' in Arnaud Nuyts (ed.), *International Litigation in Intellectual Property and Information Technology* (Kluwer Law International 2008) 72.
[490] Benedetta Ubertazzi, 'Intellectual Property Rights and Exclusive (Subject-Matter) Jurisdiction' (2011) GRUR Int 199, 212.

In particular, two decisions of the CJEU, *Roche Nederland*[491] and *Solvay*[492] are important in this regard. *Roche Nederland* concerned a European patent, valid in ten EPC Contracting States and owned by two American citisens. The infringement claim was brought against a number of defendants, namely, Roche Nederland and the members of the Roche Group who had their seats in eight different countries, before the courts in The Hague. The defendants contested jurisdiction, infringement and challenged the validity of the patents. The Court of First Instance and the Court of Appeal confirmed the jurisdiction of Dutch courts but reached different decisions in relation to infringement. The Dutch Supreme Court referred to the CJEU two questions in order to clarify under which conditions, claims relating to the infringement of European bundle patents can be consolidated before one court. The referral also included the question of whether the CJEU supports the criteria for consolidation of claims under the so called 'spider in the web' doctrine as developed by the Court of Appeal of The Hague, *i.e*. in cases where the defendant companies have acted in an identical or similar manner on the basis of a common policy decided by one of them. Considering that Article 6(1) Brussels Convention (now Article 8(1) BR) did not provide any guidance in this regard and that defendants need to be protected against being sued in another state than the one of their domicile, the CJEU applied the criterion of 'irreconcilable judgments' found in the provision on *lis pendens* (Article 22(3) Brussels Convention, now Article 30(3) BR). On the basis of that criterion, the CJEU argued that consolidation of proceedings against multiple defendants could occur only where the case presents the same factual and legal situation. The CJEU therefore denied the consolidation of proceedings, arguing that the risk of 'irreconcilable judgments'[493] would not exist in the case of infringement of bundle patents by companies situated in different Contracting States even if the term 'irreconcilable judgements' were interpreted in a broad sense. Indeed, according to the CJEU, decisions by national courts which reach different conclusions would not concern the same situation of fact and law because pursuant to Articles 2(2) and 64(1) EPC, the infringement of the individual patents would be governed by different national law. The same would also apply if the 'spider in the web' criteria applied.[494] Then, the requirement of 'irreconcilable judgment' was

[491] Case C-539/03 *Roche Nederland* ECLI:EU:C:2006:458.

[492] Case C-616/10 *Solvay* ECLI:EU:C:2012:445.

[493] This criterion was initially not explicitly included in Article 6(1) Brussels Convention, but it had hence been required by case law, see also Case C-189/87 *Kalfelis* ECLI:EU:C:1988:459.

[494] Case C-539/03 *Roche Nederland* ECLI:EU:C:2006:458 para 34. For criticism on the *Roche* decision see Annette Kur, 'A Farewell to Cross-Border Injunctions? The ECJ Decisions GAT v. LuK and Roche Nederland v Primus and Goldenberg' (2006) 37 IIC 844, 850. In particular, the author notes that it is hard to argue that the risk of irreconcilable judgments does not exist in situations where the 'spider in the web' criteria apply. Indeed, in those cases both the legal and factual situation can be regarded as the same. First, the CJEU seems to have overlooked the fact that the laws of the countries for which European patents are granted are not fully autonomous and their content must comply with the rules of the EPC and, when it comes to patent infringement proceedings, in particular Article 69 EPC and the Protocol on its application apply. For this reason, it is not clear why the CJEU stated that if the courts of different Member States reach diverging decisions concerning the impact of Article 69 EPC on the scope of the patent, the differences are due to a different legal situation in the Member States. Second, as the CJEU also notes, even the factual situation at the basis of the conflict is the same for all the affiliated companies acting under a common policy.

implemented in the wording of Article 8(1) BR. The extent of application of the 'spider in the web' doctrine was then further clarified in *Solvay v. Honeywell.* In this case, the European patent was allegedly infringed by each one of the Honeywell subsidiaries individually established in a number of different Member States but with regard to infringements regarding both the patent in the country of their domicile and in all the countries of domicile of the other co-defendants. While relying on the judgment in *Roche Nederland* and therefore requiring the risk of irreconcilable judgments that could arise from the same situation of fact and law, the Court concluded that the situation at hand was capable of leading to 'irreconcilable judgments' resulting from separate proceedings, since all subsidiaries collaborated in the infringement of the same national parts of the European patent.[495] The CJEU left it therefore to the referring court to assess whether such risk exists in the case at hand, taking in consideration all relevant information in the file.[496]

Moreover, cross-border infringement actions for the infringement of patents granted for multiple states can always be consolidated in the state of the defendant's domicile pursuant to Article 4(1) BR. If the court's jurisdiction is based on the defendant's domicile, the judgment can settle the case with regard territories, hence, for all Member States for the European Union for which a patent was granted. However, the problem in such actions remains, that such consolidated proceedings will at least need to be stayed, if the defendant relies on the invalidity defence, until the court exclusively competent for the action for revocation according to Article 24(4) BR has rendered its final decision.

In addition, in relation to cross-border declarations of non-infringement, the plaintiff can bring the action either before the courts of the defendant's (patent owner's) domicile pursuant to Article 4(1) BR or before the courts of the *lex loci delicti*, hence the courts for which the relevant patent has been granted, pursuant to Article 7(2) BR. Based on the *lis pendens* rule of Article 29(1) BR, the alleged infringer can use such action strategically (as a so-called 'torpedo'), namely, in the case that it can be expected that the court seized will take considerably longer than the courts of the countries where the patent owner could bring the action for infringement, including in particular the courts of the country of the alleged infringer's domicile, to delay a final decision. While in *Soc. BL Macchine Automatiche v. Windmoeller & Holscher KG*,[497] the Italian Supreme Court denied its competence concerning a declaratory action for non-infringement under Article 7(2) BR, in *Folien Fischer,*[498] the CJEU held that the action for declaration of non-infringement falls within the scope of this provision.

Of course, Article 7(2) BR also provides a ground of jurisdiction for damages and other measures to be ordered in case of infringement. Pursuant to the CJEU's general interpretation of Article 7(2) BR, its wording 'occurred or may occur' relates to both to the place of the event which gave

[495] Case C-616/10 *Solvay* ECLI:EU:C:2012:445 para. 30.
[496] Ibid.
[497] Corte di Cassazione, *Soc. BL Macchine Automatiche v. Windmoeller & Hölscher KG* 19 December 2003, no. 19550.
[498] Case C-133/11 *Folien Fischer* ECLI:EU:C:2012:664, para. 55.

rise to the damage and the place where the damage occurred. Therefore, the claimant can decide where to sue the defendant in the courts of either one of these places.[499] In relation to IP cases, there is however a difference in the use and application of these two connecting factors, in particular concerning the scope of jurisdiction. In this regard, the CJEU held that the place where the damage occurred can only lead to the jurisdiction of the courts for which the intellectual property right has been granted.[500] When a case is brought before a court on this basis, the court is competent to decide on the infringement within its territorial jurisdiction, hence, the effects of the decision are limited only to that Member State. Instead, when patent holders rely on the place where the event giving rise to the damage occurred, they can also sue at the place where the alleged infringer has acted and if the act constitutes an infringement of patents granted under the law of several countries, the patent holder can consolidate the actions and thus the jurisdiction covers the award of damages in relation to all the harm caused by all the infringement.[501] In this regard it is also important to note that the jurisdiction of the place where the event giving rise to the damage occurred will often coincide with the jurisdiction of the defendant's domicile (Article 4(1) BR).

In addition, in this context, it is also relevant to mention Article 35 BR, concerning provisional and protective measures and its relationship with the practice of the so called 'kort geding', as developed by Dutch Courts. The 'kort geding' is a special type of summary proceedings in which the judge can decide on infringement of foreign patents against one or many, even non-resident, infringers.[502] As regards provisional and protective measures, Article 35 BR reads as follows: 'Application may be made to the courts of a Member State for such provisional, including protective, measures as may be available under the law of that Member State, even if the courts of another Member State have jurisdiction as to the substance of the matter.' In the *Roche* case, the dispute had started as 'kort geding' but the Dutch Supreme Court did not refer any question concerning the relationship between Article 35 BR (at that time, Article 24 Brussels Convention) and Article 8(1) BR (previously Article 6(1) Brussels Convention). Nevertheless, even if the *Roche* judgment did not provide any clarification on the possible impact of Article 35, from the wording of the provision and on the basis of the broad competence granted in relation to provisional

[499] Case C-228/11 *Melzer* ECLI:EU:C:2013:305, para. 25; Case C-523/10 *Wintersteiger* ECLI:EU:C:2012:220, para. 19; Case C-170/12 *Pinckney* ECLI:EU:C:2013:635 para. 26; Case C-360/12 *Coty* ECLI:EU:C:2017:941, para. 46.

[500] Case C-523/10 *Wintersteiger* ECLI:EU:C:2012:220, para. 25; Case C-170/12 *Pinckney* ECLI:EU:C:2013:635, para. 37.

[501] Joined Cases C-509/09 and C-161/10 *eDate Advertising and Martínez* ECLI:EU:C:2011:685, para. 42; and on the determination of the place where the event giving rise to the damage occurred, Case C-523/10 *Wintersteiger* ECLI:EU:C:2012:220, para. 30 et seq.

[502] The 'kort geding' procedure is very simple. By serving to the defendant a writ of summon which includes the basis of the claims, the plaintiff requests the defendant to appear for an oral hearing before the President of the court where the defendant can defend herself. And within one or two weeks the judge renders a written decision. For more details on the 'kort geding'procedure, see Jan J. Brinkhof and Anselm Kampermann Sanders, 'Patent Enforcement in the Netherlands' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 181, 191.

measures by the provision, it is possible to think that Dutch courts can continue their cross-border 'kort geding' practice, regardless of what the CJEU rulings on Article 8(1) BR may be.[503]

Overall, it results that the possibilities for consolidation of actions exist only under the analysed limited circumstances. In this context, the envisaged establishment of a Unified Patent Court for patent litigation in Europe has been supported as a solution to both the existing limitations for consolidating actions and to the current status of fragmented litigation.

II. Article 34 UPCA and the Scope of Territorial Jurisdiction under the UPC

What strongly differentiates the Unified Patent Court system from the system of national courts is explicitly established in Article 34 UPCA. While the broader territorial scope of jurisdiction in relation to EPUEs is a necessary consequence of the unitary character of these patents,[504] it was indeed necessary to make the broader scope of jurisdiction explicit for other European patents which do not have unitary effect (Article 2(e) UPCA). Thus, Article 34 UPCA provides that judgments of the UPC in the case of a European patent shall cover 'the territory of those Contracting Members States for which the European patent has effect'. The present section provides an overview of the main issues of interpretation of this provision and of existing limitations to the broad scope of judgments. Further on, it analyses the issues arising from an exorbitant ground of jurisdiction in the framework of judgments ordering damages.

1. The Interpretation of Article 34 UPCA and the Existing Limitations to the Broad Scope of Judgments

Article 34can be particularly problematic considering the status of the UPC as a common court of the CMSs (Articles 1(2) and 21 UPCA; Article 71a BR). As Von Falck and Dorn note,[505] one would expect that the decisions of the UPC would have effect only in the CMSs where the European patent has been infringed or where there is a potential threat that it would be infringed. Instead, the wording of the provision is wider, to the extent that the decisions cover all CMSs and therefore not only the ones in which there is an infringement or a threat thereof. Such a solution can indeed sound unconventional and inappropriate in the light of the traditional way of thinking

[503] On this opinion see Annette Kur, 'A Farewell to Cross-Border Injunctions? The ECJ Decisions GAT v. LuK and Roche Nederland v Primus and Goldenberg' (2006) 37 IIC 844, 853.

[504] In particular, this is so because of two main characteristics of an EPUE that are related to the fact that decisions of the UPC are extended to all the CMS. First, pursuant to Art. 3(2) EPUE Reg., an EPUE presupposes a European patent with the same set of claims 'in respect of all the participating Member States'. Second, an EPUE has a 'unitary character'. In addition, this effect is consistent with the fact that, pursuant to Art 5(1) EPUE Reg., an EPUE gives the owner the right to prevent any third party from carrying out acts against which the patent gives protection 'throughout the territories of the PMS in which it has unitary effect'.

[505] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 664.

about a European patent as a bundle of national rights, as provided by Article 64(1) EPC. Indeed, pursuant to this provision, the effects of a European patent are the same as if it were a national patent, requiring however not only the European patent to be protected in a state, but also the presence of an infringement in that state. As a consequence, applying in a systematic manner Article 64(1) EPC and Articles 1(2) and 21 UPCA[506] should result in a decision of the UPC covering only the CMSs where there has been a threat of or a concrete infringement. This logic raises the question of whether the wording and meaning of Article 34 UPCA and its implications are not legitimate and should be amended and limited to implying that the decisions have only effect in the CMSs of infringement.[507] On the other hand, however, it can be argued that such an effect and broad scope is indeed legitimate. Considering that the UPCA provides for unitary law on infringement (in particular Arts 25, 26, 27 UPCA and also Arts 64, 67 and 68 UPCA), those provisions do not operate on the level of national law but on the UPCA level. And, therefore, it is argued that those provisions operate on the basis of Article 142 EPC, which allows a change in the effect of the grant of European patents, by substituting the referral to national law, included in Article 64(1) EPC with a unitary EPC effect, thereby using the same instrument as the one for the creation of a unitary patent protection on the basis of the EPC or on the basis of Union law (as now envisaged by the EPUE Reg.).[508]

In any case, regardless of the preferred interpretation, it is indeed a matter of fact that such an extended scope of judgments may have very detrimental or very positive implications for a start-up, depending on the outcome of the case. Indeed, the consequences of the broad scope of judgments would occur both in relation to invalidity and counterclaims for revocation as well as for infringement decisions. The issue is therefore to find a solution in order to reach a proper balance between the potential negative and potential positive consequences. In particular, it would be advisable to consider measures and/or legal changes that allow to mitigate the potential risks. This could be either to restrict the effects of the decisions, as anticipated above, or to ensure that the decisions are taken in an appropriate and legitimate manner, thereby taking into account and balancing the interests involved. Nevertheless, before going into the details of the characteristics inherent to the type of actions and subsequent decisions, one should also bear in mind throughout the analysis, that there are already existing limitations to the broad territorial scope of judgments. For the purposes of a better understanding of the matter, those limitations will be briefly summarised and further analysed hereinafter.

[506] Art. 1(2) UPCA reads: 'The Unified Patent Court shall be a court common to the Contracting Member States and thus subject to the same obligations under Union law as any national court of the Contracting Member States.'
Art. 21 UPCA reads: 'As a court common to the Contracting Member States and as part of their judicial system, the Court shall cooperate with the Court of Justice of the European Union to ensure the correct application and uniform interpretation of Union law, as any national court, in accordance with Article 267 TFEU in particular. Decisions of the Court of Justice of the European Union shall be binding on the Court.'
[507] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 664.
[508] Ibid. 665.

First of all, it is possible that the national designations of an EP belong to different patent owners, because the original patent holder or applicant may have transferred them separately. Such owner can only successfully sue for infringement for the national part of the European patent she owns. Thus, the UPC infringement decision may only have effect under Article 34 UPCA in relation to the national designation of patent that the party to the litigation owns.[509]

Secondly, both in relation to actions for infringement and revocation, it may be that a patent owner or licensee decide to stop an act of infringement through a targeted action only in relation to the designation she owns or for which she holds a licence. Indeed, pursuant to *ne ultra petita* rule of Article 76(1) UPCA, the UPC is bound by the territorial limitation of the application for relief of the claimant. Then, if there are other infringements or threatening infringements in other CMSs, the claimant can file another suit in order to cover the other CMSs. Similarly, a party can restrict its action for revocation to certain designations of an EP (Article 43 and 76(1) UPCA). Even if this is unlikely to happen, because a successful revocation of some designations would anyhow weaken the other designations too, in such an event, the effect of Article 34 will only cover the designations included in the complaint.[510]

Thirdly, the effect of Art 34 UPCA will not extend to all CMSs, if the patent claims of the EP are different from one CMS to another or if there is a national substantive right, on which the use by the defendant is based. Indeed, an EP may have different claims, for example because of a decision for limitation by national courts. Or the defendant may have a national right to use the patent. In particular, the right of the defendant may derive from prior use, from a licence or from a national prior right.[511] In these cases, the UPC would need to restrict the territorial scope of the judgment.

As regards prior use rights, in contrast to the texts for the Community Patent, the requirements and effects of those rights have not been regulated in the EPUE Reg or in the UPCA.[512] Indeed, Article 28 refers to the national laws of the CMSs in this regard. It can be argued that the referral to national law in this context increases the level of legal uncertainty and that a complete unification of the law would have been advisable.[513] In any case, for the matter at hand, it is clear that the referral to the respective national law results in a partial restriction of the unitary effect of the patent and therefore in a partial restriction of the territorial scope of judgments despite Article 34 UPCA regarding European patents, if the requirements for a prior user right in the applicable national law provisions are met. Indeed, national provisions vary in this regard. In

[509] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 678.
[510] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 679.
[511] Ibid.
[512] Art. 12 proposal of the Commission of 1 August 2000 regarding a regulation of the Council on the Community Patent, COM (2000) 412 final, proposing harmonisation of the prior use rights.
[513] Reto M. Hilty, Thomas Jaeger, Matthias Lamping and Hanns Ullrich, 'The Unitary Patent Package: Twelve Reasons for Concern', Max Planck Institute for Intellectual Property & Competition Law Research Paper No. 12-12 (2012) p. 3 available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2169254 (accessed 15 April 2019).

Germany, a prior use right requires the knowledge and possession of the invention and also the realisation of that possession.[514] Thus, the owner of the prior use right must have known the technicalities of the invention and have implemented some acts pursuant to § 9 Patent Act. Slightly differently, under French law, pursuant to Article L 613-7 of the CPI, the mere possession of the invention is enough for giving rise to a prior use right. There is no requirement to actually have executed one of the acts of use. In the UK instead, an act which would otherwise constitute patent infringement is a prerequisite to gain a prior use right. And moreover, pursuant to s 64(1) UK Patents Act 1977, the user must act in good faith. Taking into consideration these differences, it is clear that if the prior use rights had been uniformly regulated, Article 34 UPCA would apply without fragmentation. Such solution would indeed have been advisable.

Concerning licences, it is evident that those covering only some of the protecting CMSs, can limit the all-CMS effect of UPC judgments. For a European patent, subject to the UPCA, a licence can be territorially limited because there is no unitary provision in the UPCA in this regard and also because of the referral to Article 73 EPC, to the national law, which allows not only a licence for any, but also for a part of a designated Contracting State. Although Article 34 does not apply to EPUE, in this context it is relevant to highlight that, according to Article 3(2)(3) EPUE Reg., even EPUEs must not necessarily be licensed for all participating Member States. Thus, even for EPUEs the UPC may have to limit the territorial reach of its judgments. In particular, judgments on infringement will need to be limited to some territories not covered by a licence. In the same way, the territorial reach of a judgment may also need to be restricted due to the grant of a compulsory licence for an individual territory.[515] In fact, pursuant to Recital 10 EPUE Reg., compulsory licences should be governed by the laws of the participating Member States as regards their respective territories. It is therefore evident that any granting of compulsory licences will undermine the unitary effect.[516]

Also concerning prior rights, it must be noted that a decision for revocation by the UPC, on the basis of a prior right (see Article 139(2) EPC), has to limit the territorial effect of UPC judgments concerning a European patent. A prior right arises from an application for a national patent that was made to a national patent office prior to the date of the EPO application, but which was published after that date. Thus, a revocation on the basis of an existing national prior right eliminates the national designation of the EP and as a consequence the UPC judgment cannot

[514] § 12 Patent Act.

[515] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 682.

[516] In this regard it is also interesting to note that it is questionable whether national courts and administrative authorities might grant national compulsory licences in respect of a unitary patent as, may this be regarded as a matter of shared competences, no competence is left for Member States under Articles 2(2) and 4 TFEU. See Reto M. Hilty, Thomas Jaeger, Matthias Lamping and Hanns Ullrich, 'The Unitary Patent Package: Twelve Reasons for Concern', Max Planck Institute for Intellectual Property & Competition Law Research Paper No. 12-12 (2012) p. 5 available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2169254 (accessed on 15 October 2020).

cover the specific CMSs.[517] Also with regard to EPUEs, it is interesting to note that the EPUE Reg. does not contain rules on prior rights, which are thus governed by national law. Therefore, in these instances there may be the need to restricting the territorial reach of judgments, also in relation to EPUEs. Moreover, also for EPUEs, a granted revocation decision based on a prior right may lead to a territorial limitation of the unitary effect, since if the basic EP for a specific designation is revoked on the basis of a prior right, then also the unitary effect becomes limited.[518] Finally, limitations to the territorial scope of Art 34 UPCA may also relate to UPC decisions concerning the protection of published European applications. Indeed, pursuant to Article 32(1)(f) UPCA, the UPC has exclusive jurisdiction for preliminary protection. But neither EPUE Reg. nor the UPCA did harmonise the protection of EP patent applications. Under the current scheme, there is only an application for a European patent and the character of a European patent can change at the end of the patent granting procedure before the EPO by filing the unitary effect in the register (Article 3(1) EPUE Reg.).[519] Thus, the rights resulting from a patent application exclusively arise from the EPC provisions (Article 67(1) and 64 EPC), which foresee preliminary protection, which has the same scope as in the case of a granted European patent. Yet Article 67(2) EPC allows a Member State of the EPO to depart from that protection, but still obliges to provide at least the same level of protection as they provide for national patent applications. As a consequence, the UPC has to take into consideration the national provisions in the CMSs and accordingly limit the territorial scope of its judgments.[520]

2. Long-arm jurisdiction for damages outside the EU

In the context of the discussion concerning the geographic reach of UPC judgments, it is relevant to address the issues that arise in the framework of judgments ordering damages in the light of the specific rule of jurisdiction provided for in Article 71b(3) of Brussels Ibis Reg., as amended by Regulation (EU) No. 542/2014, which establishes what has been defined as an exorbitant ground of jurisdiction.

Pursuant to Article 71b(3) Brussels Ibis Regulation, this supplementary jurisdiction rule would apply only where the UPC has jurisdiction pursuant to Chapter II of Brussels Ibis Reg. in relation

[517] In this regard it is however important to keep in mind that in certain CMSs double protection by a national patent and by an EP is allowed and therefore the potential national patent protection will continue to exist also after the revocation of the European patent for the respective CMS because of a prior right. Such a situation cannot occur in Germany, pursuant to Art. 2(8)(a) IntPatÜG, which provides for a loss of effect *ex nunc* of the national patent when the European patent is revoked.

[518] Legal scholarship notes that EPUEs as classical EPs are European patents within the meaning of Article 139(2) EPC. Therefore, according to this position, a successful claim or counterclaim for revocation based on a prior right, results for both in a territorial limitation of the unitary effect. Article 3(2) EPUE Reg. 2nd sentence must be applied in a restrictive manner. Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 683.

[519] For a thorough analysis of this issue see Josef Drexl in *Münchener Kommentar zum Bürgerlichen Gesetzbuch. Band 12: Internationales Privatrecht II, Internationales Wirtschaftsrecht* (7th edn, C.H.Beck 2018) IntImmGR para. 157.

[520] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 689.

to a defendant not domiciled in a Member State, in a dispute concerning an infringement of a European patent which gives rise to damage within the Union. The supplementary rule adds that the UPC may also 'have jurisdiction in relation to damage arising outside the Union for such an infringement.' Moreover, in order for the rule to apply, it is required that the property which belongs to the defendant is situated in a Member State which is part of the UPCA and that the dispute has a sufficient connection with such Member State.[521] Recital 7 of Reg. (EU) No. 542/2014 also emphasises that the supplementary rule of jurisdiction allows the UPC to hear cases concerning defendants from third States regarding infringement of a European patent causing damages both inside and outside the Union. In addition, the recital provides more specific guidance by listing some relevant factors to be taken into account when analysing whether the dispute has a sufficient connection with the Contracting State of the UPCA where property belonging to the defendant is located. For example, potential connecting factors in this regard are the domicile of the claimant in the Contracting State, the availability of evidence relating to the dispute and the value of the property taken into consideration. However, the existence of such a provision has raised and raises several concerns and issues.

The exorbitant jurisdiction rule can find application for example in the following scenario. In the case in which there is a US company, which is allegedly infringing a European patent in the majority of the European countries in which it is validated, and which is sued before the French local division of the UPC because the alleged infringement takes place also in France and if the US company has assets in France, there is a connection between the dispute and the Member State where the asset is located, namely France. Under this scenario, the plaintiff can seek damages not only for the infringement committed in France and in the other countries participating in the UPCA, but also for the infringement committed in countries that are signatories of the EPC, but not EU Member States, such as Turkey.[522] In these cases, the rule that allows an extension of UPC jurisdiction to decide over damages outside of the EU on the basis of the location of assets is subject to criticism.[523] Moreover, also the recourse to the connecting factor as established in Reg. (EU) No. 542/2014 raises several issues and concerns.[524] Indeed, it has been noted that there could be a justification for the need to grant additional grounds of jurisdiction, such as a *forum necessitatis*, when dealing with jurisdiction in relation to disputes

[521] Art 71b (3) Brussels Ibis Reg.

[522] Pierre Véron, 'Extent of the Long-Arm Jurisdiction Conferred upon the Unified Patent Court by Art. 71(b)(3) of the Brussels I Regulation as Amended by Regulation 542/2014 of May 15, 2014: Turkish Delight and a bit of Swiss Chocolate for the Unified Patent Court' 37 (2015) European Intellectual Property Review 588, 595.

[523] Pedro de Miguel Asensio, 'Regulation (EU) No. 542/2014 and the International Jurisdiction of the Unified Patent Court' (2014) 45 IIC 868, 880.

[524] For some disputes, a forum based on the location of property may be appropriate, such as for the ones concerning rights *in rem* or possession of moveable property. And indeed, in this framework there was the intention to add a new special jurisdiction rule for the courts of the country in which the property is located in the 2010 Commission proposal to amend Reg. 44/2001. Proposal of the Commission of 14 December 2010 for a Regulation on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (Recast), COM (2010) 748 final. Nevertheless, not even this forum was included, and in any case, the provision in analysis was not developed on this basis, but on the envisaged failed jurisdiction rule over third state defendants. See ibid. 881.

concerning defendants domiciled outside of the EU.[525] But this is not the purpose pursued by the provision at hand.[526] Furthermore, even if in certain Member States it is possible to justify jurisdiction only based on the existence of assets which belong to the defendant,[527] the application of that connecting factor will raise several concerns in the context of the jurisdiction of the UPC in relation to infringements of European patents in third states. Indeed, in this latter case, the jurisdiction rule applies only to cases in which the UPC does not have jurisdiction in relation to such infringements on the basis of Chapter II of Brussels Ibis Regulation. Nor does it refer to tangible property directly related to the action of infringement. Such tangible assets related to the infringement could be taken into account for granting jurisdiction under Article 7(2) Brussels Ibis Regulation. Instead, the grant of jurisdiction to the UPC with regard to the damage in third states regarding European patents, merely because the defendant has property not related to the infringement in a CMS is seen as an exorbitant ground for jurisdiction and as not appropriate for disputes related to the infringement of patent rights.[528] Nor do the CLIP Principles foresee the location of property as a ground of jurisdiction.[529] Equally, the ALI Principles[530] when mentioning the grounds for jurisdiction in transnational disputes that are not deemed to be sufficient, include 'the presence in that State of tangible property belonging to the defendant, except when the dispute is directly related to that property'.[531] Furthermore, the nature of this envisaged jurisdiction rule is exorbitant also considering that a sufficient connection between the dispute and the property-forum may also be established when the claimant is domiciled there (Recital 7 Reg. (EU) No. 542/2014). Moreover, it should be highlighted that if the event which causes the alleged infringement occurs in a Contracting State to the UPCA, the UPC would be competent to decide over the infringement on the basis of Article 7(2) BR. Usually, a decision rendered by the UPC on the basis of the supplementary ground for jurisdiction pursuant to Article 71b(3) BR cannot be expected to be enforced in the non-EU country where the infringement occurred.

[525] Proposal of the Commission of 14 December 2010 for a Regulation on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (Recast), COM (2010) 748 final, Art. 26.
[526] Pedro De Miguel Asensio, 'Regulation (EU) No. 542/2014 and the International Jurisdiction of the Unified Patent Court' (2014) 45 IIC 868, 881.
[527] For example, see § 23 German Code of Civil Procedure.
[528] Pedro de Miguel Asensio, 'Regulation (EU) No. 542/2014 and the International Jurisdiction of the Unified Patent Court' (2014) 45 IIC 868, 882.
[529] European Max Planck Group on Conflict of Laws in Intellectual Property, *Conflict of Laws in Intellectual Property – The CLIP Principles and Commentary* (2013) 56–195
[530] American Law Institute, 'ALI Principles – Intellectual Property: Principles Governing Jurisdiction, Choice of Law, and Judgments in Transnational Disputes' (2008), Sec. 207 comment b).
[531] American Law Institute, 'ALI Principles – Intellectual Property: Principles Governing Jurisdiction, Choice of Law, and Judgments in Transnational Disputes' (2008), Sec. 207 comment b); as cited by Pedro de Miguel Asensio, 'Regulation (EU) No. 542/2014 and the International Jurisdiction of the Unified Patent Court' (2014) 45 IIC 868, 882.

III. Implications for Start-Ups and Proposals for Reform

The comparative analysis within this Section has served to demonstrate in more detail a feature that could appear to be obvious and yet is of high importance when it comes to the implications of the UPC design for start-ups, namely, the extent and scope of jurisdiction of court decisions. It is evident how, in the framework of a future UPC, the effects of decisions occur at a supranational level with multi-territorial reach for all or, in the case of regular European patents (see Article 34 UPCA), multiple CMSs. In addition, in the case of judgments awarding damages, the effect of the judgment even extends its long-arm beyond EU borders. In contrast, within the current system, based on the Brussels Ibis Regulation, the possibilities of consolidating proceedings are limited. Indeed, when bringing an action before the state of the defendant´s domicile pursuant to Article 4(1)BR it is always possible to consolidate cross-border infringement actions for the infringement of patents granted for multiple states. However, when the infringement action is brought before the court of the place where the damage occurred, the territorial reach of jurisdiction, is limited to that state, where the intellectual property right had been granted. Moreover, in cases involving multiple defendants, consolidation occurs only when there is a risk of irreconcilable judgments pursuant to Article 8(1) BR and related case law as analysed.

As a consequence, it is evident that the implications for start-ups of the broader territorial reach of jurisdiction of the UPC change depending not only on whether the start-up acts as claimant or defendant but also on the outcome of the decision. It is indeed clear that the jurisdiction of the UPC would provide any party – plaintiffs and defendants – with the advantage of broader territorial reach of the decisions without having to start an action or defend themselves in numerous proceedings across several Member States. This will of course represent an advantage for a potential start-up plaintiff or defendant who can save resources and time without having to litigate before multiple national courts. Yet, it is evident that the more severe the consequences that may derive from a negative outcome are, regardless of whether a party is in the position of a plaintiff or a defendant, these consequences have a considerably more significant impact on a start-up with limited resources and for which a negative judgment may even turn out disruptive. The mere existence of such an effect signals the lack of balance of this system which in general favours bigger and more established businesses that can more easily afford accepting the risk and consequences deriving from an unfavourable judgment.

This imbalance is in need of being mitigated. When it comes to the unjustified long-arm jurisdiction of the UPC for damage claims, covering also infringement of European patents outside the borders of the EU, pursuant to Article 71b(3) Brussels Ibis Regulation it is relevant to note that, while such extended jurisdiction can be of advantage for a start-up plaintiff, it is problematic from the perspective of a start-up defendant. In this regard, it must however be stressed that as defendants, only start-ups domiciled outside the EU are concerned, and therefore this does not represent a major concern from an EU innovation policy perspective.

Nevertheless, it is recommended to solve the imbalance that the system presents in this regard. The problem can only be remedied by deleting this ground of jurisdiction from the Regulation. In addition, as regards the need to mitigate the potential negative consequences of the broader geographical reach of UPC decisions, it must be highlighted that a more balanced and coherent interpretation of the law, together with specific substantive reforms,[532] can already help to ensure that the decisions are taken in an appropriate and legitimate manner, thereby balancing and taking into account all the interests involved.

IV. Article 34 UPCA: Specific Types of Actions

1. Decisions on Invalidity and Revocation under the UPCA

In relation to decisions of revocation, pursuant to Article 34 UPCA, the UPC revocation decision will normally cover all CMSs, provided that there are no specific reasons for restricting the application for revocation to certain CMSs. This latter reservation is explained by the concept that a European patent only constitutes a bundle of national patent rights. However, the revocation decision should in principle be regarded to as a revocation of a multi-territorial patent that has been granted by a central authority (the EPO) and has been revoked by the decision of a central court (UPC).[533] Evidently, as regards the situation of start-ups, the consequences of an action for revocation change depending on whether the start-up is on the side of the defendant or of the plaintiff. Under the first scenario, the consequences of such a broad scope of revocation coverage can be completely disruptive for a financially constrained start-up whose business may be based solely on one patent. Conversely, under the second scenario, multi-territorial revocation would be much more advantageous than the respective nationally restricted revocation under the current system, since it would not require initiating an action before the courts of several Member States. It is therefore evident, that the difference consists mainly in the extent of risk or advantage that the start-up may take, respectively.

2. Infringement Decisions under the UPCA

In a similar way, the practical consequences of the application of Article 34 UPCA to infringements, are that a UPC decision on provisional measures and permanent injunctions, pursuant to Articles 62 and 63(1) UPCA, will cover all CMSs, even if the infringement has occurred in one CMS only. Thus, if the defendant would afterwards start infringing the EP also in another CMS, the UPC can assign a penalty according to Article 63(2) UPCA, considering that the decision has effect in that territory too. As explained in relation to revocation decisions, also for

[532] Recommendations on interpretation and reforms in relation to provisions concerning the grant of injunctions and the award of damages are provided in detail in Section below C. IV. 2.6.
[533] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 665.

infringement decisions, the practical implications of such broad coverage of decisions for start-up would depend on the position the start-up. Also in relation to this, the advantage and risk that the start-up takes in this context is considerably greater than the one occurring under the current system. And, due to the fact that these market players may well find themselves more often in the position of defendants rather than of plaintiffs, this risk may on balance outweigh the potential advantages.[534] However, in contrast to the situation concerning revocation actions, one has to note that under the UPC framework an action for infringement would also bring a certain advantage from the defendant's perspective for a start-up. Indeed, in application of the UPCA, start-ups would be required to defend themselves only in one forum rather than in several jurisdictions. Yet, in this regard, the actual advantage would depend on the extent to which claimants have so far initiated parallel infringement actions before different national courts. And considering that this has not often occurred,[535] it is possible to counterargue that start-ups may not often benefit or not benefit at all from such a potential advantage. It follows that this broader coverage of infringement decisions would more likely result in a greater risk for start-ups than under the current framework. As a consequence, it becomes even more relevant to explore and analyse the circumstances under which an injunction can be granted under the UPC in comparison to what occurs under the different systems of national courts. This is done in order to explore the likelihood for a start-up of becoming the target of an injunction in the event the UPCA will enter into force. In this regard, the dissertation limits the analysis to permanent injunctions in light of the more irreversible effect they have in comparison to the potential consequences of provisional measures. The analysis is carried out against the backdrop of the relevant provisions of the IP Enforcement Directive 2004/48/EC[536] and relevant case-law.

2.1. Permanent Injunctions under the Enforcement Directive

The Enforcement Directive in its Article 3 establishes some general obligations which provide guidance both to national legislation and to the courts for the interpretation and application of enforcement provisions in light of the principles of effectiveness, proportionality and dissuasiveness.[537] The listed obligations clarify in more detail the principle of proportionality.

[534] This statement is based here on a provisional and preliminary assumption. The analysis of the position that start-ups will be more likely to be affected as defendants is carried out in Chapter III.

[535] For specific data in this regard see Katrin Cremers, Max Ernicke, Fabian Gässler, Dietmar Harhoff et al., 'Patent Litigation in Europe' (2017) 44 European Journal of Law and Economics 31, who find that the share of cases that are litigated in multiple jurisdictions is overall small. For more details in this regard see also Chapter II. B.

[536] Directive No 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights [2004] OJ L195/16.

[537] Article 3 reads:
(1) Member States shall provide for the measures, procedures and remedies necessary to ensure the enforcement of the intellectual property rights covered by this Directive. Those measures, procedures and remedies shall be fair and equitable and shall not be unnecessarily complicated or costly or entail unreasonable time-limits or unwarranted delays. (2) Those measures, procedures and remedies shall also be effective, proportionate and dissuasive and shall

Indeed, proportionality is achieved when measures, procedures and remedies follow the principles of fairness and equity. Conversely, protection that would create barriers to legitimate trade and would deny safeguards against abuse shall be deemed disproportionate.[538] So far, the principle of proportionality has been recognised a role in balancing different fundamental rights, such as the fundamental property right of right holders (Article 17(2) of the European Charter of Fundamental Rights) and the right of conduct of business (Article 16 of European Charter of Fundamental Rights).[539] Yet, the principle of proportionality could be used beyond a balancing exercise between different fundamental rights and should be applied as a criterion for the assessment of the adequacy of enforcement measures, thereby playing a more important role at the remedial level.[540]

When it comes to final injunctions, the European framework differs from the one in the United States, where the decision of the US Supreme Court *eBay Inc* [541] has subjected the grant of final injunctions to a four-factor test. According to this decision, a plaintiff who requests a permanent injunction, must demonstrate that four cumulative conditions are fulfilled for the court to grant injunctive relief. First, the patent holder must have suffered irreparable harm. Secondly, that monetary damages are not adequate to compensate that injury. Thirdly, considering the balance of rights, an equitable remedy in equity must be warranted. Finally, the grant of a permanent injunction must not negatively affect the public interest.[542] The *eBay* decision was based on the distinction between common law and equity. An injunction is identified as an equitable remedy and, therefore, the court has the discretion to grant it or not. Instead, when it comes to the law in the EU, the question is whether the Enforcement Directive makes injunctive relief mandatory in cases of infringement, whether it leaves room for defences based on the disproportionality of injunctive relief or whether it leaves the decision to the Member States.

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be applied in such a manner as to avoid the creation of barriers to legitimate trade and to provide for safeguards against their abuse.

[538] Ansgar Ohly, 'Three Principles of European IP Enforcement Law: Effectiveness, Proportionality, Dissuasiveness' in Josef Drexl et al. (eds), *Technology and Competition: Contributions in Honour of Hanns Ullrich* (Larcier 2009) 257, 258.

[539] The CJEU has already balanced fundamental rights and objectives of general interests in several decisions primarily concerning copyright law. Christophe Geiger and Elena Izyumenko, 'Blocking Orders: Assessing Tensions with Human Rights' in Giancarlo Frosio (ed.) *The Oxford Handbook of Intermediary Liability Online* (OUP 2020), 566. Commission, 'Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and of the Council on the enforcement of IPRs' (Communication) COM (2017) 708 final, 10. For example, Case C-275/06 *Productores de Música de España (Promusicae)* ECLI:EU:C:2008:54 in which the CJEU balanced the rights to property and fundamental judicial protection and the right of protection of personal data and private life. See also Case C-324/09 *L´Óreal,* ECLI:EU:C:2011:474; Case C-314/12 *UPC Telekabel* ECLI:EU:C:2014:192. Recent literature has welcomed the idea that such balancing should occur also in the context of injunctive relief in patent litigation. See Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafał Sikorski (ed.), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 41.

[540] On this position see Alain Strowel and Amandine Léonard, 'Cutting Back Patent Over-Enforcement. How to Address Abusive Practices Within the EU Enforcement Framework' (2020) 11 JIPITEC 3, 18.

[541] *eBay Inc. vs. MercExchange, LLC*, 126 S.Ct. 1837 (U.S. 2006).

[542] Ibid. 1839.

Article 11 of the Enforcement Directive, which corresponds to Article 44(1) of the TRIPS Agreement,[543] provides that Member States are under an obligation to ensure that courts *may* issue a final injunction to prohibit the continuation of the infringement but does not specify any further under which criteria courts should decide on the availability of injunctive relief. It merely requires the Member States to make sure that their judicial authorities have the legal power and authority to grant permanent injunctions, not requiring the Member States that an injunction be granted whenever an infringement is found.[544] Nor does Article 11 Enforcement Directive render flexibility and discretion a mandatory rule.[545] The provision must be read in combination with Recitals 17 and 24. The former provides that '[t]he measures, procedures and remedies provided for in this Directive should be determined in each case in such a manner as to take due account of the specific characteristics of that case, including the specific features of each intellectual property right and, where appropriate, the intentional or unintentional character of the infringement.' The latter provides that prohibitory measures shall be justified by the circumstances of the case and aimed at preventing further infringements.

Article 12 allows Member States to provide that courts *may* order pecuniary compensation, instead of granting an injunction, if the infringer has acted unintentionally and without negligence, if execution of the measures in question would cause her disproportionate harm and if pecuniary compensation appears reasonably satisfactory.[546] The concrete and practical application of Article 12 is rendered difficult by the rigorousness of its conditions of application. Indeed, the condition of unintentional infringement without negligence together with the high standards of care considerably raises the barrier of the probabilities of application of Article 12.[547] Moreover, it is not very clear when infringement is negligent or unintentional. And, considering that information about patents is available through a mere consultation of the patent registry, it may be difficult for an alleged infringer to prove lack of fault.[548] In particular, meeting

[543] Art. 11 Enforcement Dir. reads 'Member States shall ensure that, where a judicial decision is taken finding an infringement of an intellectual property right, the judicial authorities may issue against the infringer an injunction aimed at prohibiting the continuation of the infringement ...', following the example of Art. 44 TRIPS pursuant to which 'the judicial authorities shall have the authority to order a party to desist…'.

[544] On this position see Ansgar Ohly, 'Three Principles of European IP Enforcement Law: Effectiveness, Proportionality, Dissuasiveness' in Josef Drexl et al. (eds), *Technology and Competition: Contributions in Honour of Hanns Ullrich* (Larcier 2009) 257, 264.

[545] Reto M. Hilty, 'The Role of Enforcement in Delineating the Scope of IP Rights', Max Planck Institute for Innovation and Competition Research Paper No. 15-03 available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2602221 (accessed 15 February 2020) 15.

[546] Article 12 reads: 'Member States may provide that, in appropriate cases and at the request of the person liable to be subject to the measures provided for in this section, the competent judicial authorities may order pecuniary compensation to be paid to the injured party instead of applying the measures provided for in this section if that person acted unintentionally and without negligence, if execution of the measures in question would cause him/her disproportionate harm and if pecuniary compensation to the injured party appears reasonably satisfactory'.

[547] Commission Staff Working Document, 'Analysis of the application of Directive 2004/48/EC of the European Parliament and the Council of 29 April 2004 on the enforcement of intellectual property rights in the Member States', SEC (2010) 1589 final, 21.

[548] As correctly noted by Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafał Sikorski (ed.), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 36.

the requirement of 'guiltless' infringement would be very difficult even in the case of complex products which embody many patented technologies.[549] Moreover, the interaction between Articles 11 and 12 raises several issues of interpretation. On one hand, some commentators argue that Article 12 should be read as a narrow exception to Article 11, which does not recognise the principle of proportionality to restrict the power of the courts to grant permanent injunctions.[550] They favour the restrictiveness and cumulativeness of the conditions and argue that this interpretation is in line with the idea that preventing the use of the intellectual property of others is 'the very subject matter of exclusive rights'.[551] On the other hand, other authors state that the principle of proportionality would be undermined if Article 11 were to require the courts of all Member States to grant final injunctions even in cases of gross disproportionality.[552] They support the idea that the need to consider whether an injunction should be granted or denied arises from a duty to follow the general principles stated in Article 3 Enforcement Directive and in particular the principle and need of proportionality.[553] Indeed, even if injunctions are in principle an appropriate and necessary remedy to the infringement of a valid patent, there is the possibility that in specific cases the harm that the injunction would cause to the infringing implementer or to the public would be far greater than the benefits that the patent owner receives. In such cases, the application of proportionality would mandate the denial of such injunction.[554] In this framework it is argued that if Article 12 is interpreted as an exception to Article 11 the scope of application of Article 12 should be interpreted broadly and in combination with Article 3, so that even outside the too narrow wording of Article 12 courts can deny injunctive relief and grant damages if the grant of an injunction is disproportionate.[555] Otherwise,

[549] As noted in Commission, 'Support Study for the ex-post evaluation and ex-ante impact analysis of the IPR enforcement Directive (IPRED). Final Report (2017) 113 https://op.europa.eu/de/publication-detail/-/publication/1e3b2f41-d4ba-11e7-a5b9-01aa75ed71a1 (accessed 20 September 2020).

[550] Mark Marfé, Alexander Reetz, Camille Pecnard, et al., 'The Power of National Courts and the Unified Patent Court to Grant Injunctions: A Comparative Study' (2015) 10(3) Journal of Intellectual Property Law and Practice 180, 181.

[551] Peter Blok, 'A harmonized approach to prohibitory injunctions: reconsidering Article 12 of the Enforcement Directive' (2016) 11(1) Journal of Intellectual Property Law and Practice 56, 59.

[552] Ansgar Ohly, 'Three Principles of European IP Enforcement Law: Effectiveness, Proportionality, Dissuasiveness' in Josef Drexl et al. (eds), *Technology and Competition: Contributions in Honour of Hanns Ullrich* (Larcier 2009) 257, 259; Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafal Sikorski (eds), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 34.

[553] Ansgar Ohly, 'Three Principles of European IP Enforcement Law: Effectiveness, Proportionality, Dissuasiveness' in Josef Drexl et al. (eds), *Technology and Competition: Contributions in Honour of Hanns Ullrich* (Larcier 2009) 257, 259; Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafał Sikorski (eds), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 34.

[554] See in this regard Pierre Larouche and Nicolo Zingales, 'Injunctive Relief in FRAND Disputes in the EU? Intellectual Property and Competition Law at the Remedies Stage' Tilburg Law School Legal Studies Research Paper Series No 01/2017, 5 available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2909708 (accessed 16 February 2020).

[555] On this position see Ansgar Ohly, 'Three Principles of European IP Enforcement Law: Effectiveness, Proportionality, Dissuasiveness' in Josef Drexl et al. (eds), *Technology and Competition: Contributions in Honour of Hanns Ullrich* (Larcier 2009) 257, 260, also available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1523277 (accessed 24 February 2020).

considering that Article 12 requires that the infringer '[be] liable to be subject to measures provided for in this section', Article 12, can also be interpreted as an alternative to the prohibitory injunctions of Article 11, and thus be deemed applicable only after that the proportionality test of Article 3 has been already taken into consideration. Also this interpretation would allow courts to grant compensation without relying on Article 12, since they could grant damages applying Article 13 Enforcement Directive in cases in which the infringer has acted with intent or negligence. In this regard, it is however important to take into account of the fact that, while Article 13 is a rule on damages for infringements in the past, the compensation under Article 12 would constitute a compensation for continuing infringements and future uses. In this context, considering the problematic interaction between Article 11 and 12, the Commission more recently envisaged the policy option to remove Article 12 and to improve the combination of Articles 3 and 11 by including specific criteria for the application of the proportionality test.[556] In any case, it is relevant to note that even when reading Article 11 and Article 12 in combination with Article 3, the text of the Enforcement Directive does not provide much help as regards the indicators that should be taken into account when establishing the proportionality of a remedy. For this reason, the idea to establish criteria that the courts can take into consideration when assessing proportionality in the context of a decision has been welcomed.[557]

Possible criteria to be taken into account were categorised by Ohly in the context of comments on the Enforcement Directive.[558] According to him, the court should take the following factors into consideration to reject a claim for injunctive relief: (1) that the loss suffered by the infringer from the injunction grossly outweighs the benefits that the patent holder would obtain from reasonable royalties that the parties would have agreed in the context of a licensing agreement; (2) whether the business model of the patent holder merely consists of collecting royalties or whether the patent holder actually practices the invention or carries on R&D activities; (3) whether the infringer has developed the infringing technology in an independent manner[559] and whether the infringing technology embodies exactly the patent claims or if it is an equivalent; (4) whether the infringed patent is strong or weak, since strong patents may require a broader

[556] See Commission 'Support Study for the ex-post evaluation and ex-ante impact analysis of the IPR Enforcement Directive (IPRED). Final Report (2017) 113 available at https://op.europa.eu/de/publication-detail/-/publication/1e3b2f41-d4ba-11e7-a5b9-01aa75ed71a1 (accessed 5 September 2020).

[557] Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafał Sikorski (ed.), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 38 citing the document of the Commission, 'Summary responses to the public consultation on the evaluation and modernisation of the legal framework for the enforcement of intellectual property rights', available at: file:///C:/Users/Josef%20Drexl/Downloads/Summary%20public%20consultation_final.pdf (accessed 16 May 2020) according to which many respondents stated that establishing criteria for assessing proportionality would enhance legal certainty.

[558] Ansgar Ohly, 'Three Principles of European IP Enforcement Law: Effectiveness, Proportionality, Dissuasiveness' in Josef Drexl et al. (ed.), *Technology and Competition: Contributions in Honour of Hanns Ullrich* (Larcier 2009) 257, 266-267.

[559] Ibid. See also in this regard Mark Lemley and Carl Shapiro, 'Patent Holdup and Royalty Stacking', (2007) 85 Texas Law Review 1991, 2036.

protection than the ones that are weak, because in the latter case the inventive step has been smaller and (5) the degree of responsibility.[560]

Another proposal relies on the example of the Trade Secrets Directive,[561] which may be helpful in individuating the factors to be taken into consideration.[562] Indeed, pursuant to Article 13(1) Trade Secrets Directive, when a court is required to assess the proportionality of injunctive relief, the specific characteristics of the individual case must be taken into consideration. Moreover, the provision delineates a list of criteria which need to be taken into account when dealing with the proportionality of such remedy: (a) the value or other specific characteristic of the trade secret, (b) the measures implemented to protect the trade secret, (c) the conduct of the infringer in acquiring, using or disclosing the trade secret, (d) the consequences and impact of the unlawful use or disclosure of the trade secret, (e) the legitimate interests of the parties involved and the impact which the granting or rejection of the measure can have on the parties, (f) the legitimate interests of third parties, (g) the public interest and (h) the safeguard to fundamental rights. Some of these factors enumerated in Article 13(1) Trade Secrets Directive can also be applied directly in the context of patent infringement proceedings.[563] First of all, in particular, in relation to point (a) concerning the value and features of the trade secrets, in the context of patents, the fact that the infringed patent covers only a minor feature of a more complex product and the protected feature does not have a great influence on the demand of the product could play a role to favour the decision not to grant an injunction. Secondly, when considering the interests of the parties and the consequences of the grant or rejection of the measure (e), in patent cases it may well be relevant to assess whether the patentee commercialises his invention via non-exclusive licences or through exclusive ones restricted to a limited number of licensees. In the former case, it appears that the patent holder is mainly interested in receiving monetary compensation and thus the refusal to grant an injunction may not negatively affect her interests. Conversely, in the latter case, allowing compensation instead of an injunction can have a negative impact on the attractiveness of the licences, considering that the licensees may lose the technological advantage over the other competitors.[564] Lastly, also considerations of public interest (g) are very relevant in the context of patents as well. In particular, for example, in the ICT sector in which the access to SEPs may need to be safeguarded on the basis of public interest considerations.

[560] Ibid.

[561] Directive (EU) 2016/943 of the European Parliament and of the Council of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure, OJ L 157, 15.6.2016, 1-18. The provision on remedies in the new Directive are in particular a development of the rules set in the previous Directive 2004/48 and represent an important step forward in this regard.

[562] As noted by Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafał Sikorski (eds), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 39.

[563] Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafał Sikorski (ed.), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 40 analyses which factors may well be applied in patent cases and how they could be assessed in that context.

[564] Rafał Sikorski, 'Patent Injunctions in the European Union' in Rafał Sikorski (ed.), *Patent Law Injunctions* (Wolters Kluwer 2019) 31, 41.

Providing access to SEPs allows access to technologies, which is necessary in order to be present in markets where standard technologies are used, and it thus stimulates follow-on innovation. Conversely, in case of unwilling licensees, granting instead of denying an injunction would better correspond to the public interest, considering that implementers should not be allowed to free-ride on the investment of SEP holders.[565]

2.2. Injunctions in Standard Essential Patents (SEPs) litigation – the 'Huawei' test

In the context of the discussion concerning the grant or denial of injunctive relief, particular attention should be given to the cases concerning standard essential patents (SEPs). In fact, these cases are also particularly important for start-ups since the ones active in the digital sector may often, for example, be implementers of SEPs for mobile telecommunication technologies. In this regard, it is undisputed that there is no abuse of dominant market position if a patentee asserts her standard essential patents and seeks an injunction against an implementer who is not willing to conclude a licensing agreement and pay royalties.[566] The unwillingness of the implementer justifies an injunction. The situation is however different if the implementer is willing to conclude a licensing agreement, but the parties disagree over its terms. In *Huawei*,[567] the CJEU has provided a framework which allows to assess the parties´ willingness to conclude a licensing agreement on FRAND terms. The case concerned a patent which was essential for the use of the LTE standard and which Huawei had committed to license on FRAND terms during the standard setting process before ETSI.[568] ZTE, a manufacturer of infrastructure devices implementing the LTE standard, intended to obtain a licence from Huawei. However, ZTE continued to manufacture products implementing the LTE standard although negotiations were not terminated. Therefore, Huawei sued ZTE before the Dusseldorf Regional Court, demanding the grant of an injunction to prohibit the use of its patented invention by ZTE. The CJEU was asked to assess whether Huawei, by seeking injunctive relief against ZTE, abused its dominant position pursuant to Article 102 TFEU and was asked to provide criteria that could allow the national court to establish when a licensee can be deemed to be willing to conclude a licensing agreement. The CJEU recognised the right of SEP holders to obtain injunctive relief against infringers,[569] but it also held that genuinely willing licensees should not be targeted with injunctions and should not be denied access to SEPs. Hence, it established a test consisting of multiple steps, which sets minimum guidelines for a basic licensing negotiation structure between respectively willing licensing parties.[570] First, prior

[565] Ibid.
[566] Case AT. 3985 – *Motorola – Enforcement of GPRS standard essential patents,* C(2014) 2892 final; Case AT.39939 *Samsung – Enforcement of UMTS standard essential patents,* C(2014) 2891 final.
[567] Case C-170/13 *Huawei* ECLI:EU:C:2015:477.
[568] Ibid. para. 22.
[569] Ibid. para. 46.
[570] Ibid. para. 61 to 69. It is outside the scope of the present dissertation to provide an extensive analysis of the issues related to the different parts of the negotiation framework. For literature in this regard see, among others, Pedro H. Batista and Gustavo C. Mazutti, 'Comment on Huawei Technologies (C-170/13): Standard Essential patents

to starting infringement proceedings, the SEP holder has to notify the implementer of the infringement specifying the way in which the patents were infringed. Secondly, upon request of the implementer, the patentee has to present an offer containing all relevant terms of a licensing agreement and explain how the royalty rate was calculated. The offer has to be fair, reasonable and non-discriminatory (FRAND). Thirdly, if the implementer finds the offer to be not FRAND, she should promptly respond with a counteroffer. Fourthly, if the counteroffer is rejected, the implementer should provide an appropriate security if she is already implementing the SEP. Finally, if the disputes concerning the licensing terms cannot be solved amicably, the parties should agree that the terms shall be determined by an independent third party.[571] In this regard it is relevant to note that the CJEU mentioned the Enforcement Directive in its judgment,[572] but has only decided the case on the basis of competition law considerations. This limits the type of cases for which the proportionality test is needed, namely, cases that do not relate to SEPs such as those involving patent trolls.

Against the backdrop of the provisions of the Enforcement Directive the question is whether, in the selected States, national courts do actually exercise discretion and to what extent they do so on the basis of the principle of proportionality.

2.3. The Interplay between Proportionality and Discretion for Injunctions before National Courts and the UPC

a) Germany

When analysing the situation in Germany, it is important to take into account the recently implemented reform of the German Patent Act (Patentgesetz, PatG) focussing, among other things, exactly on the matter of proportionality. Therefore, the relevant amendment and its implications will be briefly addressed. Furthermore, the analysis presents the current judicial practice on the matter.

After more than two years of controversial discussions and consultations between different stakeholders and several draft bills, in summer 2021, Parliament passed a bill to amend the Patent Act.[573] The reform, *inter alia*,[574] introduces a statutory proportionality exception to §

and Competition Law – How Far Does the CJEU Go?' (2016) 47 IIC 244, 245; Haris Tsilikas, 'Huawei v. ZTE in Context – EU Competition Policy and Collaborative Standardization in Wireless Telecommunications' (2017) 48 IIC 151, 169 ss.; Peter Picht, 'The ECJ rules on standard-essential patents: thoughts and issues post-Huawei: (2016) 37 ECLR 365, 367 ss.

[571] Case, C-170/13 *Huawei,* ECLI:EU:C:2015:477, paras 61 to 69.

[572] Ibid. para. 57.

[573] 'Zweites Gesetz zur Vereinfachung und Modernisierung des Patentrechts' of 10 August 2021, BGBl. 2021 Teil I Nr. 53, s. 3490.

[574] For an overview of the other elements of the reform, see Ansgar Ohly and Martin Stierle, 'Unverhältnismässigkeit, Injunction Gap und Geheimnisschutz im Prozess. Das Zweite Patentrechtsmodernisierungsgesetz im Überblick' (2021) GRUR 1229.

139(1) PatG excluding injunctions in cases where such remedy would be disproportionate, taking into consideration any special circumstance and the interests of the parties involved.[575] The reform has been welcomed by scholars,[576] who however raised critique as regards the provision's – allegedly – too narrow scope of application.[577] Overall, also in light of the interests of start-ups, the reform should however be welcomed. The amendment may in fact lead to an increase of the cases in which the defendant, as an alleged infringer, can raise the argument of disproportionality, on the basis of the circumstances of the specific case. The Explanatory Memorandum includes a non-exhaustive list of five exemplary aspects which can be relevant when balancing the circumstances of each case, namely, the interests of the infringed party, the economic effects of the injunction, the complexity of the infringing product or service, any subjective elements and any third-party interests.[578] For example, as regards the interests of the infringed party, courts will have to consider the specific interests at stake and not rely on the general interest shared by every patent holder. It will therefore decide against the grant of an injunction if the patent holder is only interested in the monetisation of her invention and not in its implementation. Indeed, pursuant to the Memorandum, such behaviour is not aligned with the 'innovation function' of patent law.[579] Nevertheless, in such cases, courts will also have to

[575] The reform, effective since 18 August 2021, adds the following sentences to § 139(1) Patent Act (Patentgesetz), which, in its first part continues to provide the patentee with a claim against the infringer for injunctive relief if an infringement is found: 'The right is precluded insofar as injunctive relief would due to special circumstances and in accordance with the principle of good faith constitute a disproportionate hardship for the infringer or a third person which is not justified by the exclusive right. In such case, the infringed person shall be granted adequate monetary compensation. The right to damages according to paragraph 2 remains unaffected.'

[576] Cf. Reto Hilty, Luc Desaunettes, Daria Kim, Matthias Lamping et al., 'Position Paper on the Envisages Reform of the German Patent Act', Max Planck Institute for Innovation and Competition Research Paper No. 20-25 (2020) 4, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3592465 (accessed on 5 April 2020), commenting on the proposal of reform presented on 14 January 2020, available at Diskussionsentwurf des Bundesministeriums der Justiz und für Verbraucherschutz, Entwurf eines Zweiten Gesetzes zur Vereinfachung und Modernisierung des Patentrechts (Discussion Draft of the Federal Ministry of Justice and Consumer Protection, Draft of the Second Act on the Simplification and Modernisation of Patent law), 14. January 2020, available at https://www.bmjv.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/DiskE_2_PatMoG.pdf;jsessionid=35DDA18CBBDB7E6BFA1563C696459AEF.1_cid297?__blob=publicationFile&v=1 (accessed on 5 April 2020).

[577] Ibid. 5-6. It is claimed that the envisaged wording appears to be too narrow because it requires a proportionality assessement that is deemed to go against its own objective. Indeed, pursuant to both the Discussion Draft and to the final implemented wording, the enforcement of an injunction order would be disproportionate if it cannot be considered as a good faith conduct. Looking at the proportionality principle as an expression of the principle of good faith would surely encompass several cases but, at the same time, other dysfunctional effects of an injunction would not be covered by the provision if they do not constitute a conduct against good faith for the infringer. In addition, the reduction of proportionality to a mere good-faith analysis would limit its scope in comparison to the proportionality requirement as indicated in the Enforcement Directive.

[578] Deutscher Bundestag - Drucksache 19/25821 (13.01.2021), 54 available at https://dserver.bundestag.de/btd/19/258/1925821.pdf (accessed on 11 December 2022). For a detailed analysis of all the mentioned elements see Martin Stierle and Franz Hofmann, 'The Latest Amendment to the German Law on patent Injunctions: The New Statutory Disproportionality Exception and Third-Party Interests' (2022) GRUR International 1123, 1128-1129.

[579] Deutscher Bundestag - Drucksache 19/25821 (13.01.2021), 54 available at https://dserver.bundestag.de/btd/19/258/1925821.pdf (accessed on 11 December 2022).

assess the specific intention as regards to the patent in scope and not merely the patentee's overall business model. Conversely, an injunction is likely granted, despite the hardship for the infringer, if the infringer's products are in direct competition with the patentee's products and the infringement puts the right holder's business at economic risk.[580] In any case, it is relevant to stress that despite the implemented changes the Explanatory Memorandum highlights that in practice the grant of an injunction will continue to be the general rule, while the denial of an injunction will represent only a rare exception.[581] Along these lines, the previous Draft Amendment Act published by the German Federal Ministry of Justice in January 2020 at earlier stages of the reform process stressed that in any case the explicit referral to the principle of proportionality must not be read as diminishing the importance of the rights of the patent holder, that injunctive relief is an extremely important remedy for the enforcement of patents and that the denial of injunctions should be limited to exceptional cases of unacceptable harm for the alleged infringer.[582] This position can and has to be criticised to the extent that the standard to be applied for the proportionality assessment should be the overall patent system and courts shall be reminded that priority should not be given to the interests of the patentee per se.[583]

In addition, when the disproportionality exception limits the right to injunctive relief, the patentee can claim compensation pursuant to the fourth sentence of the new § 139(1) PatG, which has been included only in the last draft bill. This new provision on compensation in lieu of patent injunction presents several aspects which will require interpretation by courts. For example, it is not yet clear how such compensation shall be calculated.[584] The Explanatory Memorandum clarifies that reasonable royalties constitute the regular minimum for the basis of calculation, while the specific circumstances of the case can either reduce or increase the compensation, such as in the case of a dysfunctional use of the patent or an insufficient freedom-to-operate analysis, respectively.[585] In addition, the effect of the compensation on the right to claim damages is another element which requires further clarification. The fourth sentence of the new § 139(1) PatG, leaves unaffected the right to damages. However, it is not clear if the patent holder can claim damages in general and regardless of the type of financial compensation

[580] Ibid.

[581] Ibid., 52. See, also, Thomas Kühnen, *Handbuch der Patentverletzung* (14th edn, Carl Heymanns 2022) para. D.546.

[582] Diskussionsentwurf des Bundesministeriums der Justiz und für Verbraucherschutz, Entwurf eines Zweiten Gesetzes zur Vereinfachung und Modernisierung des Patentrechts, 14 January 2020, 32, 50 ss, esp. 51-52, available at https://www.bmjv.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/DiskE_2_PatMoG.pdf;jsessionid=35DDA18CBBDB7E6BFA1563C696459AEF.1_cid297?__blob=publicationFile&v=1 (accessed on 5 April 2020).

[583] On this position see Reto M. Hilty, Luc Desaunettes, Daria Kim, Matthias Lamping et al., 'Position Paper on the Envisages Reform of the German Patent Act', Max Planck Institute for Innovation and Competition Research Paper No. 20-25(2020) 6, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3592465 (accessed on 5 April 2020).

[584] See, in this regard, among others, Ansgar Ohly 'Der Ausgleichanspruch gemäß § 139 I 4 PatG als Rechtsfortwirkungsanspruch' (2022) GRUR 303.

[585] Deutscher Bundestag - Drucksache 19/25821 (13.01.2021), 54 available at https://dserver.bundestag.de/btd/19/258/1925821.pdf (accessed on 11 December 2022).

that was paid in lieu of an injunction or only if the claimed damages exceed the financial compensation paid. The latter interpretation would better respect the principle that compensatory remedies must not enrich the defendant but only compensate damages.[586]

The recently implemented reform is a welcomed development. In fact, until today, the German legislature had refrained from including any referral to the proportionality principle for the purpose of restricting the availability of injunctions in § 139(1) Patent Act. Nor did the legislature make use of the option of Article 12 Enforcement Directive (compensation in lieu of an injunction).[587]In any case, it is relevant to highlight that there is the probability that such amendment would not fundamentally change judicial practice in Germany in the long term.[588] In this regard, it is interesting to note that during the legislative process, it has been stated that the amendment is merely meant to clarify § 139 PatG[589] and that the previously existing German law already allowed, to a certain extent, to take into consideration the proportionality principle.

The underpinning principle of proportionality is in fact reflected in the general good-faith principle of the law of obligations (§ 242 German Civil Code). Furthermore, proportionality considerations in any case arise from Article 3(2) Enforcement Directive and from the principles recognised in the relevant national case-law, in particular the *Heat Exchanger* decision of the Federal Court of Justice (BGH).[590]

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[586] Ansgar Ohly and Martin Stierle, 'Unverhältnismässigkeit, Injunction Gap und Geheimisschutz im Prozess. Das Zweite Patentrechtsmodernisierunggesetz im Überblick' (2021) GRUR 1229, 1234.

[587] In this regard it is interesting to note that Article 12 Enforcement Directive was modelled on § 100 (former §101(1)) of the German Copyright Act but was not implemented in patent law. See the proposal for a Directive of the European Parliament and of the Council on measures and procedures to ensure the enforcement of intellectual property rights of 30 January 2003, COM(2003) 46 final, 23.

[588] See Mathieu Klos, 'One year since the new German patent law, the injunction remains the same' (17 August 2022) available at https://www.juve-patent.com/news-and-stories/legal-commentary/one-year-since-the-new-german-patent-law-the-injunction-remains-the-same/ (accessed 10 December 2022), claiming that judicial practice has not substantially changed after one year of application of the law reform.

[589] Diskussionsentwurf des Bundesministeriums der Justiz und für Verbraucherschutz, Entwurf eines Zweiten Gesetzes zur Vereinfachung und Modernisierung des Patentrechts, 14 January 2020, 30, 32, 50-51, available at https://www.bmjv.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/DiskE_2_PatMoG.pdf;jsessionid=35DDA18CBBDB7E6BFA1563C696459AEF.1_cid297?__blob=publicationFile&v=1 (accessed 18 February 2020).

[590] Federal Court of Justice (*BGH*), 10 May 2016, Case No. X ZR 114/13, (2016) GRUR 1031 – Wärmetauscher (Heat Exchanger). In this decision, the Court ruled that a court order to cease and desist may not be granted if the enforcement of the patentee's right of exclusivity would constitute undue harm and would therefore be contrary to good faith, regardless of the patentee's interests vis-à-vis the infringer. Yet, despite of the fact that the amendment does not seem to lead to substantial changes in German practice and approaches, it is relevant to note how some commentators have already questioned to what extent this narrowing of the definition of proportionality is helpful for the plaintiff and/or defendant, respectively. In particular, it has been noted that it seems more tailored for patent holders' needs for the following reasons. First, by saying that it is the enforcement that may be disproportionate and not the injunctive relief *per se,* it poses the emphasis on tailoring the remedy instead of denying injunctive relief. Second, the standard of 'special circumstances' is very high and in the few cases in which proportionality concerns influence the outcome of the dispute it is not conceivable that injunctive relief would be completely avoided, instead of being merely delayed. Third, instead of claiming a more neutral balancing of interests, the wording seems to suggest a pro-patent bias, because it puts the patentee's rights first, by stressing the need of 'taking into account the patent holder's interests against the infringer'. Fourth, the principle of good faith included in § 242 German Civil

Scholarship has also highlighted the concept of abuse of law and a general principle of proportionality enshrined in German statutory law.[591] The abuse-of-rights defence is a general principle of private law and under German law it is present in substantive private law provisions (§§ 275(2), 251(2); 906(2) and 912(2) BGB) and additional general clauses).[592] Nevertheless, one needs to be careful when transposing this principle into patent law, because considering the special nature of this exclusive right, the patent holder can not be expected to tolerate infringement. Yet the proprietor will be required to tolerate the alleged infringement, if there the claim for injunctive relief amounts to an abuse of market dominance based on Article 102 TFUE violation.[593] In this framework, it is relevant to highlight that at the time before the *Huawei* judgment, German courts have decided several standard essential patents (SEP) cases holding that filing an action for an injunction is contrary to good faith if the right holder has abusively denied a licence before and would in any case be required to grant a licence under competition law.[594] Since the *Huawei* decision instead, the analysis of German courts in cases concerning infringement of SEPs has focussed on providing further specifications to the 'Huawei-test' as developed in the CJEU judgment.[595] Importantly, the German Federal Court of Justice (BGH) has

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Code applies also to patent law. Yet, in practice, it is difficult to prove that a patent owner acted in bad faith. Last, the wording 'a hardship not justified by the exclusionary right' places once more the emphasis on the importance that patent holders can indeed enforce their exclusionary rights effectively. For more details on these points and additional considerations in this regard see Florian Mueller, 'Proportionality clause in draft German patent reform bill falls short of not only *eBay v. MercExchange* but also the EU's definition" (17 January 2020) available at http://www.fosspatents.com/2020/01/proportionality-clause-in-draft-german.html (accessed 22 February 2020).

[591] As reported in Martin Stierle and Franz Hofmann, 'The Latest Amendment to the German Law on patent Injunctions: The New Statutory Disproportionality Exception and Third-Party Interests' (2022) GRUR International 1123, 1125.

[592] This defence must be taken into account *ex officio*, but it must be accompanied by substantial submissions on the circumstances that ground that defence in the individual case. Anyways, due to the difficult considerations on fairness related to the abuse defence, it is not an easy task to identify elements of abuse. See in this regard the attempt by Ansgar Ohly, 'Patenttrolle oder: Der patentrechtliche Unterlassungsanspruch unter Verhältnismäßigkeitsvorbehalt? Aktuelle Entwicklungen im US-Patentrecht und ihre Bedeutung für das deutsche und europäische Patentsystem' (2008) GRUR Int. 787, 793 ss. to categorise the defence of the abuse of a legal right in three doctrinal categories, namely, the abuse of a dominant market position, the abuse of a legal right in the actual sense and the disproportionality. Mark Marfé, Alexander Reetz, Camille Pecnard, et al., 'The Power of National Courts and the Unified Patent Court to Grant Injunctions: A Comparative Study' (2015) Journal of Intellectual Property Law and Practice 180, 182. The situation becomes instead clearer in the cases in which the patent holder violates the principle of *naeminen laedere* (the principle derives from the quote *'honeste vivere, neminem laedere*, *suum cuique tribuere'* by the Roman jurist Ulpian (AD 170-223) and it is at the basis of the principles of proportionality and equity).

[593]See Case, C-170/13 *Huawei,* ECLI:EU:C:2015:477, paras 61 to 69 as explained above. For more details in this regard and referral to relevant case-law see Mark Marfé, Alexander Reetz, Camille Pecnard, et al., 'The Power of National Courts and the Unified Patent Court to Grant Injunctions: A Comparative Study' (2015) Journal of Intellectual Property Law and Practice 180, 182.

[594] Karlsruhe Higher Regonal Court (*Oberlandsgericht, OLG Karlsruhe*), 27 February 2012, Case 6 U 136/11 (2012) *BeckRS* 05121; Düsseldorf Higher Regional Court, 20 January 2011, Case 2 U 9210, (2011) *LKS* 140463.

[595] For a detailed analysis of German courts decisions after *Huawei* see Matthias Leistner, 'FRAND Patents in Europe in the Post-Huawei Era: A Recent Report from Germany' (2018) available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3278769 (accessed on 4 September 2020) 1-23. By way of example, under this framework, the Karlsruhe Higher Regional Court has denied injunctive relief to Philips, plaintiff SEP holder, holding that she had failed to meet the *Huawei* obligations as established by the CJEU. See

recently decided two cases between Sisvel and Haier.[596] In the first judgment of 5 May 2020, concerning the GPRS standards, the BGH held that Haier infringed the patent, which was, in fact, essential.[597] Moreover, it ruled that there was no abuse of dominant position and thus, no infringement of Article 102 TFEU,[598] as there is no obligation to permit the use of an SEP if the other party is not ready to agree on a FRAND licence.[599] In addition, it found that Sisvel was compliant with the *Huawei* judgment since, before initiating proceedings, it notified the alleged infringement to Haier,[600] while the latter, instead, did not express the willingness to agree on a FRAND licence. To that aim, the Court held that it is not sufficient to merely reply to the notice of infringement, but the implementer shall unambiguously declare its willingness to enter into a licence on whatever terms are FRAND.[601] Along similar lines, also in the second case between the parties, the Federal Court of Justice ruled that Haier infringed Sisvel's SEP for the UMTS standard.[602] In particular, it held that the implementer must not only clearly declare its willingness in a FRAND licence but also take part in negotiations in a purposeful manner, thereby demonstrating an on-going willingness.[603] Such requirement is seen as an indispensable counterpart to asking the SEP owner to tolerate the implementer's use of the patent in suit before that he has even acquired a licence.[604]

Overall, it is important to stress that in several judgments prior to the reform, also outside of the SEP context, German courts did not refer to the principle of proportionality when issuing permanent injunctions, and that, due to the system of bifurcation, permanent injunctions have

Karlsruhe Higher Regional Court (*Oberlandsgericht, OLG Karlsruhe*), 30 October 2019, Case 6 U 183/16 (2019) para. 108.

[596] Sisvel holds SEPs which are declared essential to the UMTS and GPRS mobile communications standards. Haier manufactures electronic and mobile devices implementing those standards. The discussions and negotiations between the parties mostly took place prior to the *Huawei v ZTE* case and did not result in a FRAND licence. Sisvel therefore started two parallel proceedings before the Dusseldorf Regional Court. In two decisions of November 2015, the Court granted Sisvel an injunction, together with an order for recall and destruction of infringing products. Upon Haier's appeal, in judgments of 13 January 2016 and 30 March 2017, the Dusseldorf Higher Regional Court held that Sisvel did not comply with *Huawei v ZTE* who, in turn, appealed the decision to the Federal Court of Justice. See cases, Dusseldorf Regional Court, 03 November 2015, Case 4a O 93/14 and Case 4a O 144/14; see also, Dusseldorf Higher Regional Court, 13 January 2016, Case 15 U 65/15 and 30 March 2017, Case 15 U 66/15. For more details in this regard, see Patricia Cappuyns and Narmeen Al Ganim, 'Four Times FRAND: An Analysis of Recent Judgements from the UK, Germany, the Netherlands and France, and Lessons for the Upcoming UPC System' (2022) 17 Journal of Intellectual Property Law and Practice 946, 951.

[597] Federal Court of Justice, 5 May 2020, Case KZR 36/17, para. 59. For an in-depth analysis of the case see Peter R. Slowinski, 'Licensing Standard Essential Patents and the German Federal Supreme Court Decisions FRAND Defence I and FRAND Defence II' (2021) 52 IIC 1490.

[598] Ibid., para. 67.

[599] Ibid., para. 70.

[600] Ibid., paras 86-88.

[601] Ibid., paras 83 and 95. The BGH cited in this regard the decision *Unwired Planet v Huawei*, 5 April 2017, [2017] EWHC 711 (Pat).

[602] Federal Court of Justice, 24 November 2020, Case KZR 35/17. For an analysis of the case see Peter R. Slowinski, 'Licensing Standard Essential Patents and the German Federal Supreme Court Decisions FRAND Defence I and FRAND Defence II' (2021) 52 IIC 1490-1497.

[603] Ibid., para. 66.

[604] Ibid., para 58.

been granted even if invalidity proceedings were ongoing.[605] The recently amended wording of § 139(1) Patent Act, represents an important starting point for change. Yet only time will tell to what extent such a reform will influence the judicial practice and establish a different balance in the relationship between right holders and implementers.[606]

b) France

In France, the Enforcement Directive has been transposed into national law by the law relating to the fight against counterfeiting of 29 October 2007,[607] leading to an amendment of the provisions in the French Intellectual Property Code (Code de la propriété intellectuelle, CPI). As in Germany, also in France the option enshrined in Article 12 Enforcement Directive has not been explicitly included. In the context of permanent injunctions pursuant to Article L 613-3 CPI, there is no explicit referral to the principle of proportionality.

Thus, if there is a claim and an infringement is found, the French court will grant the injunction, since injunctive relief is considered to be 'the natural consequence of finding infringement'.[608] However, two specific sets of facts or also exceptional circumstances may lead to a denial of injunctive relief by French courts. First, in rare cases and despite findings of infringement, judges did not grant permanent injunctions on the basis of the fact that infringement stopped or that there was no proof that future infringement will take place.[609] Secondly, a minor exception to

[605] Dusseldorf Higher Regional Court, 09 May 2016, Case 15 U 36/16 Lw and BPatG, 11 January 2017, Case 6 Ni 6/16 (EP): in this SEP case an injunction was issued even if a challenge to the patent´s validity was ongoing; Dusseldorf Higher Regional Court, 30 October 2014, Case 4a O 114/13 and Federal Patent Court, 21 July 2015, Case 4 Ni 5/14 (EP): also in this instance, not relating to SEP, the court issued an injunction despite the fact that a challenge to the patent's validity was ongoing and eventually successful.

[606] In this regard, some commentators have challenged the efficacy of the reform, claiming that since August 2021, German courts have never issued a hardship decision in favour of the alleged infringer. In particular, it has been noted that in two recent cases there has been no change in judicial practice. See case Munich Regional Court, 19 May 2022, Case Az. 7 O 9572/21 and Munich Regional Court, 5 August 2022, Cases 21 O 8879/21 and 21 O 8891/21. In the first case, the court issued an automatic injunction against Ford and in favour of IP Bridge for the infringement of a LTE patent. Similarly, in the second case, concerning an alleged infringement of 4G and 5G Nokia patents by Oppo and its subsidiary OnePlus, the defendant received several automatic injunctions by the Munich and Manheim Regional Courts and had to temporarily stop the sale of their products in Germany. In both cases, the defendants had claimed special hardship, but the courts did not suspend the automatic injunction and, instead, applied in both cases very high standards, as they identified both defendants as unwilling licensees. For comments in this regard and references to further cases see Mathieu Klos, 'One year since the new German patent law, the injunction remains the same' (17 August 2022) available at https://www.juve-patent.com/news-and-stories/legal-commentary/one-year-since-the-new-german-patent-law-the-injunction-remains-the-same/ (accessed 10 December 2022) and Florian Müller, 'Standard-essential patent injunctions in Germany unaffected by amended statute: academic papers can't paper over reform advocates' abysmal failure to achieve anything useful' available at http://www.fosspatents.com/2022/10/standard-essential-patent-injunctions.html (accessed on 10 December 2022).

[607] Loi n° 2007-1544 du 29 octobre 2007 relative à la lutte contre la contrefaçon, JORF n° 252 (30 October 2007). modified by Ordonnance n°2009-537 du 14 mai 2009 – art. 1.

[608] Jean Foyer and Michel Vivant, *Le droit des brevets* (PUF 1991) 349.

[609] *Cour d'appel de Paris,* 6 February 2009 (RG 08/03497); *Tribunal de grande instance de Paris,* 1 April 2009 (RG 07/03876).

the grant of a final injunction in case of finding of infringement can be found in Article L 615-10 CPI, pursuant to which there will be no injunction if the infringing acts were made by the State for purposes of national defence.

In addition, there are two types of exceptional circumstances that French judges take into account to deny injunctive relief, namely, when defendants rely on a 'competition law defence' and on an 'abuse of rights defence'.[610] Competition law defences are based on arguments of anticompetitive agreements (Article 101 TFEU and Article L 420-1 French Commercial Code) or abuse of dominant position (Article 102 TFEU and Article L 420-2 French Commercial Code). Moreover, in the context of SEP litigation involving patent holders who have committed to grant a licence on FRAND terms, defendants can rely on a 'FRAND defence' which is nevertheless based on competition law arguments. However, to date, the *Huawei* framework of negotiations as developed by the CJEU to assess if patent holders abuse their dominant position when requesting an injunction has been applied only in a very limited number of French cases.[611] In addition, similarly to the situation in Germany, also under French law it is possible to raise the abuse-of-rights defence. However, it is interesting to note that even if the argument is often relied upon, French courts have accepted this defence in patent litigation only in rare cases. For example, in the context of standardisation, the Paris District Court held that it was abusive to start an infringement action on the basis of patents obtained in violation of the principle of trust that exists during the standardisation process.[612]

c) United Kingdom

In the United Kingdom the Intellectual Property Regulations 2006[613] implemented the Enforcement Directive. Although there is no explicit referral to Articles 3 or 12 of the

[610] See in this regard Amandine Léonard, 'Injunctions in the French Patent Law' in Rafał Sikorski (eds), *Patent Law Injunctions* (Wolters Kluwer 2019) 87, 96.

[611] Tribunal de commerce de Marseille, 20 September 2016, *Wiko SAS c. Sisvel UK Ltd.* (RG 2016F01637). This first French-FRAND case shows that a demand letter which includes several information on patents together with a basic form sheet for a potential license corresponds to the first step of the *Huawei* negotiation framework. Prior to the *Huawei* decision, French courts dealt with a number of cases concerning FRAND issues. The cases however did not refer to permanent injunctions but only to applications for preliminary injunctions, which have been more often dismissed than granted. See *Tribunal de grande instance de Paris,* 30 October 2015, *Viringo Infrastructure inc. C. ZTE Corporation and ZTE France SASU* (RG 13/06691); *Tribunal de grande instance de Paris,* 17 April 2015, *Core Wireless c. LG Electronics* (RG 14/14124).

[612] *Tribunal de grande instance de Paris,* 22 February 2006, (RG 06/05796). In the case at hand, the companies *Souriau* and *Deutsch Distribution* were both part of the discussions among various developers in order to create a new electronic connector, which would then become a standard in the aeronautic sector. After the discussions, *Souriau* applied for a patent on the new technology and once the patent was granted, it initiated an infringement action against *Deutsch Distribution,* which counterclaimed that the action was abusive. The Paris District Court confirmed that, considering the context of the standardisation process, the initiation of an infringement claim constituted an abuse of rights. See Amandine Léonard, 'Injunctions in the French Patent Law' in Rafał Sikorski (eds), *Patent Law Injunctions* (Wolters Kluwer 2019) 87, 99.

[613] Intellectual Property (Enforcement, etc.) Regulations 2006, SI 2006/1028, which came into force on 29 April 2006.

Enforcement Directive, the legislature and the courts have clarified that the already existing legislation and courts in previous practice followed the principles enshrined in Article 3 and enabled to grant compensation in lieu of injunctive relief if appropriate along the line of Article 12 Enforcement Directive.[614]

Article 12 is indeed an import of the common law principle of the equitable nature of injunctions. To a certain extent, Article 12 can also be understood as an option for the common law jurisdictions of the UK and Ireland to maintain their legal traditions. Under these laws, proportionality considerations derive as a direct consequence of the fact that an injunction is an equitable remedy and therefore is not available as of right but depends on the court's discretion. Thus, the availability of injunctive relief depends on the facts of the case and the court can decide whether or not to grant an injunction even if there is a proven infringement and the defendant threatens to continue the infringing acts.

Moreover, to decide whether to award damages instead of injunction, English courts rely on the *Shelfer* decision.[615] In that case, judge A.L. Smith stated that damages could be given in substitution of an injunction: (i) if the harm to plaintiff's rights is minor, (ii) if the harm can be compensated by monetary means, (iii) if it will be appropriately compensated by a small payment, (iv) and if it would be too burdensome for the defendant to bear an injunction.[616] In the more recent decision *HTC v Nokia,*[617] Justice Arnold of the Court of Appeal took into account the principle of proportionality, referring to Article 3(2) Enforcement Directive, as well as to the criteria of efficacy and dissuasiveness when deciding to grant an injunction in a case on patent infringement.[618] In this case, Nokia's patent had not been declared essential to any telecoms standard and therefore there had not been any FRAND commitment in its respect. Justice Arnold held that the products HTC was selling were infringing Nokia's patent and therefore issued a final injunction against HTC. In such context, Mr Justice Arnold noted that Article 3(2) Enforcement Directive requires to refuse granting an injunction if the remedy would be disproportionate, even after having considered the requirements of efficacy and dissuasiveness.[619] Later, the High Court of England and Wales refused to grant a final injunction considering that the measure would have been disproportionate in the case at hand in which the defendant had threatened to do acts which would have fallen within the patent claim, but which would in any case have represented an infringement on a very small scale.[620] Moreover, despite the considerable amount of SEP litigation before the English courts, it was only more recently that courts considered issues

[614] *HTC Corp v Nokia Corp* [2013] EWHC 3778 (Pat), [2013] EWCA Civ 1795, para 3; *Virgin Atlantic Airways Ltd v Premium Aircraft Interiors Group* [2010] EWCA Civ 1513, [2010] FSR 15, paras 23–25.
[615] *Shelfer v City of London Electric Lighting Co* [1895] 1 Ch 287.
[616] Ibid.
[617] *HTC Corp v Nokia Corp* [2013] EWHC 3778 (Pat), [2013] EWCA Civ 1795.
[618] Ibid., para 32.
[619] Ibid.
[620] *NAPP Pharmaceutical Holdings Ltd v. Dr Reddy´s Laboratories (UK) Ltd & Anor* [2016] EWHC 1517 paras 168 to 170, [2016] EWCA Civ 1053.

concerning injunctive relief in this context. One reason for this may be that only relatively recently English courts found the patents involved to be both valid and essential and have been asked to set a FRAND royalty rate.[621] And even in this event, Judge Birss, after having determined a FRAND royalty rate for a global licence of a portfolio of SEPs, held that an injunction shall be granted under the patents which were found to be valid and essential for a standard as long as the defendant declined to take such a licence.[622]

Overall, as a result of this practice, it appears that the position of the patent proprietor in the UK is stronger than what it would be when litigating before a US court applying 35 USC § 283 (1988). Indeed, although also in the United States injunctions are an equitable remedy, the standard of application is different and follows the 'four-factor-test' as established in the *eBay* case.[623]

From this comparative analysis it results that France did not explicitly transpose the principle of proportionality into its legislation. On the other side of the spectrum, the UK legislature did not feel the need to expressly refer to it, considering that such principle has always been recognised as an integral part of the English tradition and practice, due to the legal nature of injunctions as an equitable remedy. Currently, Germany appears to be somehow in the middle. Indeed, on one hand the recent reform integrates the proportionality concern within the wording of the Patent Act. On the other hand, however, it is still an open question to what extent the introduction of such wording would actually change the *status quo* of the current practice. So far, in light of several cases decided after August 2021, it does not appear that courts have substantially amended their approach and they have not issued hardship decisions in favour of the defendants.[624] Overall, only in rare cases considerations of proportionality have influenced the grant of permanent injunctions, while findings of validity and infringement have been deemed

[621] *Viringo Infrastructure Inc v. ZTE (UK) LTd* [2016] EWHC 3924 (Pat) holding that the patent in suit was valid, essential and infringed; *Unwired Planet International Ltd v. Huawei Technologies Co Ltd & Ors* [2015] EWHC 3366 (Pat) and *Unwired Planet International Ltd v. Huawei Technologies Co Ltd & Ors* [2016] EWHC 576 (Pat), holding the respective patents to be valid, essential and infringed.

[622] *Unwired Planet International Ltd v. Huawei Technologies Co Ltd & Ors* [2017] EWHC 2988, [2018] EWCA 2344, determining a FRAND royalty rate for a global licence of a SEP portfolio and *Unwired Planet International Ltd v. Huawei Technologies Co Ltd & Ors* [2017] EWHC 1304, granting an injunction in the event that the defendant declined to take the licence determines to be FRAND. The decision has been recently upheld by the UK Supreme Court in *Unwired Planet International Ltd v Huawei Technologies (UK) Co Ltd* [2020] UKSC 37. For more details in this regard see Trevor Cook, 'Injunctions in English Law' in Rafał Sikorski (eds), *Patent Law Injunctions* (Wolters Kluwer 2019) 51, 61.

[623] See above Section C. IV. 2.1.

[624] See Munich Regional Court, 19 May 2022, Case Az. 7 O 9572/21 and Munich Regional Court, 5 August 2022, Cases 21 O 8879/21 and 21 O 8891/21 as cited and briefly explained above in para. a) of the present Section. For comments in this regard and references to further cases see also Mathieu Klos, 'One year since the new German patent law, the injunction remains the same' (17 August 2022) available at https://www.juve-patent.com/news-and-stories/legal-commentary/one-year-since-the-new-german-patent-law-the-injunction-remains-the-same/ (accessed 10 December 2022) and Florian Müller, 'Standard-essential patent injunctions in Germany unaffected by amended statute: academic papers can't paper over reform advocates' abysmal failure to achieve anything useful' available at http://www.fosspatents.com/2022/10/standard-essential-patent-injunctions.html (accessed on 10 December 2022).

as sufficient conditions for their grant. Only in cases in which the grant of an injunction would have been 'grossly disproportionate', some courts refused to grant such remedy. It results, that there are disparities in the interpretation of Article 3. While UK courts encourage its application to ensure more flexibility in the grant of injunctive relief, German courts have been instead reluctant to apply the principle of proportionality for the grant of permanent injunctions. And as regards Article 12 Enforcement Directive, neither France nor the UK have implemented it into their national laws, while the provision has now been implemented in the patent law.

The difference of approaches is reflected in the uncertainty that surrounds the interpretation of the UPC and RoPs provisions dealing with the matter. Indeed, the way in which the UPC will interpret those provisions will have a considerable influence on the innovation of start-ups.

2.4. Permanent Injunctions under the UPCA (Article 63 UPCA) and the Principle of Proportionality

Article 63(1) UPCA provides the UPC with the power to grant permanent injunctions.[625] The prerequisites of such an order are that the EP or EPUE at hand has been infringed and that the UPC has found an infringement. To this aim, it is not sufficient that all the features of the patent claim were fulfilled in a literal or equivalent manner and that one of the acts mentioned in Article 25 UPCA was committed or that the conditions of Article 26 UPCA regarding indirect patent infringement were met. Indeed, the UPC will also have to take into consideration the patent law limitations of Articles 27-29. The fulfilment of the conditions of one of these limitations excludes infringement.

It is outside of the scope of the dissertation to analyse what would be the likelihood for a patent infringement to be found and whether such a finding is likely to occur more often under the current or under the envisaged UPC system. First, it is not possible to predict how the UPC will interpret and make use of the doctrine of equivalence.[626] Secondly, also a detailed analysis and description of patent law limitations under UPC in comparison to national ones would not help to give an answer to such a question. Thirdly, in any case, the aim is not to attempt to limit the chances for an infringement to be found, which should instead be condemned whenever it occurs. Instead, the purpose of the analysis in this Section is to explore whether, once an infringement is found, the unified system of patent protection guarantees a fair balance of interests of all market players involved, both established and early-stage ones, from the plaintiff and defendant perspective.

[625] Art. 63(1) UPCA reads: 'Where a decision is taken finding an infringement of a patent, the Court may grant an injunction against the infringer aimed at prohibiting the continuation of the infringement. The Court may also grant such injunction against an intermediary whose services are used by a third party to infringe a patent.'
[626] In this regard, see above Section B. II. 2.3.

In any case, despite of the evident uncertainty concerning the likelihood of infringement, it is in this regard relevant to note that there may actually be an increase of the risk of infringement due to an increase in the number of patents in the market. This is due to the fact that the EPUE would come in existence not as an alternative, but as an additional option to European patents in the current form and national patents. In addition, due to the wider EPUE territorial coverage, areas which previously would not have been covered by any European patent designation, would fall under the umbrella of EPUE protection with a consequent restriction of the freedom to operate for new entrants in the market. These considerations therefore suggest that it is even more important to analyse what would be the consequences of an infringement and whether the system foresees adequate tools to ensure a proper balance of the interests at stake. To this aim, this Sub-section examines the conditions under which an injunction would be granted under the UPC.

Pursuant to Article 63(1) UPCA, the UPC has the power to issue an injunction to prohibit infringing behaviour. That power derives from the word 'may' ('*peut*', '*kann*') included in the provision. This wording is in line with Article 56(1) UPCA, which provides that the UPC 'may' order the measures, procedures and remedies established in the UPCA and can subject them to the conditions set in the Rules of Procedure.[627] The power to grant such an order finds an international and EU law basis in Article 44 TRIPS and Article 11 Enforcement Directive.[628]

2.4.1. The Meaning of 'may' in Article 63 UPCA and the Debate over the Existence or Non-Existence of Procedural Discretion

In relation to the meaning of the word 'may' included in Article 63 UPCA, there is an ongoing debate in the literature and among practitioners on its proper meaning. Such discussion and interpretation is relevant for the matter at hand, because it plays an important role in understanding the balancing tools and safeguards provided by the system and assessing whether these appropriately respond to the interests involved.

One the one hand, authors argue that the word 'may' should not be understood as providing the UPC with the procedural discretion to grant or refuse an injunction when it finds that prohibition to be actually disproportionate.[629] Rather, it is stated that such a wording corresponds to Article 44(1) TRIPs and Article 11 Enforcement Directive[630] and that the word has mainly two functions:

[627] Article 56(1) UPCA reads:
The Court may impose such measures, procedures and remedies as are laid down in this Agreement and may make its orders subject to conditions, in accordance with the Rules of Procedure.
[628] See above Section C. IV. 2.1.
[629] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 932-34; Mark Marfé, Alexander Reetz, Camille Pecnard, et al., 'The Power of National Courts and the Unified Patent Court to Grant Injunctions: A Comparative Study' (2015) Journal of Intellectual Property Law and Practice 180-189.
[630] Art. 11 Enforcement Dir. reads 'Member States shall ensure that, where a judicial decision is taken finding an infringement of an intellectual property right, the judicial authorities may issue against the infringer an injunction

first, to give the Court the power, intended as legal authority along the lines of the above mentioned provisions, to grant an injunction.[631] Second, it allows the Court to deny an injunction if such a claim is not available on non-patent law grounds,[632] even if a patent is found to be infringed. Indeed, the UPC is an international private law court, which has to follow private law principles, and if it finds a patent infringement, after taking into account all possible defences under non-patent substantive law, it has an obligation to issue an injunction. Tilmann further argues that the grounds which could lead to a refusal of an injunction are multiple and do take into consideration the possible interest and needs of the defendant in an exhaustive manner. As a consequence, there would be no need to provide the UPC with additional discretion not to grant a prohibition order where an infringement exists.[633] In addition, he argues that when comparing Article 63 UPCA with other provisions of Articles 56 ss UPCA, it appears that the former was not drafted on purpose as a discretion rule which would authorise the Court to refrain from issuing an injunction.[634] Thus, according to this position and following both a literal interpretation (derived from Enforcement Directive and TRIPS provisions) and the purpose (*telos*) of the law, it can be excluded that in this context the word 'may' should be interpreted in a way to give to the UPC power to exercise decision-making discretion.

Yet, according to other authors,[635] the wording 'may' indicates that the UPC is provided with the discretion to refuse injunctive relief. According to this position, such argument appears obvious on the basis of the fact that otherwise the drafters of the Agreement would have used the word 'shall' to exclude any discretion of the UPC and to make injunctions automatic in the case of an infringement.[636] However, interpreting the provision in the way of granting discretion to the UPC raises serious concerns, considering that the provision does not indicate in any way the principles that would govern the exercise and the limits of the discretion. Nor does the obligation of the UPC to take into account the interests of the parties according to Article 56(2) UPCA provide any more guidance on how to exercise this discretion. Therefore, the scope of discretion would remain completely vague, thereby reducing legal certainty and predictability.

In light of the above, although the arguments on both sides are valid, it must be noted that the former fails to take due account of the fact that the related RoP 118.1 concerning the decision

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aimed at prohibiting the continuation of the infringement ...' following the example of Art. 44 TRIPS pursuant to which 'the judicial authorities shall have the authority to order a party to desist…'.

[631] This along the lines of Art. 44(1) TRIPs, pursuant to which 'the judicial authorities shall have the authority to order a party to desist…'.

[632] These refer to Art 3(2) Enforcement Dir. and other private law grounds as mentioned above Section C. IV. 2.1.

[633] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 933.

[634] For example, Tilmann notes how the discretion enshrined in Art. 59 UPCA (order to produce evidence) is restricted by ensuring confidentiality and the exclusion of self-incrimination, how the discretionary rule of Art. 60 UPCA (preserving evidence) is limited by ensuring confidentiality, or how pursuant to Art. 62 UPCA the UPC is required to make a balancing of interests within its discretionary decision.

[635] Benjamin Schröer, 'Einheitspatentgericht – Überlegungen zum Forum-Shopping im Rahmen der alternativen Zuständigkeit nach Art. 83 Abs. 1 EPGÜ' (2013) GRUR Int. 1102, 1107.

[636] Ibid.

on the merits in addition to orders and measures, includes the wording 'without prejudice to the discretion of the Court referred to in Articles 63, 64, 67 and 80 (…).' Given the legal nature of the Rules of Procedure in relation to the UPCA provisions, it is evident that the norm clarifies that a discretion is conferred to the Court in the context of Article 63 UPCA.[637] And even if Tilmann was right in arguing that the term 'discretion' in Article 118.1 RoP is legally incorrect,[638] it cannot be denied that it has to play an important role in the interpretation of Article 63 UPCA and so does the legislative history of the mentioned Rule of Procedure. Indeed, the 16th version of the draft RoP presented in Rule 118.2 a wording which literally followed Article 12 Enforcement Directive.[639] Thus, the version of the UPCA RoP sought to provide the Court with the option, at the request of the interested party, to grant compensation and damages instead of injunctive relief – including the general introduction that such option would apply without prejudice to the discretion granted in Articles 63 and 64 UPCA – under the three cumulative conditions (i) that the infringer acted unintentionally and without negligence, (ii) that injunctive relief would cause disproportionate harm and (iii) that damages and compensation appear to be reasonably satisfactory.[640]

According to Tilmann, this text for Rule 118.2 was deleted for mainly two reasons: first, because the exercise of this option in the RoP would go beyond what the UPC allows for and, therefore, would not be in compliance with the Agreement as required by Article 41(1) UPCA.[641] Hereby, Tilmann hints at the fact that, with regard to injunctions, the drafters of the UPCA did not make explicit use of the option granted by Article 12 Enforcement Directive, while they explicitly did so in the case of Art 68 (damages) by integrating the option of Article 13(2) Enforcement

[637] Pursuant to Article 56(1) UPCA, the UPC has to grant measures and remedies in accordance with the Rules of Procedure. See above note 629.

[638] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1744, para 3.

[639] As explained above, according to Art. 12 Enforcement Dir., the Member States 'may' provide and thus have the option to adopt a rule according to which, at the request of the defendant, the competent judicial authorities orders to pay to the injured party compensation instead of applying the prohibition measures of Art 11 Enforcement Dir (prohibition).

[640] Ibid.

[641] Article 41 UPCA reads:

> (1) The Rules of Procedure shall lay down the details of the proceedings before the Court. They shall comply with this Agreement and the Statute.
>
> (2) The Rules of Procedure shall be adopted by the Administrative Committee on the basis of broad consultations with stakeholders. The prior opinion of the European Commission on the compatibility of the Rules of Procedure with Union law shall be requested. The Rules of Procedure may be amended by a decision of the Administrative Committee, on the basis of a proposal from the Court and after consultation with the European Commission. However, such amendments shall not contradict or alter this Agreement or the Statute.
>
> (3) The Rules of Procedure shall guarantee that the decisions of the Court are of the highest quality and that proceedings are organised in the most efficient and cost effective manner. They shall ensure a fair balance between the legitimate interests of all parties. They shall provide for the required level of discretion of judges without impairing the predictability of proceedings for the parties.

Directive.[642] Secondly, he states that the introductory sentence by referring to 'discretion of the Court pursuant to Articles 63 and 64 UPCA' creates the, allegedly, incorrect impression that both provisions grant discretion, while this is not the case.[643]

However, despite the fact that these arguments may well be correct from a legal standpoint, they can neither serve as a justification to delete such a rule, nor do they prove *per se* that now Article 63 UPCA excludes discretion. Indeed, it seems evident that the latter reason argued by Tilmann does not justify the deletion and does not exclude the existence of discretion, simply because also in the RoPs, Article 118(1) still explicitly indicates the existence of 'discretion' of the Court.[644] The former reason as such does not seem a good reason to completely delete a norm which actually provided for a very important safeguard for the interests of the defendant.

In light of the above, the position which argues that the wording 'may' in Article 63 UPCA indicates that the UPC is provided with the discretion to refuse injunctive relief must be welcomed. This interpretation however raises concerns to the extent that the provision does not indicate in any way the principles that would govern the exercise and the limits of the discretion, thereby reducing legal certainty and predictability.

2.4.2. The Injunction Gap (and Bifurcation) and other Consequences of Potential Discretion

The analysis on how and at which conditions the UPC will grant injunctions and on their implications for start-ups, would not be complete without referring also to a different issue, and namely, the risk of an 'injunction gap', which in any case may still be potentially related to proportionality considerations. The option of separating infringement proceedings from invalidity proceedings in sense of bifurcation can be extremely critical for a defendant and even more for a defendant who lacks financial resources. Such situation may indeed open the risk of an 'injunction gap', meaning that the infringement proceedings are concluded with an injunction order prior to the decision on the validity of the patent.[645] This gap can be indeed disruptive for a start-up company, that is forced to stop the production and commercialisation of potentially its only product. Nevertheless, also in this case it is not easy to foresee to what extent this situation will actually constitute a real risk in the context of the UPC, because the choice of such an option again depends on the discretion of the Court.[646] In this regard, the approaches of the

[642] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 935.
[643] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 936.
[644] As noted above, Rule 118.1 RoP in its introductory part still provides: 'In addition to the orders and measures and without prejudice to the discretion of the Court referred to in Articles 63, 64, 67 and 80 of the Agreement (…)'.
[645] For more details on the functioning of bifurcation see Peter Meier-Beck, ‚Bifurkation und Trennung – Überlegungen zum Übereinkommen über ein Einheitliches Patentgericht und zur Zukunft des Trennungsprinzips in Deutschland' (2015) GRUR, 929-935.
[646] As explained above at Section B. II. 2.3., pursuant to Art. 33(3), in the case in which such counterclaim for revocation is brought before the infringement division, the judges can choose between three options: (a) proceed with both the action for infringement and with the counterclaim for revocation, by adding to the panel a technically qualified judge (b) transfer the counterclaim for revocation, but not transfer the infringement action, and within this

CMS vary considerably. Indeed, bifurcation characterises the situation in Germany with exclusive competence of the German Federal Patent Court (*Bundespatentgericht*, BPatG) for invalidity actions, on the one hand, and the infringement courts, on the other hand.[647] Similarly, a bifurcated system exists in Austria. Instead, other CMS do not follow the bifurcation model.

Legal history informs on the *ratio* of the choice to implement such a system in Germany. It seems evident that behind the decision to establish a specialised '*Bundespatentgericht*' with competence over invalidity actions, there was no clear and blatant intention to favour patent owners in comparison to third parties. The major reason seems instead to relate more to the belief that non-technical judges, only possessing legal expertise, would not be sufficiently capable of making sound decisions on the validity of a patent.[648] In addition, the reasons for the German approach to accept the potentially negative implications of bifurcation are, first, the generally assumed high quality of patents granted in Germany and thus their presumed validity and, secondly, the safeguard that if there is a high likelihood that the patent is invalid, the infringement judge can stay the infringement proceedings in order to wait for the decision on invalidity.[649] Despite these reasons, the recently implemented reform of the German Patent Act also addresses the issue that patent infringement proceedings are much quicker than invalidity proceedings and that this amplifies the 'injunction gap'. The reform therefore attempts to improve the coordination between infringement and invalidity proceedings. It amends§ 83(1) PatG, which, in its original form, allowed the *Bundespatentgericht* to inform the parties as early as possible about all considerations which would be of particular importance for the decision. On the basis of such assessment, the infringement court could then have stayed infringement proceedings until a decision in the parallel invalidity proceedings had been taken. The new § 83(1) PatG entered into force only on 1 May 2022 in order to allow a grace period for the *Bundespatentgericht* to adjust accordingly. The new wording introduces a deadline of six months from the service of the complaint for the preliminary assessment and envisages that the *Bundespatentgericht* should provide this information also to other courts before which a case on the relevant patent is still pending.[650] Nevertheless, the overall efficacy of the reform has been questioned. In fact, while six months could be sufficiently quick for main proceedings, the same cannot be said as regards preliminary injunction fast-track proceedings. Moreover, if a patent is

case also decide whether to stay the infringement proceedings or opt for their continuation, (c) transfer both the infringement action and the counterclaim for revocation to the central division. Thus, only option (b) leads to bifurcation.

[647] Peter Meier-Beck, 'Bifurkation und Trennung – Überlegungen zum Übereinkommen über ein Einheitliches Patentgericht und zur Zukunft des Trennungsprinzips in Deutschland' (2015) GRUR 929.

[648] For a more detailed explanation on the historical development of bifurcation see Marco Ricolfi, 'La "biforcazione" tra azioni di validitá ed azioni di contraffazione: ragioni teoriche e problemi applicativi' in Costanza Honorati (ed.) *Luci e Ombre del Nuovo Sistema di Tutela Brevettuale* (Giappichelli Editore 2014) 179.

[649] Marco Ricolfi, 'La "biforcazione" tra azioni di validità ed azioni di contraffazione: ragioni teoriche e problemi applicativi' in Costanza Honorati (ed.) *Luci e Ombre del Nuovo Sistema di Tutela Brevettuale* (Giappichelli Editore 2014) 180.

[650] 'Zweites Gesetz zur Vereinfachung und Modernisierung des Patentrechts' of 10 August 2021, BGBl. 2021 Teil I Nr. 53, s. 3490.

less than nine months old, it is not yet possible to file invalidity proceedings before the competent court as its validity shall still be challenged before the European Patent Office.[651]

One can raise the question of whether such German *rationale* for bifurcation should also apply within the context of the UPC. In general, it has been noted that a separation of invalidity proceedings from the infringement action is not likely to occur very often within the context of the UPC.[652] This is so because it does constitute only one sub-option within three different ones.[653] Furthermore, the Rules of Procedure[654] establish certain criteria for dealing with such situation. Indeed, the UPC can only make a decision on the action for infringement if the patent is not held to be partially or wholly invalid (Rule 118.2(a) RoP). And if the patent is then found to be invalid, the proceedings before the division seised with the infringement action would be resumed (Rule 118.4), and this division of the UPC would then also decide on a compensation to be paid by the plaintiff (Rule 354.2). In particular, in relation to the decision on whether to stay or not the proceedings, the Rules of Procedure establish that the UPC must stay the infringement proceedings only if there is a high likelihood that the patent will be found to be invalid (Rule 118.2(b)). In the other cases, it only has discretion ('may') to stay proceedings (Rule 295 RoP). Certainly, a stay of proceedings may be burdensome for a start-up to the extent that it will prolong the proceedings. Yet such a stay would be a better solution than having to face the consequences of an injunction before that a decision on invalidity has been rendered. This consideration is even more relevant in the light of the considerable number of cases in which the patent is indeed found to be invalid.[655] In this regard, it is possible to note how relying on the principle of proportionality can also play a role in diminishing the number of cases in which the risk of an 'injunction gap' can occur. Indeed, if the UPC, as much as national courts, take into

[651] For further comments in this regard see Florian Müller, 'New § 83 of German Patent Act entered into force today, requiring Federal Patent Court to hand down preliminary opinions within six months: foolish and pointless 'reform'' (1 May 2022). available at http://www.fosspatents.com/2022/05/new-83-of-german-patent-act-entered.html (accessed 11 December 2022).

[652] Among others see Aloys Hüttermann, *Einheitspatent und Einheitliches Patentgericht* (Carl Heymanns Verlag, 2016) 133.

[653] See Article 33(3) option (b) and supra note 648.

[654] Rules of Procedure of the Unified Patent Court of 1 September 2022. The final RoP are available at https://www.unified-patent-court.org/sites/default/files/upc_documents/rop_en_25_july_2022_final_consolidated_published_on_website.pdf (accessed on 10 December 2022).

[655] For an overview of data concerning patent infringement litigation between 2011 and 2012 in Germany and reflections on possible developments under a unified court see Thomas Kühnen and Rolf Classen, 'Die Durchsetzung von Patenten in der EU – Standortbestimmung von Einführung des europäischen Patentgerichts' (2013) GRUR 592, 597. Furthermore, Joachim Henkel and Hans Zischka, 'Why most patents are invalid – Extent, reasons and potential remedies of patent invalidity' (May 2019) available at https://www.tim.wi.tum.de/fileadmin/w00bcy/www/Research/Publications/Henkel/Henkel_Zischka_2019-05_How_many_patents_are_truly_valid.pdf (accessed on 3.02.2020) find that in court decisions in Germany between 2010 and 2012, 45% of patents were declared to be fully invalid and 33% to be partially invalid. All the mentioned datasets are not particularly recent and they therefore call for further research. Nevertheless, they may serve as an indicator for the possibly also current invalidation rate.

account proportionality considerations, the number of cases in which injunction are granted for patents that are then found to be invalid, could potentially be limited.

2.5. Implications for Start-ups and Proposals for Reform

For a start-up in the position of defendant, being the target of an injunction can represent a significant burden and in certain cases can even lead to the end of the entire business activities. For these reasons, considerations on the proportionality of the remedy play a vital role, in particular in the context of the UPC, where the broad territorial scope of decisions exacerbates such risks. Against this backdrop and as shown by the previous analysis, the interpretation which provides the UPC with the discretion to refuse injunctive relief should be welcomed. Therefore, Article 63 UPCA must be read as making use of the option granted by Article 12 Enforcement Directive. This would allow to guarantee a fair balance of interests of the market players involved. However, as analysed above, the interpretation of Article 12 and its interaction with Articles 3 and 11 raises several issues. From a legal perspective it is correct to use Article 3 as a rule of interpretation for the following provisions, including Articles 11 and 12. The interpretation which reads Article 11 as providing discretion to courts to deny injunctions and that states that courts should rely on Article 3 to make such decision should therefore be welcomed. This is indeed supported also by the CJEU case law, in which attention has already been given to the role of proportionality in copyright enforcement for the grant of an injunction against intermediaries.[656] Therefore, the proportionality principle should play a more relevant role at the remedial level also in patent cases. As regards Article 12, it should also be noted that the provision can gain great importance for a start-up defendant. Article 12 indeed allows the business to continue its activity upon payment of a compensation for her future infringing uses. In particular, the provision is likely to find application in cases involving start-ups, considering that due to their usually limited resources they may face difficulties in conducting a proper freedom to operate analysis and may therefore find themselves in the condition of unintentional and not negligent infringement. The provision is indeed needed and therefore the policy option considered by the Commission to remove it and to only combine Article 11 with Article 3 with further specified standards for proportionality[657] should be abandoned. In any case, in light of the importance that Article 12 can have for start-ups and also for other market players, its scope of application should

[656] In Case C-314/12 *UPC Telekabel Wien* ECLI:EU:C:2014:192, para. 46 the CJEU held that any injunction must be in accordance with the principle of proportionality and the other general requirements laid down in Article 3 as the applicable fundamental rights.

[657] See Commission 'Support Study for the ex-post evaluation and ex-ante impact analysis of the IPR Enforcement Directive (IPRED). Final Report (2017) 113 available at https://op.europa.eu/de/publication-detail/-/publication/1e3b2f41-d4ba-11e7-a5b9-01aa75ed71a1 (accessed 5 September 2020) as mentioned above, supra note 549.

and needs to be broadened.[658] Moreover, considering both the heading and the text of Article 12, the award of compensation should be interpreted as an alternative to the prohibitory injunctions of Article 11 and thus apply only where the court would have otherwise granted an injunction after having already taken into account the proportionality principle. However, considering that the current wording of the Enforcement Directive leaves much room for interpretation, a clarification on the interaction between Articles 3, 11 and 12 as suggested and a further specification of the set of criteria for the proportionality assessment, is called for. To these aims it is recommended to the CJEU to read Article 3 and Article 11 according to the following interpretation:[659]

> Article 3:
> (1) Member States shall provide for the measures, procedure sand remedies necessary to ensure the enforcement of the intellectual property rights covered by this Directive. Those measures, procedures and remedies shall be fair and equitable and shall not be unnecessarily complicated or costly, or entail unreasonable time-limits or unwarranted delays.
> (2) Those measures, procedures and remedies shall also be effective, proportionate and dissuasive and shall be applied in such a manner as to avoid the creation of barriers to legitimate trade and to provide for safeguards against their abuse. *In deciding on the granting or rejection of the measure and assessing its proportionality, the competent judicial authorities shall be required to take into account the specific circumstances of the case, including, where appropriate: (a) the legitimate interests of the parties and the impact which the granting or rejection of the measures could have on the parties; (b) the public interest; and (c) the safeguard of fundamental rights*.

[658] On this position See Reto M. Hilty, 'The Role of Enforcement in Delineating the Scope of IP Rights', Max Planck Institute for Innovation and Competition Research Paper No. 15-03 (2015) available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2602221 (accessed 23 February 2020) 17.

[659] Emphasis is added where guidance on how the provision should be interpreted, is provided for. The proposed benchmark for the proportionality assessment draws from some of the criteria indicated in the Trade Secrets Directive. Relying on these criteria is not only consistent considering the proximity at which trade secret rights and intellectual property rights are often taken into account, but it also allows for a more balanced protection of both the right holder and the alleged infringer in comparison to what may occur under the criteria included in the 'eBay' test. Indeed, the 'eBay' criteria as explained above Section C. IV. 2.1., including the criteria that the injunction is deemed to be disproportionate if the infringer demonstrates that the right holder did not suffer an irreparable injury, may result in a too broad protection of the infringer.

Article 11:
Member States shall ensure that, where a judicial decision is taken finding an infringement of an intellectual property right, the judicial authorities *have the discretion to* issue against the infringer an injunction aimed at prohibiting the continuation of the infringement. *In considering a request for an injunction, courts shall take into account the principle of proportionality.'*

Once that the court has decided that the injunction is proportionate, Article 12 is applicable and the court can award compensation in lieu of injunctive relief when the conditions of Article 12 are met.

In addition, the scope of application of Article 12 should be broadened. Its conditions should be rendered alternative rather than cumulative. Therefore, the wording should be interpreted as follows:[660]

Article 12:
Member States may provide that, in appropriate cases and at the request of the person liable to be subject to the measures provided for in this section, the competent judicial authorities may order pecuniary compensation to be paid to the injured party instead of applying the measures provided for in this section if that person acted unintentionally and without negligence, *or* if execution of the measures in question would cause him/her disproportionate harm *or* if pecuniary compensation to the injured party appears reasonably satisfactory.

The suggested interpretation allows to strike a proper balance of rights of the parties involved. Injunctive relief should only be granted when the remedy is deemed to be proportionate. If one

[660] Emphases added.

of the conditions of Article 12, as proposed, apply, the court can decide to grant compensation instead of injunctive relief for future infringing uses. If instead injunctive relief is deemed disproportionate, the court can award damages to the extent that the conditions of Article 13 apply. Disproportionality is a defence and therefore it should be the defendant that proves the factors that gave rise to it.

Against this backdrop, Article 63 UPCA should be read as providing discretion to the UPC to refuse injunctive relief, upon proportionality considerations, in line with the proposed interpretation of Article 3 and 11 Enforcement Directive. This would allow to guarantee a fair balance of interests of the market players concerned.

In order to enhance legal certainty and render clear the existence of discretion in the grant of injunctions and the use of the options granted by the Enforcement Directive, it is proposed to change the current wording of Rule 118(1) RoP, by keeping the wording that the Rule had in the 16th Draft of the RoPs with amendments in line with the proposed interpretation of Article 12 Enforcement Directive, as follows:[661]

> Without prejudice to the general discretion provided for in Articles 63 and 64 of the Agreement, in appropriate cases and at the request of the party liable to the orders and measures provided for in paragraph 1 the Court may order damages or compensation to be paid to the injured party instead of applying the orders and measures if that person acted unintentionally and without negligence, *or* if execution of the orders and measures in question would cause such party disproportionate harm *or* if damages or compensation to the injured party appear to the Court to be reasonably satisfactory.

Including this wording in the RoPs would not go beyond the possibilities conferred by Article 41 UPCA, since the UPCA must be read and interpreted in the light of the Enforcement Directive and the suggested amendment represents a mere transposition of the wording of Article 12 Enforcement Directive, as envisaged. Moreover, rendering the suggested option explicit by including it in the RoP, enhances legal certainty and guarantees the existence of an important tool for the safeguard of the interests of the defendants, and in particular of start-ups.

In addition, it is relevant to stress that proportionality considerations before granting injunctive relief, both at national courts level and at UPC level, can help diminish the number of cases in which patents are found invalid but infringed. Nevertheless, in this regard it is important to highlight that for a start-up the negative consequences of potentially having to bear an 'injunction gap', greatly outweigh the benefits that a start-up can obtain from the speed of

[661] Emphasis added.

proceedings and decisions that a bifurcated system guarantees. In particular, the broad territorial scope of UPC decisions renders such risk even more relevant in this context. As a consequence, relying on the proportionality principle before granting an injunction can help limit the situations in which an 'injunction gap' occurs, it is recommended to avoid the existence of this risk as a whole. Therefore, it is recommended to delete point (b) of Article 33(3) UPCA which currently includes the option of bifurcation.

2.6 Decisions on Damages

The conditions and the factors that Courts have to take into account when awarding damages have implications both for start-ups in the position of plaintiffs and for start-ups in the position of defendants. On the one hand, a start-up plaintiff will benefit from and will be incentivised to enforce her patent rights in cases of infringement if the law guarantees the predictability of the amount of compensation to be awarded and if it is clear that the compensation that will be obtained is appropriate for the prejudice suffered. On the other hand, a start-up defendant will face a more difficult situation when the potential amount of damages is very high and when the law provides for limited possibilities of defence.

In order to assess the implications that the introduction of UPC provisions on damages can have on start-ups, the present Section will first briefly present Article 13 Enforcement Directive and then proceed with a comparative analysis on how damages are awarded and calculated before selected national courts and the UPC.

2.6.1 Article 13 Enforcement Directive and the Principle of Full Compensation

Pursuant to Article 13(1) of the Enforcement Directive Member States must enable the competent judicial authorities 'to order the infringer who knowingly or with reasonable grounds to know, engaged in an infringing activity, to pay the right holder damages appropriate to the actual prejudice suffered by him/her as a result of the infringement'. The damages should therefore be appropriate to the actual prejudice suffered. The aim is indeed to compensate in full the prejudice suffered as a result of the infringement.[662] The judicial authorities have two ways to determine the amount of damages: first, by taking into account all appropriate aspects, such as the negative consequences, including lost profits that the injured party has suffered, any unfair profits made by the infringement and in appropriate cases also elements other than economic factors, such as the moral prejudice caused to the right holder by the infringement (Article 13(1)(a)). As an alternative, judicial authorities can in appropriate cases, set a lump sum on the basis of elements such as the amount of royalties or fees which would have been due if the infringer had requested the authorisation to use the IP right (Article 13(1)(b)). Instead, pursuant to Article 13(2) Enforcement Directive, in the cases in which the infringer acted not knowingly or without reasonable grounds to know, Member States can enable judicial authorities

[662] See Case C-99/15 *Liffers* ECLI:EU:C:2016:173, para. 25.

to order the recovery of profits or the payment of damages that may be pre-established (Article 13(2)).[663]

As regards Article 13(1), the Commission has stressed that Member States have to ensure that both methods for setting damages are present in the respective national legislation. Indeed, differently from Article 13(2), the two methods provided for in Article 13(1) are mandatory and are not merely two options for the Member States. It is then the applicant and eventually the competent judicial authority that then can decide which of the two alternative methods can be applied to the specific case.[664] In addition, the Commission has also clarified that even if Article 13(1)(b) Enforcement Directive does not mention explicitly the possibility of compensation of moral damages when using the lump sum method, a right holder can be awarded not only compensation for material damage, but also for moral prejudice, even when using such method.[665] This is in line with the indications provided by the CJEU.[666] In addition, in the context of the evaluation of the Enforcement Directive, it has been reported that awarding damages corresponding to only the amount of a hypothetical royalty is not sufficient to compensate all the actual prejudice suffered.[667] In a recent case concerning copyright infringement,[668] the CJEU held that a holder of economic rights of copyright may require the infringer to compensate for the loss caused by paying twice the amount of a hypothetical fee, in cases in which the applicable national law provides for such possibility. The CJEU indeed stated that the payment of a single hypothetical fee would not be sufficient to guarantee the compensation in respect to all the loss actually suffered, including for example also any costs related to searching and identifying possible acts of infringement or payment of interest on the sum due.[669] In light of this case law, the Commission has therefore suggested that the damages established with the lump sum method can be set as a higher amount than only the amount of a single hypothetical fee and that the judicial authorities can have some discretion when setting the damages through the application of this method.[670]

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[663] A more detailed analysis on how the conditions of application of Article 13 and the specific methods of calculation have been implemented by Member States and have been interpreted by national courts, is provided in Section C. IV. 2.6.3. a) below. The analysis of their implementation and interpretation in the context of the UPCA will follow.

[664] Commission, 'Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and the Council on the enforcement of IPRs', COM(2017) final, 4 available at https://ec.europa.eu/docsroom/documents/26582 (accessed 15 September 2020).

[665] Ibid. 4, 5.

[666] Case C-99/15 *Liffers* ECLI:EU:C:2016:173, paras 15-27. The CJEU held that it is required to take also the moral prejudice into account when setting the lump sum. This allows to achieve the objective of providing for full compensation of the prejudice suffered.

[667] Commission Staff Working Document, 'Evaluation of Directive 2004/48/EC', SWD(2017) 431 final, Annex III.

[668] Case C-367/15 *OTK* ECLI:EU:C:2017:36.

[669] Case C-367/15 *OTK* ECLI:EU:C:2017:36, para. 30.

[670] Commission, 'Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and the Council on the enforcement of IPRs' COM(2017) final, 5 available at https://ec.europa.eu/docsroom/documents/26582 (accessed 15 September 2020).

2.6.2 Award of Damages and Methods of Calculation Before National Courts

A comprehensive assessment of the implications that UPC damages decisions may have on market players in comparison to the current situation, requires to analyse how damages are currently assessed within selected jurisdictions.

a) United Kingdom

Under UK law, a claimant may choose between two alternative roads for being compensated in case of a patent infringement, namely, through a request for damages or an account of profits. In both cases, further proceedings and an additional hearing will take place. The two remedies are different. Damages aim at restoring the claimant in the position she would have been if no infringement had occurred. In the event of an account for profits, the defendant has to return the profits she has made by the infringement and account for that profits to the claimant. In addition, if there is proof of damages, they can be claimed as a remedy at law, while the account for profits is an equitable and, thus, discretionary remedy.[671] In the past, the claimant had to make her choice without knowing about the intensity of infringement by the defendant and would thus have tended to opt for damages. By now, however, the courts allow the claimant to postpone this choice until when the defendant has actually disclosed the facts on the infringing activity.[672] Damages cannot only include lost sales but also losses caused by being forced to lower prices to maintain the market position, which was threatened by the infringement. Moreover, the basis for calculation varies depending on the circumstances. For example, if the claimant has licensed the patent or if licensing is a common activity in the business sector, it will be very likely that the royalty base is used as method of calculation. Otherwise, other methods would be used. Furthermore, in this regard, it is also relevant to stress that the Supreme Court has stated that a claimant may not further proceed with the claim for damages if, after a favourable judgment, the patent is revoked or amended by an EPO decision in a form which excludes infringement.[673]

b) Germany

In Germany, in a manner which is to a certain extent similar to the English practice, the plaintiff does not have to specify the amount of damages requested when bringing the action. Rather, the plaintiff is allowed to request the defendant first to render account of past sales, profits, offers and deliveries in connection to the request for injunctive relief and declaration of the

[671] Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 104.
[672] *Island Records Limited v Tring International Limited and Another,* 12 April 1995 [1995] EWHC 8 (Ch).
[673] *Virgin Atlantic Airways Limited v Zodiac Seats UK Limited,* 3 July 2013 [2013] UKSC 46. As cited in Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 105.

defendant's obligation to pay damages. Once the defendant presents the detailed accounts, the claimant can claim a specific amount of damages.[674] Under German practice, in order to be awarded damages, it is required that the infringer has acted with fault, thus intentionally or with negligence, but this is anyways presumed to be the case after one month from the publication of the grant of the patent.[675]

Under German law the claimant can choose between three main methods of calculation, namely, the licence-royalty method, infringer's profits and lost profits, whereby it is possible to change the method until the final hearing of the court.[676] In particular, German law excludes punitive damages.

As regards the licence-royalty method, a licence fee will be deemed reasonable if it corresponds to the one that reasonable parties would have agreed if they had known how the market would have had developed and to what extent the invention would have been used.[677] In the case that the parties disagree on the amount of damage, the Court can also estimate damages pursuant to § 287(1) German Code of Civil Procedure. In this case, the point of departure is the licence fee usually paid for a non-exclusive licence, which can then be increased at the Court's discretion, depending on the circumstances of the case.

§ 139(2) of the German Patent Act explicitly mentions the calculation of damages in relation to the infringer's profits. That is based on the fiction that the claimant's lost profits correspond to the amount of profits made by the infringer through the use of the patented invention. The claimant has to prove that she has suffered harm. For calculating the profits, the infringer's costs directly related to the infringing product will be deducted from the turnover.[678] Moreover, if the claimant opts for damages deriving from a loss of sales caused by the infringement, she has to prove the causality and disclose its calculation of profits. If the patent at hand is subject to an exclusive licence, the patent holder also has a claim for damages if she participates in the profits of the licensee, and she has a right to claim that the licensee is put in the same position she would have been if no infringement had occurred.[679] Both patentee and licensee can choose between the three different methods of calculation, and if they claim them separately, they will have to demonstrate the portion which is to be allocated to them individually, considering that the infringer has to compensate for the entire harm.[680] In addition § 139(2) of the German Patent

[674] Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 111, 133.
[675] Federal Court of Justice (BGH), 26 January 1993, Case X ZR 79/90 (1993) GRUR 460, 464 – Wandabstreifer.
[676] Federal Court of Justice (BGH), 24 November 1981, Case X ZR 7/80 (1982) GRUR 301, 302 – Kunstoffhohlprofil II.
[677] Federal Court of Justice (BGH), 13 March 1962, Case ZR 108/60 (1962) GRUR 401, 404 – Kreuzbodenventilsäcke III.
[678] Federal Court of Justice (BGH), 2 November 2000, Case ZR 246/98 (2001) GRUR 329, 330 et seq – Gemeinkostenanteil.
[679] Federal Court of Justice (BGH), 5 April 2011, Case X ZR 86/10 (2011) GRUR 711, 713 – Cinch-Stecker.
[680] Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 111, 134.

Act provides that, as an alternative, damages can also be set as a lump sum, calculated on the basis of the amount which the infringer would have been required to pay as equitable remuneration if he had obtained permission to use the invention.

Furthermore, under German law, in parallel to the claims pursuant to the German Patent Act, the general private law rules also apply. In particular, the claimant may therefore also rely on a claim for unjust enrichment (§ 812(1) Civil Code). Since the benefits cannot be returned back in nature, under the law of unjust enrichment, the practice has therefore been to order compensation corresponding to an appropriate licence fee pursuant to § 812(2) BGB.[681]

c) France

In France, the damage claims also aim at compensating the harm which has been suffered, without any punitive purpose. Prior to the introduction of the rules in Article L. 615-7 *Code de la propriété intellectuelle* (CPI) in 2009, as modified in 2014,[682] the rules of calculation were established by case law.

The new provisions now clearly establish that to calculate damages the court takes into account the negative economic consequences of the infringement, including the loss of earnings and any other loss suffered by the injured party, the moral prejudice; the profits of the infringer, including in particular also savings in intellectual, material and promotional investments and expenses that were saved thanks to the infringement. As an alternative, and upon request of the infringer, the court can request the payment of a lump sum calculated on the basis of the amount that would have been due if the infringer had requested authorisation to use the right (Article L. 615-7 CPI). While some decisions stated that the infringer's profits can be successfully claimed,[683] other courts decide differently.[684] Under French law it is possible to raise a claim not on the basis of the CPI but on unfair competition grounds (Article 1382 Code civil), which requires for its application the presence of fault, of a damage and of a link between the fault and the damage. Such claim is especially important in cases in which it is neither the patent owner nor the licensee, but for example a distributor of authorised products, who claims compensation for the damages caused by the infringing acts.[685]

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[681] Ibid. 135.

[682] Act No 2014-315 of 11 March 2014.

[683] *Cour d'appel de Paris*, 23 January 2013, Case RG No 10/13867, *TYC Europe v Valeo*; *Tribunal de grande instance de Paris*, 24 January 2013, Case RG No 10/14541, *Hydr Am v Gimaex and Weber Hydraulik*; as cited in Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (eds), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 170.

[684] *Tribunal de grande instance de Paris*, 11 October 2013, Case RG No 11/14587, *Saint Dizier Environment v Materiel Santé Environment and CME*; as cited in Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 170.

[685] *Tribunal de grande instance de Paris*, 9 February 2005, Case No 809-III-335, *Atral and Diagral v Cedom and Leroy Merlin; Tribunal de grande instance de Paris*, 3 March 2010, Case RG No 07/13504, *Novartis and Ciba Vision v Johnson & Johnson and Ethicon*.

From this analysis it results that all selected Member States have implemented both options provided for in Article 13(1)(a) and (b) Enforcement Directive to be used in alternative. Courts of the analysed Member States indeed must either take into account all appropriate aspects, including lost profits, unfair profits made by the infringer and other elements as moral prejudice, or set damages as a lump sum. Conversely, the analysed countries did not implement the option allowing judicial authorities to order payment of damages when the infringer did not knowingly or with reasonable grounds to know engage in infringing activity, pursuant to Article 13(2) Enforcement Directive.

3.6.3. Damages under the UPCA

Article 68 UPCA confers power to the UPC to award damages in infringement cases. This provision implements Article 45 TRIPs and Article 13(1)–(3) Enforcement Directive. Article 68 UPCA thereby adopts the wording of the provisions of the Enforcement Directive. This rule therefore substitutes the national rules which have been created for the implementation of Article 13 Enforcement Directive within the scope of application of the rules of the UPCA. And the interpretation of Article 68 UPCA has to be in compliance with Article 13 Enforcement Directive.

The damage caused by the infringement of the patent holder's exclusive right is referred to as the 'harm actually suffered as a result of the infringement' within the meaning of Article 68(1) UPCA. Pursuant to Article 47(1) and (2) UPCA, both patent proprietors and exclusives licensees can be entitled to claim damages as potentially 'injured parties' in the sense of Article 68(1) UPCA. In contrast, non-exclusive licensees do not have a separate claim to damages in substantive law.[686]

Another requirement for damage claims under Article 68(1) UPCA, along the lines of Article 13 Enforcement Directive, is that the infringer 'knowingly or with reasonable grounds to know, engaged in a patent infringement'. The knowledge or in other words, intent, may be direct, when the infringer is aware of the infringement and on purpose decides to commit it or contingent, when the infringer knows that the infringer act is likely but nevertheless decides to commit it and still take the risk of committing the infringement.[687] In this regard, it is also relevant to mention the controversial situation occurring in relation to the implementation of standardised technology in which the alleged infringer may know that the implemented technology will be covered by patent protection, but does not precisely know which and whose patents will be infringed. In this context, it has been noted that in practice it is often difficult for the alleged

[686] Indeed, non-exclusive licensees do not have a right against the patent proprietor that she will not grant a licence to the alleged infringer.
[687] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1040.

infringer to prove absence of intent.[688] The term 'reasonable' relates to the degree of care which is required and refers to the element of negligence. It refers to any kind of source of information a reasonable business operator would take into account to avoid risk of committing a patent infringement. In general, along the lines of the CMSs' practice, the knowledge of the existence of patents and of patent applications of medium-sized and large companies is required. Although the more problematic situation occurs when the alleged infringer knows the existence of the patent, but does not specifically know whether the patent will also be used when manufacturing or distributing a product. In general, it will be hard for the alleged infringer to argue the absence of reasonable grounds to know of the existence of the patent.[689] By referring to the 'harm actually suffered from the infringement', Article 68(1) UPCA refers to the subsequent economic loss caused by the infringement.

Article 68(2) UPCA follows the generally accepted principle of full compensation, while excluding punitive damages. The first sentence of Article 68(2) UPCA expresses the principle that the injured party must be placed in the position she would have been in if no infringement had occurred. Such restitution in kind (*restitutio ad integrum*) is possible in the case of damage caused to tangible objects that can be repaired. Nevertheless, it has been noted that the provision should be interpreted broadly, thereby also including and referring to alternative ways of making restitution in kind, by providing economic restoration. The aim is indeed to place the injured party, to the extent possible, in the economic position that would exist if no infringement had occurred. And methods for this economic restoration are provided by way of example in Article 68(3).[690] In general terms, the harm which has to be compensated is the infringement of the right. The compensation for damage, understood as reparation, includes the disadvantages that the injured party has suffered (compensation for lost profits), and the benefits of the infringer as addressed in Article 68(2), 2nd sentence, UPCA. In particular, the concept of benefits here suggests a broad meaning. These 'benefits' of the infringer have to be assessed in a comprehensive manner, including actual advantages such as an improvement in market image, higher revenues and lower costs.[691] No benefit should remain with the infringer and all expected present and future advantages deriving from patent infringement have to be covered by the compensation. In any case, beyond compensation, damage judgments must not seek to deter

[688] This is relevant and has been mentioned also in the context of the analysis concerning Article 12 Enforcement Directive. See above Section C. IV. 2.1. and see Commission, 'Support Study for the ex-post evaluation and ex-ante impact analysis of the IPR enforcement Directive (IPRED). Final Report (2017) 113 https://op.europa.eu/de/publication-detail/-/publication/1e3b2f41-d4ba-11e7-a5b9-01aa75ed71a1 (accessed 20 September 2020). The authors of the Study seem to favour a broad interpretation of Article 12, thereby addressing the possibility of refusing to grant an injunction in the case of complex products and award monetary compensation instead.

[689] The matter is analysed in more detail in the next par. 2.6.3 b) (abence of faults).

[690] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1043; Axel Walz, 'Schadensersatz und Einheitspatentsystem' (2016) GRUR Int. 513, 522.

[691] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1043.

the infringer from future infringements. To guarantee this, Article 68(2), 3rd sentence, UPCA excludes punitive damages as they are known in US law. Procedurally, however, Article 76(1) UPCA needs to be taken into account. Accordingly, the Court establishes damages only in accordance with the plaintiffs' submissions and shall not award more than requested. Moreover, according to Article 76(2) UPCA, the Court can only make decisions on the merits based on the grounds, facts and evidence that are presented by the parties or introduced in the proceedings by an order of the Court.

a) Methods of Calculation

For rendering a decision on damages, the Court relies on one of the two methods for the calculation of damages as provided for in Article 68(3) UPCA. The first method provided for in Article 68(3)(a) includes three different elements, namely, negative consequences, unfair profits and moral prejudice, which will be analysed hereinafter. In any case the methods constitute a non-exhaustive list and have to follow the principle – as phrased in Article 68(3)(a) – that the Court has to 'take into account all appropriate aspects'.

The three elements to consider for the calculation of damages under Article 68(3)(a) pursue the objective of guaranteeing full compensation as the underlying principle of Article 68(1) and (2) UPCA. First, the negative consequences aim at compensating for lost profits. The second element refers to the profits of the infringer, in relation to which, Article 68(2) uses the term 'benefit', which has to be understood broadly in the sense of all advantages. Accordingly, also the second aspect of Article 68(3)(a), must equally be interpreted broadly. The third element refers to the moral prejudice caused to the injured party by the infringement. In applying Article 68(3)(a), due to the principle of full compensation, the Court must consider all three aspects.[692] In this regard, it is evident that the three elements for calculating lost profits and infringement profits are logically connected and linked to each other.[693] Thus, when it comes to one and the same market opportunity, the patent holder's loss of profits and the infringer's profits, may not be added, because such calculation would quickly result in over-compensation. That is the reason why the interpretation of Article 68(3)(a) UPCA should follow the direction that only one of the two options can be applied, namely, the one leading to the highest compensation.[694] Thus, the two methods of calculation need to be compared with each other. As a consequence, if the infringer's profits exceed the lost profits, the former would be the decisive one. Conversely, the latter would be relied upon, if the lost profits exceed the infringer's profits.[695] Yet, of course, this logical link exists only in relation to the very same market opportunity. However, in many cases it is

[692] In this sense, Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1044.
[693] Klaus Grabinski and Carsten Zülch in Georg Benkard (ed.), *Patentgesetz: PatG* (11th edn, C.H.Beck 2015), PatG § 139 para. 61.
[694] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1047.
[695] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018), 1046.

impossible to establish whether the market opportunity exploited by the infringer could have been used in the same manner by the injured party.

As regards the second element, namely, the calculation of infringer's profits, the term 'profits' in the context of Article 68(3)(a) UPCA should be understood in a non-technical business meaning and should take into account all the 'benefit' of the infringer, including cost savings, higher revenues, profits generated by the infringer or any affiliates, as similarly indicated above in relation to Article 68(2).[696]

In comparison, the first element concerning the calculation of lost profits is more complex, because it is *per se* based on a hypothetical situation and not a real one and their calculation often amounts to an estimate. This obviously increases the level of uncertainty.[697] As with infringer´s profits, in order to determine the amount of loss of profits, it is also necessary to demonstrate a causal link between the infringement and the loss in profits.[698] In this regard, difficulties arise quite often as regards the share of the patent use within the resulting profits, such as in the case of complex products that implement multiple technologies.

Moreover, in addition to the negative economic consequences which the injured party has suffered and any unfair profits made by the infringer, Article 68(3)(a) allows the UPC to take into account also other elements, such as moral prejudice, as explicitly mentioned. This factor is however more rarely taken into consideration in the context of patent law in which it can be relevant only in cases of infringement of the moral right of the inventor to be named. The reference to moral prejudice is indeed taken from Article 13 Enforcement Directive, which also applies to copyright law where moral rights play a much more important role.

Under Article 68(3)(b), the UPCA provides for an alternative method of calculation in form of a lump sum based in particular on a licensing fee that could have been agreed upon by the patent proprietor and the infringer in a hypothetical licence agreement. Hence, it is important to clarify that this calculation does not lead to the grant of an actual licence. The injured party, even if requesting such calculation, is not making an offer to the infringer with the aim to conclude a licensing agreement, and the payment of the licencing fee does not retroactively make the infringement legal.[699] Instead, the consequence of such payment corresponding to a 'licensing fee' is only to compensate for the harm of the injured party. The licensing fee is meant as a compensation for damage and thus, it has also to be determined on the basis of the knowledge of the harm at the time of the calculation of the estimate. The calculation of such hypothetical licensing fee is a type of damage calculation and, thus, it has to respect the principles of Article

[696] Ibid.
[697] This uncertainty can be overcome in ideal scenarios, for example in cases in which there is a duopoly between two competitors, where one infringes the main patent of the other and the revenue of the injured party decreases exactly by the same amount by which the revenue of the infringer increases.
[698] Federal Supreme Court (BGH), Case X ZR 51/11 (2012) GRUR 1226, 1227 para 7 – *Flaschenträger.*
[699] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1050.

68(1) and (2) UPCA. Therefore, the injured party has to be placed in the position it would have been if there were no infringement and, moreover, the hypothetical fee has to compensate for all the suffered market disadvantages. The factors that will influence the calculation and would favour an increase of the fee are the wide scope of the patent and the lack of possible alternative solutions. Instead, the existence of substitutable patents or technologies would rather argue in favour of a lower hypothetical fee. In any case, when it comes to products composed by several parts, only the contribution of the patented technology to the value of the product would be relevant and decisive for the calculation.[700] Thus, that fees are calculated as a percentage of the end price of such product. In addition, as stressed above with regard to the interpretation of Article 13(1)(b) Enforcement Directive,[701] it can be noted that the licensing fee approach may not necessarily be sufficient to cover all possible relevant elements, such as also moral prejudice. In order to address such shortcomings, the Commission recommended, in line with the CJEU case law concerning copyright matters, to interpret Article 13(1)(b) as not precluding national legislation implementing the provision to allow a right holder to claim the payment of an amount equal to twice the hypothetical fee.[702] Other factors and appropriate aspects such as increased efforts and expenses to monitor the market and identify potential acts of infringement, are already taken into account in the German practice concerning infringements of copyright law, by doubling licensing fees. [703] Part of the legal doctrine claims that such practice should be extended to also other intellectual property law areas.[704] The words 'at least' in Article 68(3)(b) UPCA underline that other appropriate aspects, such as moral prejudice, are relevant and will have to be taken into consideration by the UPC when using the lump sum method. This is in line with the interpretation of Article 13(1)(b) as suggested by the Commission.[705] Only the concrete practice of the UPC will tell whether the Court will adopt such doubling of the hypothetical fee. What is certain, however, is that the right holder will have the possibility to ask that damages set as lump sum are calculated not only on the basis of the sole amount of the hypothetical fee, but also on the basis of all appropriate aspects.

b) Award of Damages in cases of Absence of Fault

Article 68(4) UPCA goes a step further, empowering the Court to order the recovery of profits or compensation in cases of absence of fault. This provision is based on Article 45(2), 2nd sentence,

[700] Ibid. 1051.

[701] See above Section C. IV. 2.1.

[702] See Commission, 'Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and the Council on the enforcement of IPR´s' (Communication) COM (2017) final, 5 available at https://ec.europa.eu/docsroom/documents/26582 (accessed 15 September 2020).

[703] See in this regard Annette Kur, 'The Enforcement Directive - Rough Start, Happy Landing?' (2004) 34 IIC 821, 827.

[704] See, among others, Daniel Patnaik, 'Enthält das Deutsche Recht effektive Mittel zur Bekämpfung von Nachahmungen und Produktpiraterie?' (2004) GRUR 191, 198.

[705] Commission, 'Guidance on certain aspects of Directive 2004/48/EC of the European Parliament and the Council on the enforcement of IPRs', COM(2017) final, 4, 5 available at https://ec.europa.eu/docsroom/documents/26582 (accessed 15 September 2020)

TRIPS, according to which the Member States can authorise the judiciary to establish the recovery of profits and/or the payment of pre-established damages[706] also in the case in which the infringer did not knowingly or with reasonable grounds to know, start the infringing activity and on Article 13(2) Enforcement Directive pursuant to which national legislation can allow judicial authorities to order the recovery of profits or the payment of damages, which may be pre-established, also in cases of absence of fault. Pre-establishment is not available for patents within the scope of the UPCA. In cases of absence of fault, Article 68(4) UPCA provides for recovery of profits or compensation. In particular, the latter is meant to be a payment of an amount of damages that has been reduced by applying aspects of equity, after considering all the circumstances that the UPC has discretion to take into account.[707] Moreover, legal scholarship[708] has noted that Article 68(4) may not be applied in certain cases, such as under the circumstances provided for in Article 4(4) EPUET Reg.[709] Pursuant to Article 4(1) EPUET Reg. the patent proprietor, in the event of a dispute concerning the infringement of a EPUE, shall provide at the request of the alleged infringer, a full translation of the EPUE into an official language of either the participating Member State in which the alleged infringement took place or the Member State in which the alleged infringer is domiciled. In this context, Article 4(4) EPUET Reg. clarifies that, in the event of a dispute concerning a claim for damages, the UPC must assess and take into account whether the alleged infringer, in particular if it is an SME, a natural person, a non-profit organisation, a university or a public research organisation, acted without knowing or without reasonable ground for knowing that it was infringing the EPUE, before having been provided with the translation pursuant to Article 4(1) EPUET Regulation. It has been stressed that the rules of Article 68(4) UPCA may not be applied in such a case and that the UPC is provided with broad discretion to decide whether to require such a defendant to pay damages and if yes, at which amount.[710] However, Article 4(4) EPUET Reg. can instead be interpreted also as merely requiring the UPC to assess whether the mentioned entities were infringing with or without fault, in order to assess whether a translation has to be provided or not. In any case, the reasons why the potential absence of fault pursuant to Article 4(4) EPUET Reg. would result in a non-application of Article 68(4) UPCA are not clear. Therefore, Article 4(4) EPUET Reg. may well not concern the manner and cases in which Article 68(4) can be applied. Therefore, these categories of defendants, even when infringing in good faith and without fault, may also have to pay recovery of profits and compensation.

[706] Pre-established damages are damages that are defined by the statute and which are common in Anglo-Saxon jurisdictions. See in this regard Sascha Vander and Christian Steigüber in Jan Busche, Peter-Tobias Stoll et al. (eds), *TRIPs* (2nd edn, Carl Heymanns Verlag 2013), TRIPs Art 45 para 11.

[707] See in this regard, Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1054.

[708] Ibid. 1053.

[709] Council Regulation (EU) No 1260/2012 of 17 December 2012 implementing enhanced cooperation in the area of the creation of unitary patent protection with regard to the applicable translation arrangements.

[710] Winfried Tilmann and Clemens Plassmann, *Unified Patent Protection in Europe. A Commentary* (OUP 2018) 1054

3.6.4. Implications for Start-ups and Proposals for Reform

The way in which a court decides whether and to what extent to award damages, depending on the methods of calculation used and on the factors to be taken into account, can have either more positive or more negative implications for the market players, depending on their role in court proceedings. The predictability of the amount that will be awarded in cases of infringement and the guarantee that it will be appropriate for the prejudice suffered will be of help for a start-up plaintiff who needs to enforce her rights. Instead, a high amount of damages and limited availability of opportunities of defence will represent a risk and a disadvantage for a start-up defendant. From the above analysis it results that Article 68(1) and (3) UPCA have implemented Article 13(1)(a) and (b) Enforcement Directive. Indeed, as the analysed national legislation of the selected countries also the UPCA provides the UPC with both the two alternative options to calculate damages (Article 68(3)(a) and (b)). As regards the lump sum method, it has been noted that the wording 'at least' included in Article 68(3)(b) suggests that the amount of damages will not be limited only to the sum of one hypothetical royalty fee. It is not possible to state that the UPC will in any case award double the amount of the hypothetical royalty. Nevertheless, the UPC will have to set such lump sum by taking into account all other appropriate aspects. This is important for a start-up plaintiff who can hence obtain compensation also for other aspects, such as moral prejudice or the efforts that the business, potentially already financially constrained, had to bear in order to monitor and tackle the infringement. In this regard, the wording of the UPCA is more explicit and clearer than national legislation. This will more likely ensure the prejudice suffered to be fully compensated and in an appropriate manner.

In contrast to national legislation and the practice of the selected countries, the UPCA makes use of the option provided for in Article 13(2) Enforcement Directive and thus allows the UPC to order recovery of profits or compensation also in cases of absence of fault. This provision is detrimental for start-ups, to the extent that it diminishes the opportunities that these businesses can have to defend themselves against a damage claim. Indeed, due to their potentially limited financial resources, which render the execution of a comprehensive freedom to operate analysis more difficult and rarer, these market players are more likely than other more established ones to fall within the cases of infringement occurred in absence of fault. Therefore, they may well face the risk of having to pay damages and compensation also when the infringement occurred in good faith. And this in the context of the UPC where the type of the infringed patent and the broader territorial scope of jurisdiction of the decision contribute to increasing the severity of the consequences of damage claims.

In light of the above, the following is recommended. First, to interpret Article 68(3)(b) UPCA according to its literal wording, suggesting taking into account all appropriate aspects, such as moral prejudice, for the calculation of the lump sum. Second, to delete Article 68(4) UPCA.

V. Conclusion

The analysis within this Section has served to demonstrate the implications that the multi-territorial reach of UPC decisions can have for start-ups. On one hand, it represents an advantage for a start-up business, who can save resources not having to enforce its rights or defend itself in multiple proceedings before different national courts. On the other hand, however, it is evident that regardless of whether a party is in the position of a plaintiff or a defendant, the negative consequences that may derive from a negative outcome are more severe than what could occur under the current system, due to the broader territorial reach of UPC decisions. These consequences have a considerably more significant impact on a start-up with limited resources.

This shows the lack of balance of the UPC system, which in general favours bigger and more established businesses that can more easily afford accepting the risk and consequences deriving from an unfavourable judgment. This imbalance can be mitigated through the implementation of the recommended legal reforms and suggested interpretation of the law. This can indeed already help for the purpose of limiting the availability of permanent injunctions under the proportionality test and for the purpose of both ensuring the award of damages to be appropriate and providing further possibilities of defence against damage claims, as in the cases of absence of fault.

D. Costs of Litigation

Another important feature of the system to be taken into consideration when analysing its implications for start-ups, are the costs of patenting and litigation on the EPC and UPC level. These costs will be compared with those in the three national patent systems of Germany, France and United Kingdom. In particular, the costs of patent prosecution are a relevant factor to be taken in consideration by start-ups patentees.

I. Costs for Patent Prosecution and Grant

For start-ups patentees, costs are a main decisive factor for choosing where and with which type of patent protect their invention. If at the stage of prosecution no particular difference in costs in comparison to a European Patent would exist, since the procedure to be followed is identical both before the national patent offices and the EPO, the unitary patent option, to a certain extent, could even turn out cheaper at the stage of the patent grant. Indeed, there is no unitary patent designation fee, and the only additional translation cost is to put the specification in another language, and this is comparable with the costs of designation and translation as required by the different Contracting Member States. Hence, if very broad geographical

protection is sought, the cost savings at this stage will be substantial. However, despite the fact that some start-ups may seek broader coverage of protection to expand at international level and therefore unitary protection would provide clear benefits, it has been shown further above[711] that the majority of early-stage patentees only designate two or three Member States, and it is unlikely that this trend will considerably change within the first years of the entry into force of the system. Thus, for this category of start-ups, the potential cost savings would be minimal if not non-existent. Furthermore, if at the stage of the patent grant the cost issue may not imply too much of a difference, the more critical cost issue will relate to the maintenance of the patent and, hence, to the renewal fees. The amount of renewal fees in € for (1) national patents in the three selected national countries (Germany, France, UK) taken together, (2) the European Patent validated in those three countries and (3) the European Patents with unitary effect (EPuE) compare as follows:[712] In particular, the UK is still taken into consideration in this context, as the comparison concerns also the maintenance of European Patents, for which the UK can still be designated.

Year	**TOP 3 (national)**	**TOP 3 (EPO)**	**Unitary Patent**
2	35	0	35
3	106	465	105
4	106	510	145
5	216	810	315
6	322	1040	475
7	422	1155	630
8	545	1265	815
9	660	1380	990
10	790	1560	1175
11	975	1560	1460
12	1190	1560	1775
13	1425	1560	2105

[711] See Chapter I, Section B. II.
[712] The table draws from the data collected in Aloys Hüttermann, *Einheitspatent und Einheitliches Patentgericht* (Carl Heymanns Verlag, 2016) 52.

14	1680	1560	2455
15	1960	1560	2830
16	2270	1560	3240
17	2575	1560	3640
18	2890	1560	4055
19	3200	1560	4455
20	3500	1560	4855

Therefore, in relation to renewal fees, the national filing will in any case be less expensive. The Unitary Patent Protection option, which of course provides protection in many more countries than only Germany and France, instead will become more expensive than regular European patents validated in only two or three main countries, starting from the twelfth year of existence of the patent. Although the data show that regular European patents are more expensive, it is however important to take into account a third factor when deciding which patent to opt for, namely, the flexibility that the existing European patent system offers. Indeed, almost all patentees review their portfolio of patents every year to decide whether whole families or individual designations are still required, and the ones that are not required are allowed to lapse. Therefore, often only few designations would remain, even if there was a wide initial designation, and this will considerably help to save renewal fees on regular European patents.

Despite the fact that many start-ups would be more likely to opt for national filings, it is relevant to examine what the costs would likely to be when they get involved in litigation.

II. Costs of Litigation before the UPC

This assessment of litigation costs is important both in the case in which start-ups as potential plaintiffs decide to enforce their patents and when they act as potential defendants, because also in the latter case they need to pay representation costs to defend themselves and they may also have to face an obligation to pay recoverable costs, when being the losing party.

1. Assessment of the Value of the Claim

The assessment of court fees for UPC proceedings is based on the value of the case. This value will provisionally be estimated by the plaintiff when filing an action and will then be definitively established by the Court at the conclusion of the case. This approach follows the German tradition.

The Administrative Committee set up under the UPCA (Articles 11 and 12) has provided Guidelines on the methods to use for assessing the case value, by setting some common principles and more detailed indications depending on the specific types of actions.[713] The document stresses that the method should be as simple as possible and that the most practicable one would be a valuation based on a licence fee. In contrast, a valuation based on the claimant's loss of profits or defendant's profits may be too difficult to be assessed at the beginning of the proceedings.[714] If these Guidelines may well be of help, a more precise definition and more certainty could however only be reached once that the system becomes operational.

2. Court Fees

According to Article 36(3) UPCA, the Court fees amount of a combination of fixed fee and value-based fee. The Court fees would depend on both the nature of the dispute and the value of the action. In particular, for infringement actions (Rule 15 RoP), a counterclaim for infringement (Rule 53 RoP), an action for declaration of non-infringement (Rule 70 RoP) and an action for compensation for license of right (Rule 80(3) RoP) the envisaged UPC Court fees are as follows:[715]

Value of Action	**Court Fee**
Up to and including 500.000 €	11.000 €
Up to and including 750.000 €	13.500 €
Up to and including 1.000.000 €	15.000 €
Up to and including 1.500.000 €	19.000 €
Up to and including 2.000.000 €	24.000 €
Up to and including 3.000.000 €	31.000 €

[713] See Administrative Committee, Draft Guidelines for the determination of Court fees and the ceiling of recoverable costs of the successful party, 26 February 2016, available at https://www.unified-patent-court.org/news/guidelines-determination-court-fees-and-ceiling-recoverable-costs (accessed 20 May 2020).

[714] Ibid.

[715] All details concerning the draft Table of Fees adopted by the Administrative Committee pursuant to Art 36(3) UPCA are available at https://www.unified-patent-court.org/sites/default/files/agreed_and_final_r370_subject_to_legal_scrubbing_to_secretariat.pdf (accessed 27.05.2020). The draft Table of Fees as proposed by the Administrative Committee of the UPC, distinguishes between fixed fee and value-based fee. Merely for the matter of simplicity, the Court fees are presented here as a single fee, which represents the sum of the two and as they have also been merged in Aloys Hüttermann, *Einheitspatent und Einheitliches Patentgericht* (Carl Heymanns Verlag 2016) 97.

Up to and including 4.000.000 €	37.000 €
Up to and including 5.000.000 €	43.000 €
Up to and including 6.000.000 €	50.000 €
Up to and including 7.000.000 €	59.000 €
Up to and including 8.000.000 €	63.000 €
Up to and including 9.000.000 €	69.000 €
Up to and including 10.000.000 €	76.000 €
Up to and including 15.000.000 €	86.000 €
Up to and including 20.000.000 €	111.000 €
Up to and including 25.000.000 €	136.000 €
Up to and including 30.000.000 €	161.000 €
Up to and including 50.000.000 €	261.000 €
more than 50.000.000 €	336.000 €

When it comes instead to amounts for the determination of damages (Rule 132 RoP), the amounts are 8.000 € cheaper.

3. Recoverable Costs

The overall costs of an action are obviously not limited to court fees. To the contrary, the costs of representation, together with other additional costs, such as regarding translations or witnesses' hearings will typically be much higher. Article 69 UPCA also foresees the possibility for the winning party to request reimbursement of 'legal and proportional legal costs'.[716] The Administrative Committee has already set ceilings for such recoverable costs, which are the same

[716] Article 69 UPCA.

for First Instance and Appeal level.[717] In practice it will then be the Court that concretely indicates the amount which could be recovered. The envisaged ceilings are the followings:

Value of the proceeding	**Ceiling for recoverable costs**
Up to and including 250.000 €	Up to 38.000 €
Up to and including 500.000 €	Up to 56.000 €
Up to and including 1.000.000 €	Up to 112.000 €
Up to and including 2.000.000 €	Up to 200.000 €
Up to and including 4.000.000 €	Up to 400.000 €
Up to and including 8.000.000 €	Up to 600.000 €
Up to and including 16.000.000 €	Up to 800.000 €
Up to and including 30.000.000 €	Up to 1.200.000 €
Up to and including 50.000.000 €	Up to 1.500.000 €
More than 50.000.000 €	Up to 2.000.000 €

For particularly complex proceedings, the ceilings for recoverable costs would then be partially higher.

In light of the above, the costs a party may have to cover in proceedings before the UPC can be extremely high.

III. Costs of Litigation Before National Courts

However, to gain a better understanding of the potential implications of those expenses in comparison to the current situation, it is necessary to explore which are the average costs that parties need to bear in order to litigate in the concerned jurisdictions. In some cases, it is difficult to retrieve complete and detailed information, especially in relation to representation costs, which vary considerably depending on several factors. As a consequence, an average and

[717] Accessible at https://www.unified-patent-court.org/sites/default/files/agreed_and_final_r370_subject_to_legal_scrubbing_to_secretariat.pdf (accessed 27 May 2020).

estimate of overall costs will be provided with the aim of comparing them to the expenses envisaged for proceedings before the UPC.

1. United Kingdom

In United Kingdom, which is however no longer part of the system, the rules for assessing costs and the principles behind such an assessment constitute a specific area of law characterised by considerable complexity.[718] In general, the costs of patent litigation in England are very high. It has been proven that already during the last decade, the majority of cases that ended with a judgment and for which data are available individually produced total costs between 1 million and 6 million pounds.[719] In England, an order to a party to pay the costs of the other party is merely discretionary. Nevertheless, an English court usually would order the losing party to pay the costs of the successful one. These would very likely not completely correspond to the actually incurred costs, but certainly represent a very high amount. This circumstance certainly encourages early settlements.

At first sight, therefore, the overall average costs of litigation in UK appear to be higher than the ones that could be expected before the UPC and that would have renderedthe unified court a more suited litigation ground in comparison to the domestic jurisdiction for market players of all categories including start-ups, had UK remained part of the system.

2. Germany

In Germany, when filing an action, the plaintiff must estimate the value of the case at the date of filing, on which also the other costs will depend, while the court will finally assess this value at the end of the proceedings. The value varies depending on the financial interests that are involved. In patent law, they usually correspond to the sum of the financial interests in the injunction as well as the damages that have been caused by the infringing acts. The amount may further increase by taking into account additional claims for rendering accounts to assess damages as well as for recall and destruction of infringing goods. The estimate of the value of the case is the basis for calculating court fees, minimum attorney's and patent attorney's fee and for calculating the amount of security that a plaintiff who wants to provisionally enforce the judgment has to provide. On average, for patent infringement cases in Germany, the value of a standard case would typically fall within the range of €1-5 million. As for invalidity cases before the Federal Patent Court, the value is determined by the objective value of the patent, including

[718] English practitioners usually refer to *Cook on Costs* (LexisNexis Butterworths 2014).

[719] Christian Helmers and Luke McDonagh, 'Patent Litigation in the UK', LSE Law, Society and Economy Working Paper 12/2012 (2012) 20-25 as cited in Christopher Rennie-Smith, 'Patent Enforcement in the United Kingdom' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 81, 109.The study refers to cases between 2000 and 2008 and includes the aggregate costs incurred on both sides and not only the costs which have been ordered to be paid by one party to another.

the returns that can be expected until expiration and the claims for damages as enforced in the past.[720] The minimum costs of litigation in Germany are regulated by statute both when it comes to court fees and to attorneys' and patent attorneys' fees. Differently from the United Kingdom and also the UPC, the losing party must bear all costs, including attorney's and patent attorneys' fees of the successful party, but only in correspondence to the statutory minimum fees. The cost risks for the losing party can be estimated as for the following figures.[721]

Value in Dispute (€)	**Court**	**Attorney Plaintiff**	**Patent Attorney Plaintiff**	**Attorney Defendant**	**Patent Attorney Defendant**	**Total**
1 million	16.000	12.000	12.000	12.000	12.000	64.000
5 million	59.000	42.000	42.000	42.000	42.000	227.000
10 million	113.000	79.500	79.500	79.500	79.500	431.000
30 million	329.000	229.000	229.000	229.000	229.000	1.245.000

Table 1: First Instance Infringement Proceedings

Value in Dispute (€)	**Court**	**Attorney Plaintiff**	**Patent Attorney Plaintiff**	**Attorney Defendant**	**Patent Attorney Defendant**	**Total**
1 million	24.000	12.000	12.000	12.000	12.000	72.000
5 million	89.000	42.000	42.000	42.000	42.000	257.000
10 million	170.000	79.500	79.500	79.500	79.500	488.000
30 million	494.000	229.000	229.000	229.000	229.000	1.410.000

Table 2: First Instance Nullity Proceedings (Federal Patent Court Munich)[722]

3. France

As in other jurisdictions, also in France the costs of litigation vary depending on the case, namely, on its complexity, on the number of patents involved and on the participation of attorneys and patent attorneys. Indicative overall estimates for first instance proceedings are as follows:

- € 50,000 to 100,000 for easier matters;
- € 100,000 to € 250,000 for matters of average complexity;

[720] Christian Osterrieth, 'Patent Enforcement in Germany" in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 111, 142.

[721] As presented in Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 111, 142-143.

[722] Tables as presented in Christian Osterrieth, 'Patent Enforcement in Germany' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 142-143.

- € 200,000 to € 500,000 for more complex matters.

In contrast to the UPC and to Germany, there is no detailed and specific rule as for the ceilings for recoverable costs. To set ceilings indeed depends on the discretion of the court. Recoverable representation costs may represent one or two-thirds of the actual costs and the amount is set in the judgment in the merits. Also in France, the losing party shall reimburse part of the attorneys' fees.[723]

4. Comparison

In light of the above, the costs of litigating in France and in Germany are lower than having to face litigation before the UPC. Conversely, litigation before the UPC appears to be cheaper when compared to the costs of litigation in United Kingdom. Of course, in all cases, the specific amount of costs depends on the detailed circumstances of the case, which may vary considerably, and it is therefore complex to provide a detailed and precise assessment on the matter. Furthermore, the comparison on costs considerations, must also take into account the potential need of having to litigate in multiple jurisdictions under the current system of national courts. This may however represent only a rare situation,[724] as a decision in one main jurisdiction is often sufficient to then settle the case for other national patents. Nevertheless, thanks to the data currently available, it is certainly possible to argue that litigating before the UPC would represent a considerable financial effort for a start-up and surely a riskier one than to what occurs in the current system of national courts.

IV. Reduction of Fees for Small and Micro-enterprises and Legal Aid

However, the Administrative Committee has attempted to mitigate the risks of financial distress and limited access to justice for financially constrained businesses. It has therefore foreseen some tailored rules and legal instruments that present certain advantages but also potential concerns.

Rule 370 RoP provides an overview of all applicable Rules concerning court fees. Considering the high amount of expenses connected to the litigation before the UPC, proposed Rule 370.8 RoP[725] reduces the regular court fees for small and micro-enterprises by 60% of the upon fulfillment of

[723] Isabelle Romet, Amandine Métier et al., 'Patent Enforcement in France' in Christopher Heath (ed.), *Patent Enforcement Worldwide* (Hart Publishing 2015) 145, 174.
[724] As stressed above in Chapter I, Section C. III.
[725] See Draft Proposal of the Administrative Committee of 25 February 2016 available at https://www.unified-patent-court.org/sites/default/files/agreed_and_final_r370_subject_to_legal_scrubbing_to_secretariat.pdf (accessed 27 May 2020).

certain criteria. The applicant, who shall lodge a notification with the Registry in the language of proceedings, must be a 'small enterprise' or a 'micro-enterprise' as defined in Title I of Annex of the Recommendation of the European Commission n° 2003/361 of 6 May 2003.[726] The Court then, on its own motion, may order the applicant to provide any further document, which could be linked to its financial resources. For the purposes of the present research, it is important in this regard to note that even if the category of start-ups is not explicitly referred to in the wording of the law, these market players will certainly fall within the parameters indicated in the Commission Recommendation.

In addition, also in the case in which the amount of payable Court fees threatens the economic existence of an enterprise, and the party has presented reasonable and plausible evidence to support this circumstance, the Court may upon request by that party, wholly or partially reimburse the fixed and value-based fee.[727] The request shall be dealt with by the Court, which will reflect on all circumstances of the case including the procedural behaviour of the party. The other party may have an opportunity to be heard, before such a decision is made. This provision could certainly represent a favourable and most welcomed safeguard that would help to avoid the complete disappearance of the business due to unaffordable litigation expenses. However, the provision itself appears to be also quite problematic to the extent that it does not clarify how it would be possible to concretely prove the circumstance that the economic existence would then be threatened. A more precise indication of the concrete documents required in this respect, together with guidelines concerning the methods of evaluation that the Court may be likely to use in this event would be helpful to overcome the legal uncertainty surrounding this provision. This would better ensure that the provision be effectively used in practice and work as a potentially available safeguard in the cases in which it is needed.

In addition, in order to ensure a proper access to justice, Rules 375-385 RoP[728] provide a party with the possibility to apply for legal aid. It will help to cover the costs of court fees, costs of legal assistance and representation and other necessary costs related to the proceedings. Legal aid is granted only if certain conditions are fulfilled. The applicant has to be a natural person, citizen of the European Union or a third country national residing lawfully in a Member State of the

[726] Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, (OJ L 124/36, 20.5.2003) Art. 2:

> Staff headcount and financial ceilings determining enterprise categories.
>
> 1. The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.
>
> 2. Within the SME category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million.
>
> 3. Within the SME category, a microenterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

[727] See Rule 370.10 RoP of 1 September 2022.

[728] Rules of Procedure ('Rules') of the Unified Patent Court of 1 September 2022.

European Union. And the legal aid is granted only if, by taking into account the applicant's economic situation, the applicant would be wholly or partly unable to meet the representation costs and only in the case in which the action related to the legal aid request has reasonable chances of success and only if the applicant is entitled to bring actions pursuant to Article 47 UPCA.[729] Although the possibility to apply for legal aid has been formally and explicitly provided for, it is here however relevant to note how the envisaged provision may well be expected to have only a limited scope of application. Indeed, probably due to mere oversight, the provision limits the entitlement for filing an application to natural persons, thereby excluding the whole category of potentially interested businesses. A revision of such a rule, which would allow an inclusion of legal entities among the potential recipients of the aid, is therefore advocated.

E. The UPC Patent Mediation and Arbitration Centre as a Tool to Remedy Imbalances?

In addition to the establishment of a Unified Patent Court, Articles 35-39 UPCA foresee the setting up of a Patent Mediation and Arbitration Centre connected to the Court (hereinafter 'PMAC'). The availability of an alternative dispute resolution mechanism in form of mediation or arbitration could be particularly beneficial for start-ups both as patentees and alleged infringers. Such mediation and arbitration could indeed be a possibility to avoid some of the risks and consequences of usual litigation. However, both mediation and arbitration present some advantages but also disadvantages. To understand which implications the establishment of the PMAC within the framework of the UPC may have for start-ups, the present Section explores at first the possible advantages and disadvantages of the two alternative dispute resolution methods and, secondly, it addresses some of the criticisable elements of the PMAC system.

I. Potential General Advantages (and Disadvantages) of Mediation for Start-ups in the Patent Area

Approaching the possible advantages and disadvantages of mediation in a general overview, it is important to note as a premise that, when a dispute is discussed before court or before an arbitration panel, the litigation does not take into consideration other facets of real life beyond the strictly legal implications of the dispute, such as the relationships between the parties and with third parties, unfair competition concerns and other related rights and relationships. Indeed, the dispute often lacks such important aspects, because it is difficult and rare for a legal provision to take into account the entire scenario, but merely the circumstances considered as relevant by legislation. As a consequence, one of the main advantages of mediation is that the parties can

[729] Rule 377 RoP.

discuss and negotiate the dispute in the broadest sense, thereby including also side aspects and other issues.[730]

The first, more obvious advantage that can be noted, in particular when dealing with disputes concerning early-stage businesses, is the cost saving aspect. It is evident that in comparison to the costs involved in litigating a dispute in several instances, over many years and potentially before several courts, the costs of a court litigation are considerably higher than mediation and potentially with no greater chances to win the case. Therefore, a company, and particularly a small and new one, shall be strongly encouraged to pursue mediation either before or during litigation or arbitration.[731]

Another core factor which is extremely relevant in particular for start-ups, which often introduce new short-lifecycle services or products in the market in several fields of technology, is time. It is indeed clearly too burdensome, in particular for such type of market players, to wait for several years until the proceedings are concluded with a final judgment. As a consequence, the main issues often become primarily the financial and time considerations rather than the mere result of the dispute *per se*. Thus, litigating or arbitrating a patent right in particular, becomes often less promising due to the time spent in court in comparison to the time and efforts invested in the development of the product or service and in its market entry. Indeed, on average the time spent during an IP dispute usually amounts to 1 to 1.5 years in first instance, 1.5. to 2 years in second instance and 2 to 3 years for third instance, depending of course on the jurisdiction. Of course, there may be exceptions, but it is also true that often a dispute rarely results in a full victory of the plaintiff or defendant, and often it will anyhow be terminated by a settlement.[732] In contrast, on average, mediation proceedings in IP matters may last from one to six months during which the parties conclude a mediation agreement, find a mediator and exchange their first submissions, agree on a date for meetings, etc. until they finally reach a solution.[733]

Moreover, in contrast to what often occurs in relation to disputes before a law court, confidentiality is one of the cornerstones and main important aspects of mediation agreements. This creates a secure environment for the parties and allows them to engage in discussions and exchange relevant pieces of information with the mediator so that these can be taken into account without being disclosed and shared with any other party.

Furthermore, another aspect that must not be underestimated and that can be particularly important for start-ups looking for potential cooperation, is the safeguard and maintenance of good relationships between the parties. This is an aspect that proves to be highly valuable not

[730] Peter Müller, 'Advantages of mediation in the IP Area' in Théophile Margellos, Sophia Bonne et al. (eds.), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 54, 56.
[731] Peter Müller, 'Advantages of mediation in the IP Area' in Théophile Margellos, Sophia Bonne et al. (eds), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 54, 57.
[732] Peter Müller, 'Advantages of mediation in the IP Area' in Théophile Margellos, Sophia Bonne et al. (eds.), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 54, 58.
[733] Ibid.

only in relation to family-related matters but also in intellectual property disputes, since the latter also often involve personal and emotional aspects, given their connection with a personal creation and/or even the destiny of the entire company concerned. Thus, one of the great advantages of mediation in comparison to litigation is the ability to keep and even possibly improve the relationship between the parties.[734] In addition, another possible relevant factor, which needs to be taken into account is the fact that mediation preserves the reputation of the parties involved, thereby avoiding the threat and damage to the company image that may result from possible media attention related to the dispute.

In the field of patent law, however, the use of mediation also has some limitations. Usually patent disputes concern ownership, validity and/or infringement. In other rarer cases, they relate to inventorship, employee compensation and licensing. All these types of cases are in general more or less suited for mediation. Yet disputes between applicants and administrative bodies granting patent rights cannot be dealt with by mediation, because the granting body does not have the authority to enter into an agreement with an applicant over the grant of a patent.

Disputes relating to entitlement or ownership are particularly suitable for mediation considering that there is no public interest involved. And in addition, these can also be particularly expensive to litigate since they often require a complete disclosure of past documentation and also examination of witnesses and other means of proof. Settlements in this type of disputes may lead to assignments or partial assignments of the patent right, which may therefore result in joint or co-ownership, or also in amendments of patent specifications or deletion of individuals named as inventors.[735] Moreover, also disputes concerning infringement and declaration for non-infringement could often be solved through mediation, since they are relatively similar to disputes relating to the entitlement, to the extent that they do not involve specific public interests and do not imply very high costs. In this case, potential settlements may result in cash-payments, licensing or cross-licensing agreements and other possible undertakings as options for continuing the relationship between the parties.

More complex is instead the case of mediation in revocation or opposition disputes. This includes the case that invalidity is raised as a counterclaim in infringement proceedings. In particular, a court or patent office should refrain from suggesting mediation before or during such proceedings. Indeed, parties are not completely prevented from trying to reach a settlement through mediation, which in relation to the mere interests of the parties may still be better suited than litigation, for example, for the purpose of saving costs. However, it is evident that such an option raises public interest concerns which may not be safeguarded in mediation to the extent that a mere private, confidential settlement could result in leaving a potentially invalid patent in the register. Overall, settlements involving patent invalidity are in principle allowed and accepted

[734] Ibid. 59.
[735] Stephen Probert, 'Patents' in Théophile Margellos, Sophia Bonne et al. (eds), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 75, 76.

by the courts. In this context, it is relevant to note that recently 'pay for delay' settlements between originator companies and generic producers in the pharmaceutical sector, have been at the centre of the debate from a competition law perspective. In fact, depending on their terms and effects, the settlement can be considered anticompetitive and, thus, illegal.[736] Nevertheless, it is evident that the parties will still have the possibility to settle the case in proceedings where invalidity is an issue, but only to the extent that the settlement is not anticompetitive. Similar public interest-related considerations apply of course also in case of opposition. Moreover, in this regard, parties need also to keep in mind that opposition proceedings can also be continued by the Patent Office Division, even if the application has been withdrawn.[737] Considering this possibility, it would be interesting to explore the opportunity of implementing such an option also in the context of settlements of revocation actions. Upon approval of the court, the State, represented by the patent office, would be allowed to take over the action with the approval of the court.

From the above, it therefore results that mediation can constitute an alternative dispute resolution method that is particularly important when it comes to disputes concerning start-ups, considering that it overall results in time and financial savings and that it safeguards the relationship and image of market players. Yet, it is also true that it may well not be the most adequate method when it comes to certain types of disputes. It can however represent a viable solution under the above-mentioned circumstances, which will need to be taken into consideration depending on the specificities of the case.

II. Potential General Advantages (and Disadvantages) of Arbitration for Start-ups in the Patent Field

Beyond mediation, also arbitration as another alternative dispute resolution mechanism deserves particular attention for two main reasons: first, because it represents an alternative both to mediation and litigation. Secondly, and more importantly in this context, arbitration is one of the services offered by the Patent Mediation and Arbitration Centre (PMAC) as part of the

[736] Under a pay-for-delay agreement, generic manufacturers agree to delay the entry of new products in the market in return from payments by pharmaceutical companies. In the *Generics (UK)* case, the CJEU ruled for the first time on 'pay-for-delay' agreements, holding that such settlements may violate Articles 101 and 102 TFUE. In particular, the CJEU held that a generic will likely be considered a potential competitor of the originator, if the generic has taken any preparatory step to enter the market, stating that the existence of a settlement agreement between the two companies already indicates potential competition. Moreover, the CJEU held that if there is a reverse payment from a pharmaceutical company to a generic that does not have any other explanation than the commercial interest of both parties, the settlement will very likely have to be considered anticompetitive, even if, to some extent, it can also have some extent pro-competitive effects. See CJEU, Case C-307/18 *Generics (UK)* ECLI:EU:C:2020:52, paras 55 and 87.

[737] With regard to the European Patent Office, see Rule 84(2) of Implementing Regulations to the EPC. In more detail on these issues and for further examples see Stephen Probert, 'Patents' in Théophile Margellos, Sophia Bonne et al. (eds.), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 75, 77.

UPC system. Hence, a general understanding of the advantages and disadvantages of arbitration is also necessary to analyse the envisaged functioning of the PMAC and assess the implications it may have for start-ups. In order to understand the implications of the PMAC for start-ups, it is relevant to first explore and analyse potential advantages and disadvantages of arbitration concerning patent disputes in general.

One of the most important advantages of arbitration in comparison to court proceedings is the expertise and experience of arbitral tribunals, in particular in the cases in which the dispute requires technical analysis and assessments.[738] Indeed, the process of selecting the arbitrators, who are chosen on the basis of their technical knowledge and background, aims at ensuring high quality of the awards. Secondly, in arbitration, parties have room to decide how to set and frame the dispute resolution process and establish the scope of the dispute.[739] By way of example, in order to evaluate the entire portfolio of patents, they may agree on the submission of only part of the owned patents, or for example they can agree on a specific procedural approach to settle royalties.[740] Moreover, it is also relevant to stress that in this context, it is possible to choose the 'locus' of arbitration[741] and that parties can also take advantage of arbitration for the purpose of consolidating transnational disputes without being bound by the limitations of the rules on international jurisdiction of the BR for bringing actions concerning a bundle of national patents. These circumstances are of particular advantage in cases where the courts at the defendant´s domicile are less experienced or are considerably slow. Thirdly, and similarly to mediation, parties can keep all the dispute and the resulting award confidential and they can therefore avoid the disclosure of important information to the other competitors, such as the established amount of the royalty rate. Finally, some authors state that arbitral proceedings imply consistent costs savings in comparison to the expenses deriving from pursuing litigation in several countries.[742] This is however highly controversial, since the involvement of high experts and the complexity of the cases can often result in much more expenses in comparison to court proceedings.

Arbitral proceedings may present however also several disadvantages when compared to litigation before national courts, in addition to the already mentioned likelihood of risk of higher costs and expenses. In particular, concerns exist in relation to actions for invalidity and in relation to requests for interim measures. The arbitrability of patent invalidity depends on the national

[738] Peter Chrocziel, Boris Kasolowsky, Robert Whitener et al., *International Arbitration of Intellectual Property Disputes—A Practitioner's Guide* (C.H. Beck 2017) 88.
[739] Gary B. Born, *International Arbitration and Forum Selection Agreements: Drafting and Enforcing* (Kluwer Law International 2016) 29–114.
[740] Marc A. Lemley, Carl Shapiro, 'A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents' (2013) 28 Berkeley Tech. L.J. 1135, 1144.
[741] Matthew A. Smith, Marina Cousté, Temogen Hield et al., 'Arbitration of Patent Infringement and Validity Issues Worldwide' (2006) 19 Harvard Journal of Law & Technology 301, 302.
[742] Kai-Uwe Kühn et al., 'Standard Setting Organizations Can Help Solve the Standard Essential Patents Licensing Problem', CPI Antitrust Chronicle (4 March 2013), available at: https://www.competitionpolicyinternational.com/standard-setting-organizations-can-help-solve-the-standard-essential-patents-licensing-problem/ (accessed 10 May 2020) 1 and 4.

applicable law. In this regard, states can be divided in two main groups. The first group of states does not allow issues concerning the validity of a patent to be arbitrated.[743] One main legal argument against the arbitrability of patent invalidity is that the laws of a state provide a specific court or administrative body with exclusive jurisdiction over patent validity disputes.[744]

For example, in France the arbitrability of patent validity is excluded. The Tribunaux de grande instance and appellate courts have exclusive jurisdiction over patent disputes, which can be arbitrated only to the extent that they do not relate to matters of 'ordre public'.[745] Indeed, questions related to the grant or validity of the patent are considered a matter of 'ordre public' since the patent is a public title granted by an administrative authority.[746]

In contrast, the laws of the second group of states treat all patent issues, including patent validity, as arbitrable matters.[747] However, in general, an arbitral tribunal can only decides on the validity issue with *inter partes* effects. Hence, an award finding the patent invalid will not preclude the enforcement of that patent against third parties.[748] This is for example what the law provides for in England.[749]

The developments concerning arbitrability of patent validity in Germany are instead peculiar. Such disputes were considered non-arbitrable prior to a reform of arbitration laws in 1998. This was due to several reasons, including the exclusive jurisdiction of the *Bundespatentsgericht* and

[743] This includes countries such as Sweden, the Netherlands, Austria, Spain and France.

[744] For a thorough analysis of additional legal and policy arguments justifying non arbitrability of patent validity, based for example on the sovereign nature of the patent grant or on the inherent limited power of the arbitrator and their respective critiques, see Matthew A. Smith, Marina Cousté, Temogen Hield et al., 'Arbitration of Patent Infringement and Validity Issues Worldwide' (2006) 19 Harvard Journal of Law & Technology 301, 306–313.

[745] See *Code de la propriété intellectuelle* Article L615–17 and *Code civil* Articles 2059–2060.

[746] *Code civil* Article 6.

[747] It is here relevant to note that the aim of this distinction is just to provide an overview of different approaches as regards arbitrabilty of patent matters in different countries and not to formulate a choice-of-law rule pursuant to which the law of the place of arbitration decides on arbitrability thereby overriding the *lex loci protectionis* rule. In particular, it is important to highlight that as regards conflicts on applicable laws, the recently adopted Guidelines on Intellectual Property and Private International Law include a rule on arbitrability in Guideline 31, which reads: 'When assessing the arbitrability of disputes concerning intellectual property rights, courts and arbitral tribunals shall take into consideration the law of the arbitration, to the extent that the rights in dispute have a close connection with it, and that of the State of protection, particularly insofar as the award has to be recognized and enforced in that State'. See ILA Committee on Intellectual Property and Private International Law, 'Guidelines on Intellectual Property and Private International Law ('Kyoto Guidelines') (Resolution 6/2020).

[748] Matthew A. Smith, Marina Cousté, Temogen Hield et al., 'Arbitration of Patent Infringement and Validity Issues Worldwide' (2006) 19 Harvard Journal of Law & Technology 301, 305.

[749] The UK Patents Act 1977 provides for arbitration in certain circumstances. For example, when an application for a compulsory patent licence is opposed, the Comptroller General of Patent may order that any issue or questions arising in proceedings to be referred to an arbitrator pursuant to Section 52(3) of UK Patents Act 1977. Moreover, Section 16 of the Arbitration Act 1950 and Section 58(1) of Arbitration Act 1996 provide that disputes relating to title to real property may be arbitrated and awards in those cases bind the parties, those 'claiming under' a party to the arbitration, but not third parties.

the public law concerns linked to the patent exclusivity.[750] The changes introduced in 1998 in the Code of Civil Procedure (*Zivilprozessordnung*) allowed for the arbitrability of commercial and private property matters, but kept certain restrictions on arbitrability in place. The parties are indeed allowed to reach a binding agreement only if that agreement remains *inter partes.*[751] The reform thus affirmed the arbitrability of patent infringement issues, which fall within the scope of private property matters, but did not considerably change the situation with regard to patent validity claims. Hence, an arbitral tribunal dealing with patent issues may issue an award requiring a party to grant a licence or providing a certain interpretation of the claims. In these circumstances the decision on patent validity will only be binding *inter partes,* as would also happen with a civil court decision. The tribunal however, cannot declare the patent invalid against all third parties.[752]

When it comes to requests for interim measures instead, despite the wide power granted to an arbitral tribunal, there are several disadvantages in requiring interim measures in arbitral proceedings. First of all, it may take several months for a tribunal to be constituted. As a consequence, parties will have to wait long time in order to be granted an interim relief, which then will not be timely and effective anymore.[753] Nevertheless, this issue has partially found a solution thanks to certain institutional arbitration rules which foresee the possibility to appoint an emergency arbitrator upon parties' request and after having demonstrated the urgency of the matter.[754] Indeed, the emergency arbitrator is entitled to grant the appropriate measure even before the appointment of the arbitration tribunal. Secondly, concerns arise also when it comes to the availability of *ex parte* relief orders, when arbitrators directly grant interim reliefs against one party after having been approached by the other party.[755] This raises the issue that these measures are against the right of both parties to be heard. In this regard, however, the UNICITRAL Rules offer a solution to this issue, providing for some limitations to the circumstances under which an arbitral tribunal can grant those kinds of measures.[756] Thirdly, problems arise when a party does not voluntarily comply with the order that the arbitral tribunal has issued against her.

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[750] See Jochen Pagenberg, 'The Arbitrability of Intellectual Property Disputes in Germany' Worldwide Forum on the Arbitration of Intellectual Property Disputes (1994) available at https://www.wipo.int/amc/en/events/conferences/1994/pagenberg.html (accessed on 5 October 2020).

[751] § 1030 Zivilprozessordnung [ZPO] reads: 'Any private property matter may be the subject of an arbitration agreement. An arbitration agreement regarding matters not concerning private property is valid to the degree to which the parties are entitled to reach a settlement over the issue at dispute'.

[752] Lutz van Raden, 'Außergerichtliche Konfliktregelung im gewerblichen Rechtsschutz' (1998) GRUR 444, 446- 447; Matthew A. Smith, Marina Cousté, Temogen Hield et al., 'Arbitration of Patent Infringement and Validity Issues Worldwide' (2006) 19 *Harvard Journal of Law & Technology* 301, 336.

[753] Peter Chrocziel, Boris Kasolowsky, Robert Whitener et al., *International Arbitration of Intellectual Property Disputes—A Practitioner's Guide* (C.H.Beck 2017) 105.

[754] See, e.g., ICC Rules Art 29; LCIA Rules Art 9B; WIPO Arbitration Rules Art 49.

[755] Peter Chrocziel, Boris Kasolowsky, Robert Whitener et al., *International Arbitration of Intellectual Property Disputes—A Practitioner's Guide* (C.H.Beck 2017) 105.

[756] See UNICITRAL Model law Art 17B.

In these cases, state courts will need to enforce the measure.[757] And this may cause problems because signatory states of the New York Convention have to enforce only 'awards' and not 'orders'.[758] Therefore, national courts can refuse to enforce such an interim measure.

In addition, in this framework, it is relevant to highlight that arbitration works better and is more often relied upon in IP licensing cases, as it can be foreseen upfront in arbitration clauses included in licencing agreements. In contrast, in infringement cases parties refer to arbitration only when the dispute has already commenced, which often occurs through actions brought before state courts. Furthermore, competition law also plays an important role in this context. Indeed, a party can prevent the enforcement of an arbitration award by seeking its annulment before a state court on the basis of disrespect of EU competition law.[759] Therefore, in arbitration proceedings with judicial overview, state courts and ultimately also the CJEU will have to take into consideration also the limitations of competition law, for example as regards 'pay-for-delay' settlements.

By taking into account both the possible advantages and disadvantages of mediation and arbitration, it is evident that parties, being it start-ups or not, need to take into account all the circumstances of the case, in order to be able to meet a more informed decision on whether it would be more appropriate to litigate before traditional courts or before an arbitral tribunal or mediation panel.

III. The UPC Patent Mediation and Arbitration Centre (PMAC)

This Section discusses the envisaged construction and functioning of the UPC Patent Mediation and Arbitration Centre (PMAC), in order to understand its potential advantages and shortcomings for start-ups. Article 35 UPCA provides for the establishment of the PMAC with seats in Ljubljana and Lisbon. The provision is highly relevant because it is the first time in which a referral to the possibility to solve certain IP disputes throughout arbitration is contained in an EU legal document.[760] Sub-working Group (Group 6) has already drafted the 'Mediation Rules' and 'Arbitration Rules' as foreseen by Article 35(3) UPCA[761] and has set up an organisational and managerial structure for the PMAC, as included in the Rules of Operations of the Mediation and Arbitration Centre of the UPC (the 'Operational Rules') as adopted o 8 July 2022. Furthermore,

[757] Peter Chrocziel, Boris Kasolowsky, Robert Whitener et al., *International Arbitration of Intellectual Property Disputes—A Practitioner's Guide* (C.H.Beck 2017) 106.
[758] Convention on the Recognition and Enforcement of Foreign Arbitral Awards Art I (1), 10 June 10 1958, New York Convention, The New York Convention is the foundational treaty concerning international commercial arbitration, and its purpose is to ensure certainty in the recognition and enforcement of international arbitral awards.
[759] CJEU Case C-126/97 *Eco Swiss* ECLI:EU:C:1999:269.
[760] Jacques de Werra, 'New Developments of IP Arbitration and Mediation in Europe: The Patent Mediation and Arbitration Center Instituted by the Agreement on a Unified Patent Court (UPC)' (2014) Revista Brasileira de Arbitragem 18, 22.
[761] Article 35(3) UPCA. The Patent Mediation and Arbitration Centre working group has drafted the Mediation Rules and Arbitration Rules and an expert group will examine the draft rules once the Centre has been established.

Article 35(4) UPCA envisages the creation of a list of mediators and arbitrators who assist parties in the settlement of their dispute.

1. The Composition and Organisation of the Centre

Pursuant to Rule 2 of the Operational Rules, even if the PMAC is linked to the UPC, it is an independent and impartial body. The PMAC will work in close connection with the committees or bodies of the UPC, which decide in relation to the operation of the Centre and will have the same liabilities and legal status.[762]

The PMAC will have seats in Lisbon and Ljubljana. However, there is the possibility for arbitration and mediation proceedings to be held in a different venue as agreed by the parties. If the proceedings take place at the seats, facilities should be provided (Rule 4 Operational Rules), and the aim of this rule is to attract these types of proceedings to Lisbon and Ljubljana. The purpose of the setting-up of the Centre is to encourage arbitration and mediation in cases which fall, partially or fully, within the competence of the UPC. This objective is expected to be realised, for example, through institutional support for mediation and arbitration proceedings, through specific rules, fee schedules, model clauses for use in mediation and arbitration, through the availability of facilities that parties can use to pursue arbitration and mediation proceedings and through the organisation, together with other institutions, of the training of mediators and arbitrators.[763] The working languages of the PMAC are English, French and German and the language of the actual proceedings may be agreed between the parties.[764] Pursuant to Article 39 UPCA and the financial regulations of the UPC apply to the PMAC, the PMAC budget is part of the one of the UPC budget,.[765]

When it comes to its composition, the PMAC is represented by a sole Director for a five-year renewable term, who performs all the duties which are not already exclusively assigned to another part of the administrative body. The Director is independent and will also be responsible for the complete operational and organisational structure of the Centre and should have experience in the field of intellectual property law, ADR and management.[766] Furthermore, the

[762] The PMAC will have legal personality in the Member States of the EU in which the UPCA has entered into force and has the legal capacity that legal persons enjoy under the national law of the state concerned. The contractual liability of the PMAC will be established on the basis of Reg. (EC) No. 593/2008 (Rome I) in the cases in which it is applicable or if not, according to private international law of the Member State where the procedure takes place. Instead, the non-contractual liability concerning, for example, damages caused by its staff while performing its duties will be governed by Reg. (EC) No. 864/2007 (Rome II) or, if it does not apply, pursuant to the international private law of the Member State in which the damage occurred. See also Sam Granata, 'The Patent Mediation and Arbitration Centre Instituted by the Agreement on an UPC' in Théophile Margellos, Sophia Bonne et al. (eds.), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 147.

[763] Rule 5 Operational Rules.

[764] Article 12(1) Mediation Rules and Article 17 Arbitration Rules.

[765] Rule 7 Operational Rules.

[766] Rule 7 Operational Rules.

Administrative Committee of the UPC has to act as the Administrative Committee of the PMAC and its duties include, among others, the adoption of a set of Rules, the fee schedules and other relevant by-laws of the Centre as well as the appointment of the Director and the members of the Expert Committee upon proposal of the Contracting States.[767] In addition, also the Budget Committee of the UPC will act as the one of the PMAC and decide the draft budget of the Centre and set the financial contributions necessary to its operation. Lastly, twelve independent experts in the field of patent, arbitration and mediation law compose the Expert Committee, appointed by the Administrative Committee for a renewable term of six years, upon proposal of the Contracting Member States.[768] The Expert Committee is independent and should cooperate with the Director in setting up a list of arbitrators and mediators and proposing the appropriate changes and amendments to the PMAC Rules.[769] Moreover, the PMAC will set up and keep a list of arbitrators and mediators who are competent in the patent law field, coming from all Contracting Member State, and the criteria and qualifications to be admitted in the list will be established by the Director and the Expert Committee.[770]

Despite of the articulated legal framework, the construction and composition of the PMAC already *per se* raises potential issues, concerns and uncertainties which add to the ones generally relating to mediation and/or arbitration. For example, some operational issues relate to the fact that at the beginning the PMAC might not be able to offer enough facilities due to a lack of financial resources.[771] In addition, it is also possible that other already existing institutions may see the PMAC as a competitor and will therefore not be willing to cooperate for example in relation to the training of the staff.[772] Yet in this regard it has however also been argued that the PMAC should not be seen as a direct competitor to other existing ADR centres but instead as an alternative system for resolving the dispute within the UPC framework.[773] Moreover, uncertainties still remain when it comes to the selection process of arbitrators and administrative fees. Most importantly, another operational and structural issue concerns the remaining degree of uncertainty surrounding the interaction between the UPC and the PMAC. There is indeed only one provision, namely, Rule 11(1) of UPC Rules of Procedures, which provides for a certain link between the two. The Rule provides that if the Court is of the opinion that the dispute is suitable for a settlement, at any stage of the proceeding it may propose that the parties explore a settlement of the dispute by making use of PMAC services and facilities. Thus, the extent of the

[767] Rule 10 Operational Rules.
[768] Rule 12 Operational Rules.
[769] Rule 12 Operational Rules.
[770] Rule 12 ad 14 Operational Rules.
[771] As it has been stressed in the context of the conference 'The UPC Mediation and Arbitration Centre', Forum IPDR Workshop (Munich, 2 February 2016).
[772] Ibid.
[773] For this position see Sam Granata, 'The Patent Mediation and Arbitration Centre Instituted by the Agreement on an UPC' in Théophile Margellos, Sophia Bonne et al. (eds.), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 144, 145. A more detailed analysis of the functions of the Centre and its connection to the UPC will be provided in the next subsection.

use of the PMAC during proceedings greatly depends on the discretion of the Court. However, it must be stressed that, at the beginning of the proceedings, a vital role is allocated to the judge rapporteur, who has a duty to inform the parties about the alternative dispute resolution mechanisms offered by the PMAC.[774] In particular, the last-mentioned issue deserves specific attention, because it is intrinsically connected to the functioning of the Centre and thus requires to be dealt with the issues concerning the substantive scope of the services rendered by the PMAC. These issues are particularly relevant because they concern the functioning of the Centre and, thus, they do play a role in understanding and assessing the implications of the PMAC for start-ups.

2. Substantive scope of services rendered by the PMAC

According to Article 35(2) UPCA, the PMAC will provide facilities for mediation and arbitration of patent disputes 'falling within the scope of this Agreement'.[775] It is therefore evident that the services appear to cover only disputes related to EPUEs or EPs. From the wording it thus seems that the services of the PMAC will not be available for disputes concerning other patents or other IP rights.[776] This interpretation has however caused criticism, in particular as concerns the extent of jurisdiction, in consideration of the fact that in many cases parties can be willing to submit their dispute to arbitration only if it can be settled at a global level. A narrow approach would instead go against the aim of alternative dispute resolution. Indeed, it would prevent the parties from addressing the dispute in a more holistic manner by taking into account also further underlying disagreements between the parties, whose legal nature may also transcend the one of the patent dispute.[777]

There is therefore no real advantage nor specific reason why the powers of the PMAC have to be exactly the same of the exclusive jurisdictional power of the UPC.[778] This issue has been intensively discussed, and this has ultimately led to a decision of the Working Group and of a great part of the members of the Preparatory Committee to widen the scope of services of the PMAC to any possible other type of settlement.[779] As a consequence, 'falling within the scope of

[774] Cf. Rule 11(1) and also in particular Article 52(2), last sentence, UPCA, and Rule 104(d) RoP.
[775] Article 35(2) UPCA.
[776] Jacques de Werra, 'New Developments of IP Arbitration and Mediation in Europe: The Patent Mediation and Arbitration Center Instituted by the Agreement on a Unified Patent Court (UPC)' (2014) Revista Brasileira de Arbitragem 18, 24.
[777] Sam Granata, 'The Patent Mediation and Arbitration Centre Instituted by the Agreement on an UPC' in Théophile Margellos, Sophia Bonne et al. (eds.), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 144, 152.
[778] Jacques de Werra, 'New Developments of IP Arbitration and Mediation in Europe: The Patent Mediation and Arbitration Center Instituted by the Agreement on a Unified Patent Court (UPC)' (2014) Revista Brasileira de Arbitragem 18, 24.
[779] As stated by Judge Sam Granata orally at the conference 'The UPC Mediation and Arbitration Centre', Forum IPDR Workshop (Munich, 2 February 2016).

the UPCA' should rather be interpreted as a minimum condition to make use of the PMAC. And, when a patent dispute falls within the scope of the UPCA, the PMAC should have the competence to deal with all patent and also other contractual and intellectual property-related issues connected to the dispute. This is also justified on the basis of Rule 5 of the Operational Rules which states that the aim of the PMAC is to promote mediation and arbitration in cases that fall 'wholly or in part' within the competence of the UPC.[780]

Another related issue concerns the substantive law that the PMAC will have to apply. Pursuant to Rule 19(1) Arbitration Rules, the choice of the law is left to the parties and if the parties do not agree, then the Tribunal shall apply the law which appears to be the most appropriate, having heard the parties' observations and statements.[781] Therefore, the applicable law can be different from the one that the UPC would apply in proceedings on the same case.

In addition, it is also important to stress that due to the wording of Article 35(2) UPCA, which does not provide exclusive jurisdiction for mediation and arbitration of UPC cases in favour of the PMAC, it can be argued that the parties have the freedom to submit a dispute regarding an EPUP or other European patent to another arbitration and mediation centre (for example, ICC; LCIA).[782]

3. Revocation of the Patent and Limitation of Patent Scope in Mediation and Arbitration

Moreover, Article 35(2) UPCA continues by providing that 'a patent may not be revoked or limited in mediation or arbitration proceedings'.

As regards arbitration, it is however controversial whether the PMAC should not have any power to decide on patent validity and patent scope or, alternatively, the effect of these decisions should be limited to the parties. The latter appears to be the more appropriate solution,[783] considering that such issues need often to be addressed in disputes that deal with defences to infringement claims and with the contractual use of the patent. By way of example, a party may

[780] As noted by Sam Granata, 'The Patent Mediation and Arbitration Centre Instituted by the Agreement on an UPC' in Théophile Margellos, Sophia Bonne et al. (eds), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 144, 152.

[781] In this context, the proposal of the Belgian delegation should be taken into account, which argued that the Tribunal should base its decisions on the sources of law referred to in Article 24 UPCA, in compliance with Article 20 UPCA. Proposal mentioned Sam Granata, 'The Patent Mediation and Arbitration Centre Instituted by the Agreement on an UPC' in Théophile Margellos, Sophia Bonne et al., (eds.), *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 144, 152, note 388.

[782] Jacques de Werra, 'New Developments of IP Arbitration and Mediation in Europe: The Patent Mediation and Arbitration Center Instituted by the Agreement on a Unified Patent Court (UPC)' (2014) Revista Brasileira de Arbitragem 18, 25.

[783] Jacques de Werra, 'New Developments of IP Arbitration and Mediation in Europe: The Patent Mediation and Arbitration Center Instituted by the Agreement on a Unified Patent Court (UPC)' (2014) Revista Brasileira de Arbitragem 18, 27.

refuse to pay royalties on the basis of the alleged invalidity of the patent.[784] The Working Group has therefore stated that limitations of the patent scope *erga omnes* are indeed impossible, but the ones *inter partes* are instead, feasible.[785] In relation to arbitral awards, parties have therefore the possibility of seeking a limitation and revocation of a patent to the extent that there is no impact on third parties' rights and on the public. In addition, it must be stressed that the revocation or limitation of a patent can occur during settlements. This understanding is confirmed by Rule 11(2) RoP, establishing that a decision by the Court can confirm the terms of a settlement or arbitral award by consent, 'including a term which obliges the patent owner to limit, surrender or agree on the revocation of a patent or not to assert it against the other party and/or third parties'.

From the analysis it results that there are considerable uncertainties regarding the substantive scope and effect of the PMAC services. The interpretation and clarifications by the Working Group and by the Preparatory Committee have helped to reduce these uncertainties, which however will only ultimately be solved once the PMAC has become operational and upon interpretation by the PMAC itself and by courts. Nevertheless, in order to better assess the implications of the use of the PMAC for start-ups, it is relevant to better assess and understand under which circumstances it is more probable that PMAC services would be used and how these services are linked to the UPC's functions.

4. Practical Relevance of the PMAC in Specific Cases

It is foreseeable that the PMAC may have a primary role to play for the resolution of FRAND disputes.[786] Indeed, the PMAC has been indicated and chosen in the context of the commitments that Samsung made to the European Commission (hereinafter 'the Samsung Commitments') to terminate a competition law investigation of the European Commission following a complaint by

[784] In this regard, it should however be remembered that in some arbitral disputes the decision related to the validity of a patent might not be decisive for the case. A finding of invalidity of a patent may in fact not affect too much arbitration that arises from an agreement which does not depend exclusively on the validity of the patent. This concept was in particular highlighted already in the *Ottung* case, where the CJEU held that a decision on invalidity may well not solve all the issues involved in the proceeding. Indeed, in some cases, the royalty payments might be due on the basis of the commercial assessment of the agreement and not be strictly dependent on the validity of the patent in itself. See Case 320/87 *Ottung* ECLI:EU:C:1989:195 paras 11-12; see also Peter Chrocziel, Boris Kasolowsky, Robert Whitener et al., *International Arbitration of Intellectual Property Disputes—A Practitioner's Guide* (C.H. Beck, Munich 2017) 94.

[785] Sam Granata, 'The Patent Mediation and Arbitration Centre Instituted by the Agreement on an UPC' in Théophile Margellos, Sophia Bonne et al., (eds.) *Mediation: Creating Value in International Intellectual Property Disputes* (Wolters Kluwer 2018) 144, 155.

[786] In relation to arbitration as a mandatory dispute resolution mechanism in the context of standard essential patents (SEPs) litigation, see Pierre Larouche, Jorge Padilla and Richard S. Taffet, 'Setting FRAND Disputes: is mandatory arbitration a reasonable and non-discriminatory alternative?' (2014) 10 Journal of Competition Law & Economics 581–610.

Apple.[787] In that case, Samsung owned SEPs which were essential for the 3G UMTS standard and had committed to ETSI to license these patents on FRAND terms. The Commission had to assess the compatibility of Samsung's attempt to enforce injunctive relief against Apple as an implementer despite the FRAND commitment under Article 102 TFUE, which then lead to the Samsung's commitments.[788] The commitments provide for a multi-tiered 'Licensing Framework', which allows the parties to submit the dispute to arbitration or court adjudication for the FRAND determination in case of failure of the parties to agree on FRAND licensing terms.[789] The Commitments refer to institutional arbitration providing that 'the dispute shall be finally settled under the rules of arbitration of the ICC'. However, the parties can also agree that 'the arbitration tribunal will be the patent mediation and arbitration center as established under Article 35(1) of the Agreement on a Unified Patent Court'.[790] This reference shows the potential role and importance that the PMAC could achieve in the next future for FRAND-related disputes in the context of SEP litigation.[791]

However, for the time being, it is still unclear to what extent and how the PMAC will operate and in which manner it will be related and interconnected to the UPC in general. The relationship of the PMAC with the UPC are further clarified by the Rules of Procedure.[792] As mentioned above, at the beginning of the proceedings the judge rapporteur is under an obligation to inform the parties of the possibilities of mediation and arbitration at the PMAC. During any other stage of the proceedings, it is instead the discretion of the Court to propose that the parties consider a resolution of the dispute by making use of PMAC services. Thus, the extent at which the PMAC will be used will depend on whether, during the proceedings, the Court is of the opinion that the dispute is suitable for a settlement. In this context, it can be highlighted that the activities of the UPC and of the PMAC appear to have been brought closer under a procedural approach in which damages and costs are usually decided after that a decision on infringement or validity has been reached. Thus, it may be assumed that the PMAC will mainly be involved in procedures for the award of damages. In fact, a successful party can apply for the determination of damages, within one year after the decision on the merits.[793] This determination can occur in a separate proceeding and it would indeed be strategic for the parties to rely on the services of the PMAC in this regard, due to the complexity and often commercial nature of damage determination.

[787] Commission Decision of 29 April 2014, Case AT.39939 – Samsung – Enforcement of UMTS standard essential patents) C(2014) 2891 final.
[788] Commission Decision of 29 April 2014, Case AT.39939 – Samsung – Enforcement of UMTS standard essential patents), C(2014) 2891 final. The Commitments are also available at: http://ec.europa.eu/competition/antitrust/cases/dec_docs/39939/39939_1502_5.pdf (accessed on 25 May 2020).
[789] Ibid.
[790] Commitments, clause 9.a.
[791] For more details in relation to the Samsung Commitments see Jacques de Werra, 'The expanding significance of arbitration for patent licensing disputes: from post-termination disputes to pre licensing FRAND disputes' (2014) 32 ASA Bulletin 692-706.
[792] Cf. Rule 11(1) and Rule 104(d) RoP as mentioned above in sub-section 1.
[793] Rules 125 and 126 RoP.

Indeed, it is very likely that the majority of disputes dealt with by the PMAC will be subsequent to a legal action on infringement and/or validity on which the Court and/or the mediation organism has already reached a decision, and this because of four main reasons: first, the nature of patent law disputes which are related to infringements and validity and for which parties are not bound upfront by an arbitration agreement; secondly, the impossibility to pronounce a revocation or limitation of a patent with *erga omnes* effects during mediation and arbitration proceedings; thirdly, the inherent dependent nature of proceedings for damages; and fourthly, the stronger confidentiality warranties for the parties. As a consequence, the success and the use of the Centre in particular and also of ADR in general, would also depend on the extent to which the Court and the parties would take into consideration the PMAC's functions, services and facilities during proceedings.

IV. Conclusion

Overall, the PMAC may present several advantages for the users, including the fact of being established within the framework of a court specialised in patent disputes with which it can operate in a mutually supportive manner, despite of being independent from it. Moreover, when it comes to the potential advantages that may be particularly important and relevant for start-ups and financially constrained litigants in general, one has to stress that ADR proceedings can be conducted in whatever language the parties choose and wherever they prefer. In addition, also the overall PMAC organisational structure may well be lighter and more flexible and can be developed on the basis of the caseload and thus may be best suited to accommodate the needs of the market players. In particular, by taking into consideration the analysis concerning arbitration and mediation in general, it is possible to argue that it may well be that the mediation services will represent a good opportunity and potentially better option for start-ups in comparison to arbitration. This however is not mainly due to the specific characteristics and peculiarities of the Centre, but to the comparative advantages and disadvantages of mediation and arbitration. Nevertheless, it may well be that start-ups and other users will not particularly make use of the – already quite limited – potential advantages that the Centre, and in particular as regards mediation, may offer. This is so because the use of the opportunities the PMAC offers is intrinsically linked to the overall success of the UPC as a whole. Such a success will depend on how much the users will trust both the Court and the PMAC and also, more in general, on how much confidence they will have in alternative dispute resolution in the context of patent litigation. The extent of trust and confidence will in turn depend also on the manner in which uncertainties and issues regarding the UPC system at large will be overcome.

F. Summary of the Overall Implications for Start-Ups and Proposals

From the analysis in this Chapter, it follows that the envisaged set-up of the UPC will have several implications for start-ups and their innovative activities. The analysed features may bring some advantages in comparison to the current framework but do also raise several concerns which require either amendments to the specific provisions or guidelines for the most appropriate interpretation in order to overcome existing imbalances.

I. Imbalances Concerning the Proximity of Litigation

As regards the rules of competence and the issue of proximity of litigation, it resulted that in several cases the rules of division of competence of the UPC do not follow the principles of the BR with potentially harmful consequences for both plaintiffs (patentees) and defendants (non-patentees), depending on the situation taken into consideration. The greatest disadvantages derive from the fact that, despite of the attempt to construe a decentralised common court, litigation will occur more and more often abroad, in comparison to what happens within the current framework. Overall, the great part of the cases in which it is possible to foresee potential harmful consequences relates to the position of the defendant (non-patentee). Yet, regardless of the specific position in which the parties may find themselves in the individual case, it can be argued that the ones who will suffer more from the changes in the patent litigation landscape are the more financially constrained businesses. As a consequence, the imbalance results to be not only more in favour of the plaintiff (patentee) but in particular at the advantage of the financially and strategically stronger party.

Therefore, it is necessary to formulate possible changes or alternatives that will help to rebalance the system. Since the UPCA is now about to be implemented, such amendments could be implemented in the framework of a future revision of the UPCA.

As a result of this thesis, the following is suggested: First, for the case of absence of the place of business in the territory of a CMSs, it is advisable to substitute the competence of the central division with the competence of the division of the place of infringement. This would not only be in conformity with the BR principles, but also better for start-ups that do not have any place of business in a CMSs. To a certain extent, start-ups will also be more familiar with the place where the alleged infringement occured.

Secondly, the already mentioned and envisaged solution of moving the place of litigation to the closest division rather than in the central division, seems a better solution for cases in which the relevant CMS is without a local or regional division (Article 33(1)(4) UPCA). Of course, an even preferable solution would be to make sure that there is always such local division.

Thirdly, the regional division clause (Article 33(2)(2) UPCA) should also be changed by deleting the possibility to move the competence to the central division at the request of the defendant. Indeed, leaving the competence in the regional area would not constitute a real disadvantage for

a start-up defendant, who may anyhow only very rarely want to make use of such a request. Yet, such reform would represent an improvement for a start-up plaintiff (patentee), who would then not be put at risk by strategic decisions of a potentially stronger defendant.

Fourthly, similar considerations may well apply in relation to the Article 33(5) UPCA, providing the patent proprietor with the choice of the place where to file an infringement action once an opposition or an invalidity action has been filed. For this case, the provision should also be amended by limiting jurisdiction to the division at the place of infringement.

Finally, the competence for declaratory actions on non-infringement according to Article 33(6) UPCA should be moved from the central division to the division of infringement.

II. Imbalances Concerning the Scope of Judgments (*res iudicata*)

As regards concerns related to the extent and scope of jurisdiction of the judgments of the UPC (*res iudicata*), it is evident how, in the framework of the UPC, the effects of decisions are of a multi-territorial nature. In the case of an EPUE, UPC judgments will cover the territories of all the CMSs, while in the case of a European patent they only cover the territory of those CMS for which the European patent has effect, with the possible exceptions analysed under Article 34 UPCA. In addition, in the case of damages orders, that effect extends its long-arm even beyond the borders of the EU. In contrast, within the current system, national courts can only adjudicate cases regarding the patent law situation in other countries under the much more restrictive rules on international jurisdiction of the Brussels Ibis Regulation.

As a consequence, it is evident that in this case the implications for start-ups of the much broader scope of jurisdiction change depending not only on whether the start-up acts as a plaintiff or defendant but also on the outcome of the judgment. It is indeed clear that litigating before the UPC would provide any business with the advantage of enjoying the broader effects of the judgment without having to bring several actions in multiple fora or to defend itself in numerous proceedings across several states. Yet, it is evident that the consequences of a potentially negative outcome, regardless of whether a start-up is acting as plaintiff or defendant, put such start-up with limited resources at a much higher economic risk, which may even lead to its bankruptcy. This shows the lack of balance of a system that in general favours larger and more established businesses that can afford the risk and consequences deriving from an unfavourable multi-territorial decision. This imbalance is therefore in need of being mitigated.

In this context, a more balanced interpretation of the law should provide more room to the application of the principle of proportionality when granting permanent injunctions and provisional measures, thereby better safeguarding the interests of the parties involved. In contrast, to remedy the unjustified long-arm jurisdiction, Article 71b(3) Brussels Ibis Regulation,

which provides for this kind of jurisdiction for damage actions should be eliminated in its entirety.

III. Imbalances Concerning Costs

In addition, when analysing the costs of litigation before selected national courts and before the UPC, it results that litigating before the UPC would represent a considerable financial burden for start-ups and surely a riskier one in terms of financial threat than what currently occurs within the system of national courts. This therefore represents an additional imbalance, putting financially constrained businesses at a considerable disadvantage as compared to financially stronger incumbents. This imbalance regards start-ups in their role as plaintiffs and defendants. Indeed, regardless of the position, they would run the risk of having to bear the amount of the recoverable costs in case of loss. Although the Administrative Committee has provided for tailored rules on costs and legal aid in order to ensure access to justice, the analysis of this study shows that these measures are not sufficient and that to a certain extent they are not appropriately drafted.

To avoid these cost-related imbalances, start-ups may consider using alternative dispute resolution (ADR) mechanisms. The analysis shows the specific advantages of such mechanism especially for financially constrained businesses. Indeed, ADR proceedings can be conducted in whatever language the parties choose and wherever the parties prefer. In addition, also the overall procedural construction may well be lighter and more flexible and can be developed on the basis of the caseload and, thus, may be best suited to accommodate the needs of individual market players. In particular, mediation services could represent a good opportunity for start-ups in comparison to the options offered by arbitration. However, the study has also identified existing legal uncertainties concerning the system of the UPC Patent Mediation and Arbitration Centre (PMAC), in particular with regard to the extent to which the Court would propose the use of the Centre during proceedings and in relation to the substantial scope of PMAC services. Concerning the former, the current uncertainties may well be overcome once the PMAC becomes operational. As regards the latter, the analysis favoured the interpretation which stresses the importance to widen the scope of services of the PMAC to any other possible type of settlement, thus including also other contractual and IP-related issues connected to the dispute at hand. Nevertheless, whether the ADR services offered by the PMAC will become a success and, in turn, benefit innovative start-ups in particular, will very much depend on the extent of trust users will be likely to put in the new system.

IV. Overall Evaluation

From the present Chapter, it results that the envisaged system of the UPC presents several imbalances which may well be particularly critical for financially constrained businesses such as start-ups and their innovative activities. These imbalances do not only cause the implications specifically analysed in relation to the selected features, but may well also have broader and systematic consequences, which could also represent a potential threat to the innovation of start-ups. Hence, the specific proposals for the main individuated and analysed features would certainly be of help but probably not sufficient to re-calibrate all the existent imbalances and avoid broader, potentially harmful, consequences. Therefore, despite the entry into force of the UPCA, from a more scholarly perspective, the proposal of a possible redefinition and different design of the Court structure, may be considered as a systematic solution to redress the critical imbalances. The proposal of a different and 'ideal' system may also have practical relevance if inventors decide not to make use of the new UPC system and return to filing national patents and can also be taken into account for any possible future reform of the patent system. To these aims, the next Chapter, first, explores what could be the overall broad systematic consequences and implications of the implementation of a system of unified patent protection. Second, it advances a proposal for a potentially more balanced system.

Chapter 3. Potential Alternative to the current UPC System

The analysed features of the UPC design present imbalances that may affect litigants with limited financial resources and experience such as start-ups in particular. Moreover, the entirety of the asymmetries may cause additional consequences that, in turn, can also have important implications for the start-ups' environment. In this context, the specific proposals submitted at the end of Chapter 2 may be very helpful, but probably not sufficient to adequately respond to the needs of start-ups. An environment more suited for and capable of supporting the innovation of start-ups may well require more comprehensive systematic changes in the light of the main concerns presented in this thesis. Chapter 3 therefore explores the broader consequences of the implementation of a system of unified patent litigation and sets forth some thoughts for a systematic reconsideration. Despite the upcoming entry into force of the UPC system in its current form, the analysis remains relevant as it allows to both anticipate and possibly mitigate major systematic consequences and to explore the advantages and shortcomings of the implementation of an alternative model for any possible future reform of the system. With this aim it answers the following main research questions: What are the systematic implications of the inherent asymmetries on the population of start-ups? What should an alternative, more balanced system look like?

A. Potential Consequences of the Asymmetries and Imbalances

To understand what the broader consequences of the analysed imbalances on the innovation of start-ups could be, it is first necessary to assess whether start-ups are more likely to act as plaintiffs or defendants once the UPC system becomes operational. This will help assess whether the UPC system will foster start-up innovation and, if not, whether more fundamental reforms would be recommendable. This Section A thus answers the following sub-questions: would start-ups be more likely to act as plaintiffs or defendants and for which reasons? Would the potential consequences of the establishment of the UPC have a greater impact on start-ups than other market players?

I. Start-Ups as Plaintiffs or Defendants

The extent to which the innovative activity of start-ups will be affected by the implementation of the UPC system very much depends on whether start-ups are more likely to be concerned as plaintiffs or defendants in that system.

To answer this question, it should first be recalled that the empirical analysis further above has shown that the majority of the population of high-tech start-ups currently choose alternative

means of protection for their inventions rather than patents.[794] As a consequence, it is logical to argue that the majority of start-ups are more likely to be 'non-patentees'. This consideration is of course of a very general nature, while sector-specific variations should also be noted in particular. It therefore results that particularly in the biotech sector it can be expected that the percentage of start-ups patentees will be higher than the one in the ICT sector. Despite such variations, on the basis of the analysed data, it is possible to claim that start-ups who patent only represent a small sample of the entire innovative population of start-ups.

Secondly, for a start-up that engage in patenting, it is important to identify which type of patents – national ones, European patents or EPUEs – they would be more likely to choose. In this regard, the factors that need to be taken into account are mainly the complexity and uncertainty related to the new type of unitary patent protection as well as the costs and the level of flexibility. First of all, the new system of unitary patent protection introduces a new layer of patent protection in addition to the currently available options. On the one hand, this widens the strategical choices available to patentees, but considerably increases the complexity of the system, on the other hand.[795] The increased complexity connected to the overall lack of awareness of the system may lead start-ups to refrain from opting for unitary patent protection. In addition, the risks arising from the uncertainties regarding the new system and the potential risk of invalidation of the entire EPUE would require early-stage businesses to secure the protection of their inventions also through national filings, in addition to the unitary one.[796] It is therefore very unlikely that a start-up company would have the ability as well as the means to pursue such a diversified portfolio. Furthermore, when it comes to cost considerations, the thesis has shown that at the level of prosecution and grant the cost issue may not imply too much differences in comparison to the case in which a European Patent without unitary effect is sought. Differences only arise as regards renewal fees for the maintenance of the patent. In this regard, national patents will turn out to be cheaper. The EPUE route will instead become more expensive than the EPO-route only starting from the twelfth year of existence of the patent.[797] In addition, it is however also important to recall the flexibility that the existing European patent system offers, which allows

[794] See Chapter I, Section B.

[795] See in this sense Reto M. Hilty, Thomas Jaeger, Matthias Lamping and Hanns Ullrich, 'The Unitary Patent Package: Twelve Reasons for Concern', Max Planck Institute for Intellectual Property & Competition Law Research Paper No. 12-12 (2012), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2169254 (accessed on 15 May 2020).

[796] However, this would be possible only if national patent protection will still be allowed in parallel to EPUE protection. Neither the UPCA nor EU law exclude national patenting. However, it is for the national legislation to decide on the matter. This does not guarantee that there will always be the opportunity to secure national patent protection in all states in parallel to EPUE. For arguments against 'double protection' see Roberto Romandini, Reto Hilty, Matthias Lamping, 'Stellungnahme zum Referentenentwurf eines Gesetzes zur Anpassung patentrechtlicher Vorschriften auf Grund der europäischen Patentreform' (2016) GRUR Int. 554, 557. In particular, the authors note that double protection would undermine the potential advantages of having a Unified Patent Court. Indeed, if double protection is allowed, it would not be sufficient to file only one single revocation action for the invalidation of the entire EPUE of the competitor. In order to gain a complete freedom to operate, it will still be necessary to file an action also against the relevant national patent.

[797] See Chapter II, D.

to keep only few designations despite an initially geographically broad designations, thereby saving renewal fees. However, this flexibility does not apply to a EPUE which is a 'all or nothing' option and therefore potentially not particularly attractive for many forward-thinking patentees and especially for the ones active in sectors in which the pace of the evolution of the technology is very fast. For these reasons it follows that a great number of start-up patentees may well not opt for a unitary patent protection as a mean of protection of their inventions.

Thirdly, among the start-up patentees that will opt for unitary patent protection or for a non-opted-out European patent, it is also very unlikely that the majority of them will be active in the role of plaintiffs. This for very similar reasons to the ones identified above, namely, because of financial constraints and because of the complexities, risks and uncertainties related to the use of the new system. Hence, it is arguable that start-ups would not be so prone to actively enforce their patents in the context of the envisaged unified patent litigation arena, but rather to seek for settlements or find alternative ways to avoid litigation.

From the analyses it follows that a great part of the population of high-tech start-ups probably will not own any EPUEs or non-opted-out European patents, and the ones that will, in a great number of cases, may well not proceed with its enforcement.

The fact that a great number of start-ups will not use the unitary patent system as active 'players of the game' does not mean that the implementation of such a system will not have any impact on their innovative activities. On the contrary, they also deserve attention in their more likely role as passive users of the system, namely, in the position of defendants. Thus, it follows that they are at a greater risk of suffering from the imbalances analysed in Chapter II, which have proven to be particularly cumbersome for defendants. Furthermore, it has been demonstrated how the analysed imbalances, which increase the potential of risk for litigants, favour – either directly or indirectly – more resourceful and established businesses. The main consequence of this asymmetry is that such market players may well have a privileged position not only during the normal course of action, but also when these established incumbents exploit their power through the use of abusive behaviours. The risk of a potential increase of abusive practises is therefore real and its analysis deserves particular attention.

II. The Influence of the Imbalances on Start-Ups – The Case of Patent Trolls in Particular

The present Section analyses to what extent the noted imbalances and other factors may contribute to an increase in patent troll activity and which are the possible safeguards both already in place and to be potentially implemented. For the purpose of clarification, it is however

important to first define the concept of patent trolls as well as their allegedly respective behaviour.

1. Patent Trolls and Patent Trolling

As regards patent trolls, it is important to distinguish between different categories associated with that phenomenon, namely, broadly speaking, patent intermediaries (PIs), non-practicing entities (NPEs) and patent assertion entities (PAEs). The distinction helps to better understand the context in which patent trolling occurs. In addition, it will become clear that the activities of these entities cannot generally be categorised as potentially abusive or opportunistic.[798]

1.1. 'Negative' Description – The Origins and Link with PIs, NPEs and PAEs

The category of PIs can encompass both brokers and defensive and offensive aggregators. In particular, brokers or agents are companies who facilitate patent transactions by connecting sellers and potential buyers.[799] In general terms, patent aggregation relates to activities of patent acquisition, carried out with the aim to bring the rights under the control of a single entity.[800] On one hand, 'defensive' patent aggregators acquire the rights so that they cannot be licensed to others in an exclusive manner.[801] On the other hand, 'offensive' patent aggregators obtain patent portfolios mainly with the aim of getting revenues through licensing fees and assertion against alleged infringers, thereby mainly monetising patents rather than expanding their 'freedom to operate'.[802]

The term NPEs refers to entities that do not use their patent portfolio to sell or produce products. They can be established companies, university research laboratories, institutions, but also start-ups that are not yet ready to practice their own invention, individuals and other firms, such as PAEs.[803] In particular, PAEs are actors that mainly use their patents in order to obtain licensing fees or damages deriving from litigation or settlement agreements. The patents in their portfolio

[798] The following brief analysis serves only the purposes of providing a better understanding of the issue at hand.
[799] Allen W. Wang, 'Rise of the Patent Intermediaries' (2010) 25 Berkeley Technology Law Journal 151, 167–169.
[800] And thanks to this control, they have 'the right to decide which party gets access to the patents and under what terms'. See EPO Economic and Scientific Advisory Board, 2015 Statement — Patent Aggregation and its Impact on Competition and Innovation Policy (2015) 5.
[801] Justin Orr, 'Patent Aggregation: Models, Harms, and the Limited Role of Antitrust' (2013) 28 Berkeley Technology Law Journal 525, 535 and 544–546.
[802] Allen W. Wang, 'Rise of the patent intermediaries' (2010) 25 Berkeley Technology Law Journal 151, 177; Justin R. Orr, 'Patent Aggregation: Models, Harms, and the Limited Role of Antitrust' (2013) 28 Berkeley Technology Law Journal 525, 535.
[803] Frauke Rüther, *Patent Aggregating Companies: Their Strategies, Activities and Options for Producing Companies* (Springer Gabler, 2013) 41; Colleen V. Chien, 'Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents' (2009) 87 North Carolina Law Review 1571, 1577–1578; Colleen V. Chien, 'From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System' (2010) 62 Hastings Law Journal 297, 332; Christopher A. Cotropia, Jay Kesan and David Schwartz, 'Unpacking Patent Assertion Entities (PAEs)' (2014) 99 Minnesota Law Review 649.

are mainly acquired from third parties, which can still be either existing, or they have gone bankrupt.[804] In some rarer cases the patents are applied for by and granted directly to PAEs.

These categories of patent holders will often overlap in individual cases. While NPEs can also be offensive or defensive aggregators, PAEs usually engage in offensive practices and thus also often fall within the broader category of offensive NPE aggregators.[805] It thus derives that PAEs are part of the broader category of NPEs.

Moreover, NPEs do not behave opportunistically,[806] but when they use their patent rights in such a manner, they are often labelled as 'patent trolls'.[807]

1.2. 'Positive' Description – Characteristics and Definition

The term 'patent troll' is usually not used in a neutral context and does instead more often have a negative connotation. Moreover, the conduct of such entities is often addressed to as an 'abuse' of the patent right.[808] However, merely relying on the categorisation of nature of a patent holder may result in flawed and incorrect conclusions.[809] It is instead fundamental to examine the specific allegedly opportunistic strategy. It is therefore necessary to examine the 'troll behaviour' in order to decide whether such behaviour should be accepted in the light of the functions and purposes of patent law.

As anticipated above, trolls usually do not engage in research and development of new technology and products, but typically acquire intellectual property rights with the aim of

[804] Colleen V. Chien, 'From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System' (2010) 62 Hastings Law Journal 297, 300; Stefania Fusco, 'Markets and Patents Enforcement: A Comparative Investigation of Non-Practicing Entities in the United States and Europe' (2014) 20 Michigan Telecommunications and Technology Law Review 439, 443–444.

[805] Justin R. Orr, 'Patent Aggregation' (2013) 28 Berkeley Technology Law Journal 525, 535. In this regard, it is nevertheless important to note that NPEs and PAEs are not always patent aggregators. This is indeed not the case neither for universities or start-ups NPEs nor for PAEs that for example assert the patents originating from one company.

[806] In general, 'opportunistic behaviour' is a term often used in the literature. In the context of the present dissertation the term should be understood as 'dysfunctional behaviour', meaning the use of patents that reduces the innovation trade-off. In particular, the dysfunctional behavior can reduce the incentives to innovate of start-ups defendants without increasing the incentives to innovate of start-ups plaintiffs. In this context, it is however relevant to bear in mind that the possibility of selling patents to a PAE may also have positive effects on the innovation of the initial/original innovator.

[807] Colleen V. Chien, 'From Arms Race to Marketplace' (2010) 62 Hastings Law Journal 297, 326. In the university context see Tim Pohlmann and Marieke Opitz, 'Typology of the patent troll business' (2013) 43(2) *R&D Management* 103, 105; Marc A. Lemley, 'Are Universities Patent Trolls?' (2007) 18 Fordham Intellectual Property, Media & Entertainment Law Journal 611, 629; Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 *European Intellectual Property Review* 163, 165.

[808] Christoph Ann, 'Patent Trolls — Menace or Myth?' in Wolrad Prinz zu Waldeck und Pyrmont, Martin Adelmann, Robert Brauneis, Josef Drexl and Ralph Nack (eds), *Patents and Technological Progress in a Globalized World* (Springer 2009) 355, 361; Frauke Rüther, *Patent Aggregating Companies* (Springer Gabler, 2013) 42.

[809] David Schwartz and Jay Kesan, 'Analysing the Role of Non-Practicing Entities in the Patent System' (2014) 99 Cornell Law Review 425, 445.

maximising revenue from litigation, settlements and licensing agreements. The targeted patents may be both patents the utility of which might have been neglected although they are strategically important and patents that are part of a larger portfolio of patents the validity of which might be questionable.[810] The relevant patents are then enforced against producers and manufacturers and other alleged infringers.[811] The presence of opportunistic conduct is specifically a concern in a patent hold-up situation, namely, where the defendant has already made considerable investments in the implementation of the patent and, consequently, ends up in a lock-in situation, allowing the patent holder to extract excessive royalty rates by seeking injunctive relief. This asymmetry between the troll and the implementer occurs because the former are non-practicing entities and, therefore, do not need to be afraid of counterclaims for infringement and will not be in need of cross-licensing.[812] As a consequence, the targeted companies tend to avoid expensive and risky litigation and thus may often surrender to – unfair and excessive – settlement agreements, provided that the law grants automatic injunctions as a relief for infringement.[813]

The patent troll phenomenon is the object of an intensive debate among scholars. On the one hand, some claim that trolls facilitate innovation rather than hindering it. They are deemed to foster innovation by providing early-stage inventors with the capital they may well be lacking and thus with incentives for future research and development. According to this view, the use of the term 'patent troll' would just be a misnomer for mere intermediaries.[814] Accordingly, such entities would only apply a fully justifiable business model based on the perception of patent rights as an economic asset that deserves to be monetised.[815] On the other hand, however, trolls are deemed to distort innovation, thereby potentially restricting competition causing consumer

[810] In the majority of cases, the PAEs seek large portfolio of patents, whereby many patents will be invalid. But when litigating before court, PAEs will only rely on a high-quality patent to reduce the risk of losing the case.

[811] Reto M. Hilty, 'Keynote' in Kung-Chung Liu and Reto M. Hilty (eds), *The Enforcement of Patents* (Kluwer, 2012) 9, 25; Elizabeth D. Ferrill, 'Patent Investment Trusts: Let's Build a PIT to Catch the Patent Trolls' (2004–2005) 6 North Carolina Journal of Law & Technology 367, 376; Julien Pénin, 'Strategic uses of patents in markets for technology: A story of fabless firms, brokers and trolls' (2012) 84 Journal of Economic Behavior & Organization 633, 635.

[812] Christopher A. Cotropia, Jay Kesan and David Schwartz, 'Unpacking Patent Assertion Entities (PAEs)' (2014) 99 Minnesota Law Review 649, 650; Justin R. Orr, 'Patent Aggregation' (2013) 28(4) Berkeley Technology Law Journal 525, 535; Frauke Rüther, *Patent Aggregating Companies* (Springer Gabler, 2013) 42. Of course, it must be noted that opportunistic behaviour will not be limited to PAE or NPE and that a hold-up situation may always arise where the defendant does not hold relevant patents.

[813] As explained in Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 166.

[814] Deli Yang, 'Patent Trolls: Legit Enforcers or Harrassers?' (2012) 17 Journal of Intellectual Property Rights 573, 575. For an overview of trolls' (dis)advantages, see Sannu K. Shrestha, 'Trolls or market-makers? An empirical analysis of nonpracticing entities' (2010) 110(1) Columbia Law Review 114.

[815] Wolfgang von Meibom and Ralph Nack, 'Patents without Injunctions? — Trolls, Hold-ups, Ambushes, and Other Patent Warfare' in Wolrad Prinz zu Waldeck und Pyrmont, Martin Adelmann, Robert Brauneis, Josef Drexl and Ralf Nack (eds), *Patents and Technological Progress in a Globalized World* (Springer, 2009) 495, 503.

harm, since high licensing fees are passed on to consumers.[816] It is argued that unfounded claims of trolls harm the patent law system, block market entry of manufacturers with innovation potential but lower financial resources, often leading them to bankruptcy due to the high and disproportionate licensing fees, hence damaging the interest of alleged infringers and the public.[817] Furthermore, they are criticised to use the patent system and litigation in an unethical manner, and as a mere bargaining instrument when no other possible compromise can be found.[818]

In light of the above, for the sake of clarity and simplification, in view of the purposes of the present Section, the term 'patent troll' will not relate only to the identity and nature of those market players, but will mainly refer to the following strategy: first, seeking injunctive relief in an opportunistic manner against alleged infringers operative in the market and, secondly, a 'wait-and-sue' approach aimed at targeting an alleged infringer by threatening litigation and demanding disproportionate licensing fees, once the latter have made considerable investments and started to commercialise the new technology.[819]

2. Trolls and the UPC

Whether the establishment of the UPC would foster and incentivise patent trolling behaviour has been and still is an open question lively debated among scholars and stakeholders. It is argued that some of the analysed characteristics of the UPC construction and their implications may well encourage troll activities.[820] In particular, such behaviour would be facilitated by the wide territorial scope, by the possibility to sue before a single international court, by the rules on competence and jurisdiction and related forum shopping opportunities and especially by the possibility to obtain EU-wide injunctions.[821] By potentially encouraging trolling behaviour, those characteristics may impair the overarching objective of improving 'the enforcement of patents and the defence against unfounded claims and patents which should be revoked'.[822] Even at industry level, several UPC rules have been criticised by a group of established firms in an open

[816] Stefania Fusco, 'Markets and Patents Enforcement' (2014) 20 Michigan Telecommunications and Technology Law Review 439, 448.
[817] Sannu K. Shrestha, 'Trolls or market-makers?' (2010) 110(1) Columbia Law Review 114, 119; Michael J. Meurer, 'Controlling opportunistic and anti-competitive intellectual property litigation' (2003) 44 Boston College Law Review 509, 519.
[818] Tim Pohlmann and Marieke Opitz, 'Typology of the patent troll business' (2013) 43(2) R&D Management 103, 104 and 117;
[819] As indicated in Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 166.
[820] EPO Economic and Scientific Advisory Board, Report — Workshop on Patent Aggregation and its Impact on Competition and Innovation Policy (Munich, 25 November 2014) 10.
[821] See, for example, Francesco Macchetta, 'A unitary patent system for Europe: cui prodest?' in Florent Gevers and Emmanuel Cornu (eds), *The Future Prospects for Intellectual Property in the EU: 2012–2022* (Bruylant, 2011) 174, 183; Milosz Malaga, 'The European Patent with Unitary Effect: Incentive to Dominate?' (2014) 45 IIC 621, 643.
[822] Preamble of the UPC Agreement.

letter to European institutions, expressing the concern that injunction rules will incentivise abusive behaviour, and that such rules would be used by PAEs to target operating companies that may be disrupted, thereby harming innovation.[823] Others instead claim that the UPC rules provide for strong structural and procedural safeguards to prevent and tackle the issues at hand.[824]

Despite of these conflicting opinions, it is and will remain uncertain whether the establishment of the UPC will result in an increase of unfounded claims or abusive behaviours. Yet the risk is real, and the system must be equipped to prevent and tackle such a potential outcome. It is therefore important to analyse which are and which could be possible future safeguards enshrined in the UPC structure and rules.

2.1. Existing Procedural and Structural Safeguards within the UPC system

Some scholars argue that the use of the abuse of rights principle would be the most suited mechanism to tackle patent troll behaviour in the context of the UPC.[825] This part addresses the potential already existing safeguards and briefly analyses the corrective mechanisms categorised and individuated in the literature, with a particular focus on the abuse of rights defence. It then explains the reasons why the latter mechanism may be suited to solve this specific issue, but if implemented alone, is however not sufficient to address and solve all structural imbalances at the centre of the analysis of this dissertation.

Some practitioners have highlighted the importance of existing safeguards.[826] Among procedural safeguards they mention '(a) the fact that the losing party has to pay attorney fees, (b) limitations on the joining of multiple defendants, (c) discretionary injunctions, (d) limited discovery, and (e) a rule of proportionality and fairness.'[827] According to this position, structural safeguards relate to the presence of judges who are trained and appointed pursuant to a specific procedure.

As regards the procedural safeguards, it hast to be noted how Article 69 UPCA may discourage troll behaviour through the introduction of a scheme of payment of attorney fees, which is similar to the one adopted in the US.[828] Furthermore, also Article 33 UPCA, which restricts the availability

[823] Open Letter to European Institutions (26 September 2013) 2, https://docs.google.com/file/d/0Bw8Krj_Q8UaEd3U1dUJ3SVp6LTQ/edit?pref=2&pli=1 (accessed 3 May 2020).
[824] The arguably existing safeguards and other potential legal instruments which could serve such a purpose will be briefly analysed in the following Sub-section.
[825] See Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 163–172.
[826] Edward Kelly and Christopher Carroll, 'How The EU Patent Court Will Protect Against Trolls' (11 March 2013), Law360, available at: http://www.law360.com/articles/418482/how-the-eu-patent-court-will-protect-against-trolls (accessed 15 April 2020).
[827] Ibid.
[828] Art. 69 (1) UPC reads:

of multiple defendants actions, and Article 63 UPCA, which subordinates the grant of an injunction to the Court's discretion, are deemed to discourage trolls behaviour, since trolls would rather prefer to target multiple defendants in a single action and to get an injunction automatically in case of an infringement.[829] In addition, in light of Article 53 UPCA,[830] which provides for a non-exhaustive list of possible means of evidence, the absence of specific and strict requirements for production of evidence allows to avoid too high costs for the parties. Higher costs, which would instead be the result of an ample discovery and required evidence production would on the contrary encourage even more the parties to settle the case out of court, thereby fostering trolling behaviour.

All these procedural rules of safeguard could be brought together under the overarching dome of fairness and proportionality enshrined in Article 42 UPCA, which establishes that:

> (1) The Court shall deal with litigation in ways which are proportionate to the importance and complexity thereof.
>
> (2) The Court shall ensure that the rules, procedures and remedies provided for in this Agreement and in the Statute are used in a fair and equitable manner and do not distort competition.

> Reasonable and proportionate legal costs and other expenses incurred by the successful party shall, as a general rule, be borne by the unsuccessful party, unless equity requires otherwise, up to a ceiling set in accordance with the Rules of Procedure.

In the USA the "Shield Act" of 2013 sets a similar provision on the recovery of litigation costs for high-tech innovators. See in this regard Saving High-tech Innovators from Egregious Legal Disputes Act of 2013, available at http://www.gpo.gov/fdsys/pkg/BILLS-113hr845ih/pdf/BILLS-113hr845ih.pdf, (accessed 3 May 2020).

[829] For an analysis of the details and implications of those provisions refer to Chapter 2, Section C. IV. 2.4.

[830] Art 53 UPCA reads:

> (1) In proceedings before the Court, the means of giving or obtaining evidence shall include in particular the following:
> (a) hearing the parties;
> (b) requests for information;
> (c) production of documents;
> (d) hearing witnesses;
> (e) opinions by experts;
> (f) inspection;
> (g) comparative tests or experiments;
> (h) sworn statements in writing (affidavits).
> (2) The Rules of Procedure shall govern the procedure for taking such evidence. Questioning of witnesses and experts shall be under the control of the Court and be limited to what is necessary.

In contrast, the existing structural safeguards relate to the appointment of judges, which could provide for better protection against trolling behaviour in comparison to a jury system.[831] This would be so thanks to both the procedure of selecting the judges, whose appointment can be renewed for a period of six years by the Administrative Committee, and their technical expertise. It is indeed possible to argue that professional highly specialised judges would be less inclined to favour abusive behaviours and would be better prepared to tackle them. At the same time one can also claim that it is unlikely that judges who would be too permissive with potentially abusive behaviours will be appointed again.[832] The latter in particular is however a double-edged sword, since, especially at the beginning of its existence, the UPC would need to attract a sufficient number of cases, and the judges may therefore tend to become too patentee-friendly to increase the attractiveness of the system. Hence, instead of trusting the appointment procedures and the quality of judges, it appears wiser to implement additional safeguards against a potential overly patentee-friendly attitude of judges.

Certainly, the extent at which these mentioned safeguards would be effective against abusive activities can be properly understood only once that the system becomes operational. Although all of the abovementioned elements are potentially helpful to contain trolling, all the rules are subject to interpretation and to a certain degree of discretion and the effectivity with which they will be used and the direction that will be followed will depend on several underlying interests and mechanisms that are impossible to fully predict with certainty.

2.2. Other Available Corrective Mechanisms

Therefore, it is important to also explore other available corrective mechanisms that can serve the purpose of discouraging possible abusive behaviour. The literature divides them in three different categories, which will be briefly analysed hereinafter.[833]

First, the literature hints at formal correction mechanisms within the patent law framework and relates to exceptions and limitations, such as compulsory licences and the limited duration of patent rights. These formal mechanisms may well play an important role in balancing the different interests. However, the application of this sort of formal corrections also implies that the entitled person acts without having a proper right to do so. Moreover, they often do not appear to be appropriate in relation to the patent troll issue. For example, compulsory licences are only granted rarely and can therefore not be seen as a solution in the cases in which the

[831] Edward Kelly and Christopher Carroll, 'How The EU Patent Court Will Protect Against Trolls' (11 March 2013), Law360, http://www.law360.com/articles/418482/how-the-eu-patent-court-will-protect-against-trolls (accessed 15 April 2020).
[832] Ibid.
[833] See Gertrui Van Overwalle, Marie Christine Janssens and Amandine Léonard, 'Abuse of Rights in Intellectual Property', Leuven, Centre for Intellectual Property Rights, 2014 (a presentation given on 24 March, 2014 by Amandine Léonard) as cited in Richard Steppe, 'Abuse of Rights and Patent Trolling: Amicus Certus in Re Incerta?' (2016-2017) 3 Jura Falconis Jg. 314, 319.

patent holder acts with an authentic right, as, to some extent, it is deemed to occur in patent troll cases.[834]

Secondly, some alternative correction mechanisms of external nature can be found in competition law,[835] in the provisions on fundamental rights[836] and the rules on the free movement of goods.[837] Competition law provisions may however represent only a partial and limited remedy. Indeed, even if in the case of abuses of dominant position, competition law can be effectively applied to patent troll activities,[838] it may well in any case not be sufficient to tackle trolling behaviour in a comprehensive manner. Indeed, first of all, it is neither the primary intention of patent trolls nor the necessary effect of trolling to exclude competitors from the market. Rather their main aim and effect is instead to request damages or force settlements or licensing agreements.[839] Secondly, trolls who do not exercise market power would simply not be covered by Article 102 TFEU.[840] Thirdly, it may often occur that trolls and alleged infringers are not in direct competition with each other.[841] Similarly, also relying on human rights, such as for example the right as creator and inventor of the intellectual property right or the idea that intellectual property law should not go against social, cultural and economic human rights,[842] or raising the provisions of the Treaty on the free movement of goods, may also solve only some of the patent troll issues.

2.3. The Abuse of Rights Safeguard and Its Limitations

Against the backdrop of the preceding analysis of the existing safeguards, the application of the good faith principle and the general principle of abuse of rights as a potentially available

[834] Christoph Ann, 'Patent Trolls – Menace or Myth?' in Wolrad Prinz zu Waldeck und Pyrmont, Martin Adelmann, Robert Brauneis, Josef Drexl and Ralph Nack (eds), *Patents and Technological Progress in a Globalized World* (Springer, 2009) 355, 361; Annette Kur and Thomas Dreier, *European Intellectual Property Law* (Edward Elgar Publishing, 2019) 335. It is claimed that the exercise of a right is *per definitionem* in accordance with the law. If that was not the case, there would be no 'right', and it is thus evident that 'abuse of rights' essentially refers to nothing more than an 'excess of rights'. For a more detailed discussion on the abuse of rights concept see below sub-section 2.3.

[835] A relevant example of the connection between intellectual property and competition law can be seen in the Huawei case (CJEU C-170/13 *Huawei* ECLI:EU:C:2015:477). For a more detailed explanation see above Chapter 2, Section C. IV. 2.2.

[836] See, for example, Article 16 of the Charter of Fundamental Rights of the European Union, establishing that '[t]he freedom to conduct a business in accordance with Union law and national laws and practices is recognised'.

[837] Inge Govaere, *The use and abuse of intellectual property rights in E.C. Law* (Sweet & Maxwell, 1996) 71-101.

[838] Miłosz Malaga, 'The European Patent with Unitary Effect: Incentive to Dominate?' (2014) 45 IIC 621, 638.

[839] See above Section II.1.

[840] Mariateresa Maggiolino and Maria Lillà Montagnani, 'Astrazeneca's Abuse of IPR-Related Procedures: A Hypothesis of Anti-Trust Offence, Abuse of Rights, and IPR Misuse' (2011) 34 World Competition 245, 256.

[841] Christoph Ann, 'Patent Trolls – Menace or Myth?' in Wolrad Prinz zu Waldeck und Pyrmont, Martin Adelmann, Robert Brauneis, Josef Drexl and Ralph Nack (eds), *Patents and Technological Progress in a Globalized World* (Springer, 2009) 355, 362; Oleg Milchenko, 'Contemporary Anti-Competitive Practices of Patents Usage', (2013) 8(3) Journal of International Commercial Law and Technology 190, 191.

[842] See Sub-Commission on Human Rights, 'Intellectual Property Rights and Human Rights' (Resolution 2000/7) 3, available at http://bit.ly/1OSyd0d (accessed 12 April 2020).

correction mechanism deserve particular attention.[843] Considering that the latter has been identified as the most suited corrective mechanism,[844] which can be used in the context of the UPC, its functioning and implications will be briefly analysed hereafter. This will help to understand its potential benefits but also its limitations in relation to the issues and imbalances at the core of this dissertation.

The abuse of rights principle is deemed to be the most suited corrective mechanism to address patent trolling and it is claimed that defendants in infringement actions, even before the UPC, could ask to establish whether the patent holder is enforcing her rights in an abusive manner, along the lines of the principle of abuse of rights developed by the CJEU.[845]

2.3.1. Reference to the Concept of Abuse of Rights in Different National Systems and Applicability to Patent Rights

It is not possible to identify a commonly accepted definition of abuse, since the meaning of the concept, as it exists in several different legal systems, varies considerably.[846] Nevertheless, it is possible to identify some common lines of a principle that aims at eliminating a possible excess of enforcement of certain rights, also taking into account the interests of third parties and society at large.[847]

The notion of 'subjective rights' usually refers to rights, which confer to the entitled person the power to act in a specific manner or to obtain a certain benefit. Therefore, the subjective rights concept also applies to exclusive IP rights, including patent rights. Furthermore, the abuse of rights principle is also deemed to be applicable to patent rights, considering that the most suited applications of the abuse of rights concern ownership rights and, thus, also ownership of intangible assets such as patents.[848]

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[843] Pierre Schammo, 'Comments on Abuse of Rights in EU Law' in Rita de La Feria and Stefan Vogenauer (eds), *Prohibition of Abuse of Law* (Hart Publishing, 2011) 193.

[844] Richard Steppe and Amandine Léonard 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 172.

[845] Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 172.

[846] For example, Swiss Civil Code Art.2; Spanish Civil Code Art.7.2; Dutch Civil Code Art. 3.13; German Civil Code §§ 242 and 226. The principle of abuse of rights exists also in France and Belgium on the basis of Art. 1240 French Civil Code and Art.1382 Belgian Civil Codes which concern tort liability.

[847] By way of example, according to Brown, abuse can be defined as 'the exercise of a person's rights in a manner which is unreasonable, with consequent harm to another, whether there was an intent to harm or mere carelessness or indifference as to harm resulting'. Neville L. Brown, 'Is there a General Principle of Abuse of Rights in European Community Law?' in Deirdre Curtin and Ton Heukels (eds), *Institutional Dynamics of European Integration. Essays in Honour of Henry G. Schermers* (Martinus Nijhoff Publishers, 1994) 511, 515.

[848] Michelangelo Temmerman, 'The Legal Notion of Abuse of Patent Rights', NCCR Trade Regulation Working Papers No.23 (2011) 13; Mireille Buydens, *Droit des brevets d'invention et protection du savoir-faire* (Larcier, 1999) 238; Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general

In practice, judges have already used the abuse of rights principle for the purpose of controlling the exercise of intellectual property rights. In the Netherlands, scholars perceive the abuse of rights concept as an instrument to delimit the exercise of intellectual property rights.[849] An abusive use and enforcement of patents has been found in Belgian and French case law.[850] Given the absence of a specific provision for abuse under Belgian or French patent law, courts rely on Article 1382 of the respective civil codes to hold patent holders liable for abuse. First, patent holders are found liable when the court individuates the presence of an abusive scheme, encompassing a combination of several misconducts. In particular, in case of a misconduct including the knowledge of the patent holder concerning the invalidity of a patent and/or the absence of infringement, or concerning other information crucial for the court's assessment, the patent holder's intention to harm and objective unfair competition practices are the main actions which lead courts to hold that a patent holder has developed an abusive scheme. In addition, the victim of abuse must prove the harm suffered, which may include commercial harm, reputational harm and additional costs of litigation. Moreover, the victim of abuse bears the burden to demonstrate that the actual harm suffered derives from the abusive exercise of the rights by the patent holder.[851]

2.3.2. The General Abuse of Rights Concept of EU Law

Furthermore, the CJEU has developed a uniform concept of abuse at the EU level, including different types of practices.[852] In particular, an abuse takes place when Union law is used to circumvent a national rule; when right holders act with fraud or where the exercise of a right leads to an unreasonable or unfair result, even if the result of the application of the law would be correct from a formal point of view.[853] The CJEU has therefore developed a test for abuse that includes an objective and subjective part. This EU concept can be of guidance for national courts which will then have to assess, following national rules of evidence, the existence of abusive practices.

The objective element is fulfilled when, from a combination of objective facts, it is evident that, although the conditions set by EU rules have been formally observed, the purpose of the rule has

principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 169.

[849] Lucie Guibault, *Copyright Limitations and Contracts: An Analysis of the Contractual Overridability of Limitations on Copyright* (Kluwer Law International, 2002) 281–283.

[850] Amandine Leonard, '"Abuse of Rights" in Belgian and French Patent Law — A Case Law Analysis' (2016) 7(1) Journal of Intellectual Property, Information Technology and Electronic Commerce Law 30, 36-47.

[851] For a more thorough analysis of the mentioned conditions and related case law see Amandine Leonard, '"Abuse of Rights" in Belgian and French Patent Law — A Case Law Analysis' (2016) 7(1) Journal of Intellectual Property, Information Technology and Electronic Commerce Law 30, 36-48.

[852] See, for instance, Case C-255/02 *Halifax* ECLI:EU:C:2006:121; Case 94/05 *Emsland-Stärke* ECLI:EU:C:2000:695.

[853] Anders Kjellgren, 'On the Border of Abuse — The jurisprudence of the European Court of Justice on circumvention, fraud and other misuses of Community law' (2000) 11(3) European Business Law Review 179, 179–180.

not been met. To satisfy this objective part, it is therefore necessary to use the teleological interpretation method to understand the objective and purpose of the specific norm.[854] In contrast, the subjective part of the test requires that, from a number of objective circumstances, it is evident that the main aim of the given action is to obtain an improper advantage from Union rules through the use of 'artificial arrangements'.[855] Those occur for example when there is absence of good faith or where additional costs could have been avoided.[856] In a certain way, therefore, the CJEU identifies subjective elements as good faith and the right holders' intention, by referring to objective factors, in order to assess whether a specific activity falls within the subjective element of the test.

Along the lines of the development of this EU test, the CJEU referred to the prohibition of abuse of rights as a general principle of EU law.[857] This approach is supported by a great part of the scholarship.[858] However, the literature also expresses doubts as regards the qualification as a principle and observes that the abuse of rights principle only defines the scope of rights on the basis of EU provisions and does not work as a corrective tool of national and EU legislation.[859]

2.3.3. The Abuse of Rights Principle and Unitary Patent Protection

Scholars argue that the EU test and the underlying general principle of EU law has also been applied in the context of the unitary patent package.[860] Indeed, even if the provisions of the EPUE Reg. and of the UPCA do not include any explicit rule against a possible abuse from patent holders, already in the Preamble of the UPCA, the primacy of Union law is established.[861] Moreover, both Article 20 and 24 UPCA require the application and respect of the primacy of

[854] Stefan Vogenauer, 'The Prohibition of Abuse of Law: An Emerging General Principle of EU Law' in Rita de la Feria and Stefan Vogenauer (eds), *Prohibition of Abuse of Law* (Hart Publishing, 2011) 530, 532; Pierre Schammo, 'Arbitrage and Abuse of Rights in the EC Legal System' (2008) 14 European Law Journal 351, 359.

[855] See, for instance, Case C-255/02 *Halifax* ECLI:EU:C:2006:121, para 75; Case 94/05 *Emsland-Stärke* ECLI:EU:C:2000:695, para 53. The concept of 'objective intentions' has been implicitly accepted in *Emsland-Stärke*, but it was explicitly recognised only in Halifax ('from a number of objective factors'). See also Annekatrien 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 1121, 1136.

[856] See, e.g., Case C-94/05 *Emsland-Stärke* ECLI:EU:C:2000:695, para 51; Case C-255/02 *Halifax* ECLI:EU:C:2006:121, para 69. Stefan Vogenauer, 'The Prohibition of Abuse of Law: An Emerging General Principle of EU Law' in Rita de la Feria and Stefan Vogenauer (eds), *Prohibition of Abuse of Law* (Hart Publishing, 2011) 530, 535; Alexandre Sayde, *Abuse of EU Law and Regulation of the Internal Market* (Hart Publishing, 2014) 83–93.

[857] In *Halifax*, the Court stated that 'principle of prohibiting abusive practices' applied to VAT law; Case C-255/02 *Halifax* ECLI:EU:C:2006:121, para 74. See also Case C-321/05 *Kofoed* ECLI:EU:C:2007:408, para 38, characterising the abuse of rights doctrine as a 'general Community law principle'.

[858] See, for example, Rita de la Feria, 'Prohibition of abuse of (Community) law: the creation of a new general principle of EC law through tax' (2008) 45 Common Market Law Review 395, 433–439; Annekatrien Lenaerts, 'The General Principle of the Prohibition of Abuse of Rights' (2010) 18 European Review of Private Law 1121, 1138–1139;

[859] Anthony Arnull, 'What is a General Principle of EU Law?' in Rita de la Feria and Stefan Vogenauer (eds), *Prohibition of Abuse of Law* (Hart Publishing, 2011) 7, 20–23.

[860] Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 170.

[861] See Preamble to UPC Agreement, Recitals 8, 12 and 13.

Union law.[862] This encompasses the TUE, the TFUE, the Charter of Fundamental Rights of the EU, the secondary legal instruments of EU law, but also the general principles of Union law that have been recognised by the CJEU.[863] Thus, alleged infringers should have the right to request the assessment of whether patent holders are enforcing their patent rights in an abusive manner on the basis of the abuse of rights doctrine developed by the CJEU.

Accordingly, it is argued that abusive behaviour of patent trolls can be addressed before the UPC under the general abuse of rights doctrine of EU law, because patent trolls may well fulfil both the objective and subjective part of the test as devised by the CJEU.[864] Nevertheless, it is important to note that some doubts exist as regards the application of the abuse-of-rights doctrine as a general principle of EU law. In fact, the rights that would fall under the abuse of rights doctrine encompass the right to claim an injunction, regulated by the UPCA, and which has been considered to be national law.[865] However, even if the provisions of the UPCA are not EU law and this may be problematic for the application of the EU doctrine, it is possible to argue that the presence of an EPUE is sufficient for its application.

As regards the objective part, relating to a conflict of the result of the formal application of the law with the purpose of the provisions, it is necessary to recall the main aims of the unitary patent package. Indeed, the purposes and aims of unitary patent protection arise already from the EPUE Reg. In particular, the Preamble of the EPUE Reg. mentions the aim of fostering 'scientific and technological advances and the functioning of the internal market by making access to the patent system easier, less costly and legally secure'.[866] Moreover, the Preamble of the UPCA also recalls the need to safeguard 'small and medium sized enterprises [having] difficulties to enforce their patents and to defend themselves against unfounded claims and claims relating to patents which should be revoked'.[867] With these purposes in mind, it must be noted how patent troll activities can render it more difficult for users to purchase or obtain a licence for patents that is needed, can block market access, can increase transaction costs by requiring high-priced licensing agreements thereby potentially causing bankruptcy and can create confusion by enforcing patents of questionable validity. As a consequence, it appears that their behaviour may well pose the risk of rendering the system more complicated and costlier and reducing legal certainty.[868]

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[862] The articles are entitled 'Sources of law and substantive law' and 'The primacy of Union law, liability and responsibility of the Contracting Member States', respectively.

[863] See Preamble to UPC Agreement, Recital 13.

[864] Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 171.

[865] CJEU Case 146/13 *Kingdom of Spain v European Parliament and Council of the European Union* ECLI:EU:C:2015:298, paras 46, 47.

[866] Preamble to the Unitary Patent Regulation, Recital 4.

[867] Preamble to the UPC Agreement, Recital 2.

[868] Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 171.

In addition, patent troll activities may cause particular harm to small firms such as start-ups which, although more rarely than larger firms, are often the target of abusive actions, due to their difficulties in defending themselves and consequently their tendency to settle.[869] These types of lawsuits may also cause the bankruptcy and termination of the entire company. Therefore, by increasing the difficulties for firms in enforcing and defending their patents and thus departing from the main purposes of the establishment of a system of unified patent protection, patent trolling behaviour should be deemed to potentially fall within the objective part of the test.

2.3.4. Criticalities, Advantages and Limitations

In addition, it is argued that also the conditions to fulfil the second, subjective part of the test, are also met.[870] For that, it is required that the essential aim of the activities is to obtain a benefit from the application of legal provisions and that the benefit is the result of an artificial arrangements created in order to gain the advantage. This is deemed to be fulfilled in this case, both because the purpose of patent troll behaviour is to obtain an economic benefit from the enforcement of patents and from the resulting lock-in and patent hold-up situations and also because patent trolls do actually artificially arrange the advantageous conditions to obtain their benefits. Indeed, trolls in an artificial manner adopt a 'wait and sue' approach towards alleged infringers to subsequently force them in a lock-in situation. Thus, the purpose and benefits deriving from those strategic arrangements encompass 'objective factors' on which the assessment of the subjective part of the test can be based.[871]

An abuse of rights can therefore also be claimed in proceedings before the UPC. However, its application poses several issues. Indeed, the reliance on such a principle may cause an excessive intervention by the courts which could tend to substitute their opinions for the rights of the patent holder, thereby potentially increasing the likelihood of discretionary decisions and jurisprudential legal uncertainty.[872] In addition, it may not only restrict the exercise of such rights but also cause an overall denial of rights.[873]

As a consequence, it is therefore often claimed that legal certainty would rather be better safeguarded by a specifically defined legislative intervention, rather than through an

[869] See among others Colleen Chien, 'Startups and Patent Trolls', Santa Clara Legal Studies Research Paper Series No. 09/12 (September 2012) 13.
[870] Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 171.
[871] Ibid.
[872] Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 168.
[873] Gianluigi Palombella, 'The Abuse of Rights and the Rule of Law' in András Sajó (ed.), *Abuse: The Dark Side of Fundamental Rights* (Eleven International Publishing, 2006) 5, 9.

unforeseeable discretionary decision of judges in the framework of litigation.[874] Conversely, it is argued that the advantage of the abuse of rights principle is exactly its flexibility, which allows to overcome the fact that the legislature could anyhow not foresee every possible case of abusive enforcement. Therefore, relying on a principle and following the court's guidelines, instead of merely following an exclusive list of specific abusive conducts, would better allow to address unforeseeable sets of cases.

The abuse of rights doctrine has developed as one of the main instruments of private law especially of civil law jurisdictions ever since its origins in Roman law, with its central function as a remedy and corrective mechanism.[875] Recent scholarship therefore argues that, despite of the accompanying legal uncertainty, the abuse of rights doctrine is the most appropriate corrective mechanism to address patent troll issues.[876] Nevertheless, this only allows in part to solve the problem at the hearth of the present dissertation. Indeed, even if the fact that the abuse of rights doctrine represented a potentially highly suitable flexible safeguard against patent trolling, it would nevertheless not be sufficient for overcoming the asymmetries inherent to the system in a comprehensive manner. As a consequence, the application of the abuse of rights principle in the context of the UPC would help to protect start-ups defendants from abusive threats, but would not *per se* allow to adjust all the asymmetries inherent to the system, thereby facilitating their capability of enforcing their patents and defending themselves also under normal circumstances.

III. Summary and Conclusion

In light of the above, it is possible to conclude that start-ups are more likely to be in the position of defendants once that the UPC becomes operational. Therefore, they would be potentially more affected by the identified asymmetries, which, in addition, generally favour – either directly or indirectly – more resourceful and established businesses. It is not possible to assert with certainty whether the imbalances within the UPC system will increase patent troll activities and other abusive behaviours in patent law proceedings in the EU. Certainly, the system includes some safeguards that tackle these behaviours.

The implementation and use of additional safeguards should deserve specific attention, such as the abuse of rights doctrine. Although these can be of help in limiting abusive practices, none of

[874] Davide Rovetta and Filip Tack, 'Creative or Artificial, That's the Question!' (2010) 2 Global Trade and Customs Journal 71, 76.

[875] It is claimed that a general abuse of rights doctrine already existed under Justinian law. See Antonio Gambaro, 'Abuse of rights in civil law tradition' (1995) 3 European Review of Private Law 561, 562; Michael Byers, 'Abuse of Rights: An Old Principle, A New Age' (2002) 47 Revue de droit de McGill 389, 395 and n.16.

[876] Richard Steppe and Amandine Léonard, 'Catching patent trolls in the net of abuse of rights: applying the general principle of Union law in the context of the unitary patent package' (2017) 39 European Intellectual Property Review 163, 172.

them would be sufficient to comprehensively re-equilibrate the asymmetries caused by the imbalances. As a consequence, the risk that start-ups may well become most favoured targets of litigation in the envisaged future, because of actions filed by competitors or trolls, is real and very high. The problem is that when this occurs, the innovation of start-ups as defined in Chapter I will be severely affected. This not only because of the resources which would need to be invested in litigation as such, thus being diverted from research and development and production, but also because the involvement in litigation will limit the opportunities of entering the market. Indeed, business angels and venture capital investors would be reluctant to fund and promote a start-up which is in the middle of a litigation battle and whose technology is at risk of being declared either not patentable or infringing.[877] In a similar manner, also more established businesses will refrain from acquiring a company involved in a high-risk patent dispute.[878] And it is arguable that such a reluctance may become even more realistic and evident, the weaker the position of the party as a litigant, due to the characteristics of the system, will be. Hence, the more the risk of litigation increases and the worse the consequences of litigation are, the less opportunities of receiving funding and of successful acquisition there would be. This, in turn, can considerably hinder the innovation of start-ups.

The intrinsic imbalances that the system of the UPC presents and that have been analysed in Chapter II as well as their respective consequences, to a certain extent, can be redressed through specific and tailored amendments and interpretation of provisions, as suggested for each specific feature. Despite the undoubted validity of the envisaged proposals, a more effective and maybe needed solution, capable of more comprehensively re-equilibrating a major part of asymmetries, would require a more fundamental remodelling of the overall system. The next Section therefore addresses a potentially more suited and balanced alternative for reconsideration.

B. Analysis of Possible Alternative Systems

From the above analysis it follows that in order for the system to be more comprehensively rebalanced, there is a need of more important structural changes. The present Section recalls the different systems that have been proposed and taken into account in the past. Further on, it provides for a more in-depth analysis of the current EU Trade Mark system and through a deductive method, it argues that the implementation of a similar structure within the patent field, would help to tackle many of the analysed imbalances. Despite the upcoming entry into

[877] For studies showing an association between the increase in the number of litigated patents and decreased venture capital investment, see Stephen Kiebzak, Greg Rafert and Catherine E. Tucker, 'The Effect of Patent Litigation and Patent Assertion Entities on Entrepreneurial Activity' (2016) 45 Research Policy 218-131; Robin Feldman, 'Patent Demands and Start-ups Companies: The View from the Venture Capital Community' (2014) 16 Yale Journal for Law and Technology 237-284.

[878] For studies demonstrating that litigation decreases the probability of deal completion see, among others, C.N.V. Krishnan, Ronald W. Masulis, Randall S. Thomas et al., 'Shareholder Litigation in Mergers and Acquisitions' (2012) 18(5) Journal of Corporate Finance 1246-1268.

force of the UPC system in its current form, the analysis remains relevant from a more scholarly perspective. In addition, it presents also practical relevance in the event in which inventors decide not to use the new UPC system and return to national filing and as it can be taken into consideration for any possible future reform of the system.

I. Alternative Systems Considered in the Past

During the evolution towards the current system of unified patent protection, several alternative models have been set forth.[879] The Community Patent Convention (CPC 1975)[880] already contained some initial elements for a litigation system. Furthermore, an extensive Protocol on Litigation was appended to the Agreement relating to Community Patents (ACP 1989),[881] which foresaw the establishment of a court of appeals based only on international law and centralised administrative appeals as well as the competence to take preliminary rulings from national courts. However, the fact that the judicial arrangements under the ACP 1989 were not compatible with the Community judicial system led the Commission to formulate a proposal for a Regulation on the Community patent, thus favouring the Community law solution.[882] That proposal envisaged the creation of a centralised Community IP Court (CIPC) based on international law and with competences on infringement and invalidity issues. Administrative appeals would have instead been kept within the EPO competences. At the end of 2003, after the failure of the previous projects, there was a high risk that the negotiations would stop mainly because of issues concerning the language regime and jurisdictional matters. Therefore, in order to continue the debate, in March 2004, the Commission proposed a revised version of the previous 2000 proposal for a Council Regulation on the Community Patent[883] and devised the creation of the Community Patent Court as a specialised court based on Article 257 TFEU. According to this proposal, the Court would also have been centralised and with competence for invalidity and infringement, while administrative proceedings would have remained with the EPO.

The abandonment of the proposal for a Community Patent Court and of the other subsequent alternatives considered by the European Parliament between 2002 and 2004[884] led to the draft of the European Patent Litigation Agreement (EPLA), a proposed agreement which aimed at creating an 'optional protocol to the European Patent Convention (EPC) which would commit its

[879] For a more detailed analysis of the developments see Chapter I, B.
[880] Convention for the European patent for the common market (Community Patent Convention – CPC) [1975] OJ L17/1, Arts 68 to 79.
[881] Agreement relating to Community Patents (ACP), [1989] OJ L401/1.
[882] Proposal for a Council Regulation on the Community patent, 1 August 2000, COM(2000) 412 final. See, in particular, Art. 30 and Sec. 2.4.5 of the Explanatory Memorandum. In addition, see the previous Green Paper on the Community patent and the patent system in Europe, 24 June 1997, COM(97) 314, and the Communication on the follow-up thereto, adopted on 5 February 1999, COM(1999) 42 final.
[883] Proposal for a Revised Council Reg. on the Community Patent, Council Doc. No. 7119/04.
[884] For more details see Chapter I, B.

signatory states to an integrated judicial system, including uniform rules of procedure and a common appeal court'.[885] The proposal also differed from previous ones as regards the fact that the negotiations were co-ordinated by the European Patent Office and not by the European Council and the European Commission. On substance, this also explains why the EPLA would also have allowed the participation of non-EU Member States of the EPO. Yet the proposal was abandoned when the Legal Service of the European Parliament held that the EPLA would constitute a breach of ex-Article 292 of the EC Treaty and that thus the, at that time, European Community and its Member States could not participate.

Years later, after Opinion 1/09 of the CJEU,[886] the Commission and the Council worked again on the matter and put forward the use of an enhanced cooperation procedure in order to guarantee the adoption and implementation of rules concerning unitary patents. In relation to the judicial system, the Council asked the opinion of the Member States about a system of unified patent disputes on the basis of Commission proposals included in a non-paper.[887] The Commission insisted on the creation of an international court to be established only by Member States, thereby excluding third parties and the European Union as such, with jurisdiction over European patents and unitary patents. This approach was also preferred to comply with the considerations of CJEU Opinion1/09, especially guaranteeing that the new court would fully respect European Union law.[888] In this context, the Commission in particular abandoned the idea of granting additional powers to the CJEU under Article 262 TFEU and also the idea of implementing a system based on national courts as it was already existing – at that time – for Community trademarks. Within the framework of this proposal, the Commission nevertheless recalled the possibility of a route close to the one existing for Community trademarks and Community designs. Albeit dismissed as an option, this is a route that should instead deserve some more thought and analysis.[889] It seems however, that both the Commission and the drafters of the UPCA opposed it for mainly three reasons; first, the lack of experience of national courts in patent matters; second, the numerous possibilities of appeal and thus the number of potential instances; and

[885] European Patent Office, 'Legislative Initiatives in European Patent Law. European Patent Litigation Agreement – EPLA', available at https://web.archive.org/web/20061018103942/http://patlaw-reform.european-patent-office.org/epla/ (accessed 14 May 2020). See in more detail Working Party on Litigation, 'Draft Agreement on the establishment of a European patent litigation system' (16 February 2004) available at https://www.ipeg.com/_UPLOAD%20BLOG/EPLA%20agreement_draft.pdf (accessed 14 May 2020).

[886] Opinion 1/09 of 8 March 2011, ECLI:EU:C:2011:123.

[887] Doc. 10630/11 PI 54 COUR 28 – Creating a Unified Patent Litigation System – Orientation Debate (26 May 2011) welcomed by a large majority of Member States. See Press Release of the European Council on the 3094th Meeting (Competitiveness) of 30 and 31 May 2011, Doc 10547/11 PRESSE 146 PR CO 34, p. 11.

[888] In particular the document highlighted the importance to adhere to the acquis communautaire and the necessity to amend Regulation 44/2001 on jurisdiction and the enforcement of judgments in civil and commercial matters. Further, it stressed that the compatibility of such international agreement with the constitutional laws of the Member States would have to be assessed and regulated at that level.

[889] Along these lines see Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 214, 221.

third, the lack of expertise of the CJEU whose decisions may not be welcomed among the legal and industrial stakeholders concerned.[890]

By taking in particular account the proposals more aligned to a Community (now European Union) solution as for the trademark system,[891] the present Section encourages their resurrection by arguing that a system construed along lines to some extent similar to the system of trademark protection and enforcement may be better suited to overcome the most relevant imbalances and can therefore be more appropriate to address the main needs of start-up litigants.

II. The Unitary Trade Mark System as a Model for Addressing the Asymmetries of the UPC System

The option of adopting a judicial solution similar to the one devised under the EU Trade Mark Regulation[892] (hereinafter EUTMR), with some possible deviations, will be considered in the following. As it will be shown, this approach would not only be more consistent with EU law, but also better suited to meet the needs of start-up litigants.

1. Main Characteristics of the EU Trade Mark Judicial System

To contextualise the following analysis, it is important here to briefly recall the main characteristics of the EU trademark judicial system. Article 1(2) EUTMR establishes the unitary character of the EUTM, which has the same effect throughout the Union and can only be registered, transferred or surrendered or be the subject of a decision which revokes the rights of the proprietor or declares it invalid for the entire Union.

The judicial system is composed by a limited number of national courts of first and second instance, designated as EU trademark courts.[893] The courts have jurisdiction in relation to actions for infringement and, when permitted under national law, for threatened infringement and for actions of declaration of non-infringement, for actions seeking protection on the basis of a

[890] Ibid.

[891] Otto Bossung, 'A Union Patent Instead of the Community Patent -Developing the European Patent into an EU Patent' (2003) 34 IIC 1-30; Vincenzo Di Cataldo, 'Competition (Or Confusion?) of Models and Coexistence of Rules from Different Sources in the European Patent with Unitary Effect: Is There a Reasonable Alternative' (2014) 4(3) Queen Mary J. Intell. Prop. 195-212; Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 214-224.

[892] Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union trade mark, [2017] OJ L154/1.

[893] Art. 123 EUTMR.

published EU trademark application and for counterclaims for revocation or invalidity of the EU trademark concerned.[894]

Furthermore, it must be kept in mind that, if the EUTMR does not provide otherwise, the rules on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters as set in the Brussels Ibis Regulation apply to proceedings concerning EU trade marks and applications for EU trade marks and also to proceedings connected to simultaneous and successive actions based on EU trade marks and national trade marks.[895]

Moreover, as regards actions for invalidity of an EU trade mark, these lie within the exclusive jurisdiction of the EUIPO. In relation to this aspect, a form of cooperation between the EU trade mark courts and the EUIPO is established. In the event in which a counterclaim of invalidity is raised before it, the court can either decide on it or may stay proceedings, on request of the EU trade mark proprietor and after hearing the parties, and may also invite the counterclaimant to file an application for revocation or for a declaration of invalidity before the EUIPO within a specific timeframe. If the defendant fails to do so, the action will be deemed as withdrawn.[896] In addition, if an EU trade mark court has already taken a final decision on a counterclaim for revocation or for a declaration of invalidity of an EU trade mark, either the court or any of the parties to the national proceedings should send a copy of the judgment to the EUIPO which shall include the judgment in the Register and take the necessary measures.[897] In any case, it is clear that due to the unitary nature of the EU trade mark, a EUIPO decision establishing the revocation and invalidity of an EU trade mark has its effects in the entire EU territory.

In taking their decisions, the EU trade mark courts must apply the provisions of the EUTMR and, for the matters that the latter does not cover, the applicable national law shall be applied. Unless not provided for differently, the court must apply the rules of procedure which concern the same type of action related to a national trade mark in the Member State concerned.[898]

Moreover, when it comes to the registration of EU trade marks, the decisions of the EUIPO Boards of Appeal concerning registration and opposition can be appealed and set aside by the EU General Court and could then be appealed before the Court of Justice. The system has worked well without particular difficulties or concerns for relevant businesses and stakeholders and a similar solution could thus be adopted in relation to unitary patents.[899] The extent to which such an option would help overcome the major problematic imbalances that have been analysed

[894] Art. 124 EUTMR.
[895] Art. 122 EUTMR.
[896] Art. 128(7) EUTMR
[897] Art. 128(6) EUTMR
[898] Art. 129 (2) (3) EUTMR.
[899] Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 214, 221.

above will be examined hereinafter by taking into account also some deviations and concerns justified by the patent context.

2. Proximity of Litigation

The adoption of a model aligned to the system of EU trade marks would, first of all, help to mitigate the issue of proximity of litigation, which is one of the major concerns for more financially constrained litigants. Pursuant to Article 125(1) EUTMR, proceedings shall be brought before the EU trade mark court of the Member State in which the defendant has her domicile or, if she has no domicile, before the court of the state in which she has an establishment. In the case in which neither the defendant has her domicile nor has an establishment in any of the Member States, a plaintiff is allowed to bring the action before the courts of the Member State in which she is domiciled or has an establishment according to Article 125(2) EUTMR. If neither the defendant nor the plaintiff have a domicile or an establishment in any Member State, the plaintiff may still seise a Spanish court as the court of the state where the EUIPO has its seat pursuant to Article 125(3) EUTMR.[900] In this regard, it is relevant to highlight how, in the context of the EUTMR, the CJEU provides for a different interpretation of the concept of the place of establishment, than the one adopted under the BR. In fact, in Article 7(5) BR, the term establishment is used as a synonym of branch and agency and thus, referred to as an entity without own legal autonomy. Conversely, in its recent *Hummel Holding*[901] decision, while interpreting the concept of 'establishment' for the purposes of Article 125(1) EUTMR, the CJEU held that it is not relevant whether the entity has legal personality or not.[902] This difference of interpretation of the very same concept is noteworthy, as it may both increase opportunities for 'forum shopping' and render it more difficult for businesses to navigate between different interpretations depending on the types of IP rights concerned.

Furthermore, with regard to the interpretation of the *forum commissi delicti* principle, as enshrined in Article 125(5) EUTMR,[903] it is interesting to highlight how the interpretation of this provision has developed and has recently changed. In fact, as analysed above,[904] in *Coty Germany*[905] the CJEU stressed that the duality of linking factors, namely, the place of the event

[900] Art. 125 (2) (3) EUTMR.

[901] CJEU Case C-617/15 *Hummel Holding* ECLI:EU:C:2017:390, para. 38.

[902] The case concerned an action for infringement filed by Hummels, a Danish company, against Nike US, before the courts in Germany, where there was Nike Deutschland GmbH, a second-tier subsidiary if Nike US. The question referred to the CJEU was whether the given subsidiary could be considered an establishment, pursuant to Article 125(1) EUTMR, so that German courts could declare their jurisdiction to decide on the commercialisation of the allegedly infringing products in different Member States.

[903] Article 125 (5) reads: 'Proceedings in respect of the actions and claims referred to in Article 124, with the exception of actions for a declaration of non-infringement of an EU trade mark, may also be brought in the courts of the Member State in which the act of infringement has been committed or threatened, or in which an act referred to in Article 11(2) has been committed.'

[904] See above Chapter 2, Section B. II. 2.1.

[905] CJEU Case C-360/12 *Coty Germany* ECLI:EU:C:2014:1318.

giving rise to damage (*locus actus*) and the place where damage occurred (*locus damni*) used by the Court in relation to the interpretation of Article 7(2) BR cannot directly apply to the concept of 'the Member State in which the act of infringement has been committed or threatened' in Article 97(5) (now 125(5)) EUTMR'.[906] The Court concluded that the wording of the latter provision, refers to an active conduct from the person causing the infringement and that therefore the linking factor here relates only to the locus actus. Furthermore, in *AMS Neve*,[907] an EUTM case concerning infringements committed over the Internet, the Court almost reversed its approach and introduced a new 'targeting activities' criterion, clarifying that for the purposes of Article 97(5) (now Article 125(5)) EUTMR, a EUTM court can declare its jurisdiction, when it is shown that the defendant is targeting her commercial activities to the market of the Member State where the court is established.[908] Although partly deviating from the CJEU's interpretation of Article 7(2) BR and related case-law, the *AMS Neve* approach should be welcomed and preferred to the one adopted in *Coty Germany,* in the context of EUTM cases, as it facilitates enforcement of unitary IP rights for infringements committed over the Internet. Yet, in the context of envisaged potential future EU Patent Regulation, an interpretation of the *forum delicti rule* as contained in Article 33 (1)(a) UPCA, implementing the duality of linking factors, namely both the *locus actus* and *locus damni* approach, along the lines of Article 7(2) BR case-law, should be preferred. This would indeed both facilitate enforcement and safeguard the principle of proximity of litigation. Moreover, as regards the *locus damni* approach, it is recommended to interpret it in light of the 'targeting criterion', hence, alloctating jurisdiction to the division of the Contracting Member State where the company is addressing its commercial activities and not, as it is now, to the Courts of the Member State where its website or technology can be accessed or downloaded.[909]

Overall, despite of the highlighted differences of interpretation and the critical issues they give rise to, Article 125(1) and 125(5) EUTMR are in conformity with the principle of proximity to the venue of litigation and do not give rise to the same issues as regards the departure from the BR principles as it has been demonstrated to occur under the envisaged UPC framework. More problematic in this regard are however Articles 125(2) and (3), as they foresee the possibility for the plaintiff to sue the defendant either at the plaintiff's place of domicile or establishment or at the place where the EUIPO has its seat. It is evident how these rules present frictions with the proximity principle. Notwithstanding the importance of the issue, it should however be noted that this concerns defendants without a domicile or establishment in any of the Member States and that therefore it may have less relevance from a European innovation policy perspective, which is however at the centre of the present analysis. In any case, it is recommended that an

[906] Ibid. 31, 32.

[907] CJEU Case C-172/18 *AMS Neve and Others* ECLI:EU:C:2019:674.

[908] CJEU Case C-172/18 *AMS Neve and Others* ECLI:EU:C:2019:674, para 47.

[909] For more details on the 'targeting criterion' in EUTM disputes and holding that it is to be preferred over the 'mere accessibility' criterion, as the latter is a source for companies conducting commercial activities over the Internet, see Aurelio Lopez-Tarruella, 'International Jurisdiction in EU Trademark Infringements on the Internet – Is it possible to complicate things even further?' (2021) 13 Cuadernos de Derecho Transnacional 352, 358.

envisaged EU patent regulation rather foresee the competence of the courts of the place of infringement in such cases.

3. Extent of Jurisdiction – Implications for Costs

As regards the territorial scope of the decisions of the EU trade mark courts and its implications, it must be stressed that the EUTMR does not provide for a rule comparable to Article 34 UPCA. The two systems present indeed considerable differences which need to be taken into account in the context of the present analysis. First, Article 34 UPCA also applies to European bundle patents and not only to EPUEs. The EU trade mark system instead encompasses only a unitary right, the EU trade mark, in addition to the national trade mark rights, and does not foresee the existence of a bundle of rights similar to European patents. Furthermore, the local divisions of the UPC decide cases as divisions of the UPC pursuant to the jurisdiction set in the UPCA and therefore do not decide as a national court as it is the case for EU trade mark courts. Upon these premises, with regard to the extent of jurisdiction, pursuant to Article 126(1)(a) EUTMR, the effects on an infringement decision for which a EU trade mark court has jurisdiction according to Article 125(1)-(4) EUTMR will extend to any Member State where the infringing act occurred or is threatened to occur. Hence, in particular where jurisdiction is based on the defendant's or the plaintiff's domicile or establishment, the EU trade mark court has jurisdiction regardless of whether the infringement actually occurred in this forum state. The decisions of EUTM courts in the state of domicile of the defendant pursuant to Article 125(1) EUTMR appear to be comparable to the ones of a local division of the UPC located in the state of domicile of the defendant (Article 33(1)(b) UPCA), in the case of an infringement of an EPUE, when it comes to the effects of that decision in another Contracting Member State. However, despite the similarity in effects in this case, it must be recalled that the local division of the UPC decides cases as a division of the UPC and not as a national court as it is the case for EU trade mark courts.

In contrast, if the plaintiff files the action before the EU trade mark court of the Member State where the infringement took place, according to Article 125(5) EUTMR, the effect of the judgment will be restricted to acts committed or threatened within this forum state pursuant to Article 126(2) EUTMR.[910]

This solution and structure appear to be fairer and more balanced for the defendants. Indeed, at least in the case where the defendant has either her domicile or an establishment in the EU (Article 125(1) EUTMR), it results that if she has to defend herself before a court which is different from the one of the Member State in which she is domiciled or has an establishment, with the consequences that this situation would give rise in terms of linguistic and procedural difficulties, the defendant would nevertheless only face the litigation risks within a limited territory. In

[910] Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 214, 224.

contrast, if the defendant is sued before the courts of the Member State of her domicile or her establishment (Article 125(1) EUTMR), allowing the defendant to use her language before a familiar court with familiar rules of procedure, she will run the litigation risk in relation to all the territories of the Member States where the infringement occurred.[911] Therefore, this solution not only appears to be more balanced with regard to the interests of the different categories of litigants, but is also in line with the principles of the Brussels Ibis Regulation, namely, that the courts in which the defendant is domiciled or has an establishment shall have full jurisdiction. In practice, within the EU trademark judicial system, it is rare that a duplication of lawsuits against the same defendant occurs and infringement litigation is solved by decisions that sometimes have a limited territorial effect and EU-wide effect in other cases.[912] This model allows to avoid the problems and imbalances deriving from a departure from the principles of the BR and would limit the possibilities for the plaintiff to choose a forum to start a lawsuits with a language that suits her better, as it could instead occur under the system of unified patent protection. Indeed, in the framework of the UPC judicial system, the plaintiff only needs to find an act of actual or threatened infringement in the territory of the interested local division. The potential for 'forum shopping' under the UPCA plays in favour of the patent holder, giving rise to an imbalance to the disadvantage of defendants. Therefore, for these cases, the EU trade mark judicial system is more favourable to the defendant, in comparison to the UPC judicial system.

However, it is important to stress that the extended effect of decisions of EUTM courts pursuant to Article 126(1)(a) EUTMR becomes problematic when applied to jurisdiction under Article 125(2) and 125(3) EUTMR. In particular, in the case in which the defendant is neither domiciled nor has an establishment in any of the Member States, the proceedings must be brought before the courts of the Member State where the plaintiff has her domicile or establishment (Article 125(2) EUTMR). This means that the broad extent of jurisdiction pursuant to Article 126(1)(a) applies also to the cases in which the defendant has to defend herself before a court different from the one located in the Member State of her domicile or establishment, with the related linguistic and procedural difficulties. The same problematic consequences occur also in the cases in which neither the defendant nor the plaintiff have domicile or an establishment in any Member State and the proceedings must be brought before the courts of the Member States where the Office has its seat, pursuant to Article 125(3) EUTMR. In this regard, it is however relevant to stress that the cases falling under Articles 125(2) and (3), concern litigants that do not have neither their domicile nor establishment in any of the Member States. This of course does not diminish the importance of the issue. Yet, it renders the matter less relevant for the point of view of European innovation policy and hence, for the present analysis. In any case, as mentioned

[911] This is however limited to the cases pursuant to Article 125(1) EUTMR and does not apply under Article 125(2) or (3) in the case of defendants that do not have any domicile or establishment within the EU. These cases will be addressed hereafter.

[912] Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 214, 216.

above[913] in the context of an envisaged EU patent regulation, a more balanced solution would require that when the defendant does neither have her domicile nor an establishment in a Member State, proceedings shall be brought before the courts of the place of infringement. In this way, the effect of the judgment will be restricted to acts committed or threatened within that forum state. However, it is relevant to stress that this solution would not be very much favourable for a potential EU start-up plaintiff, as she might need to sue the defendant in several Member States. Yet, it would result in an overall more balanced approach.

Furthermore, an additional characteristic of the EUTM system which can be particularly critical for a start-up is included in Article 128(7) EUTMR, which currently provides that the EU trade mark court can stay the proceedings at the request of the EU trade mark proprietor and separate the counterclaim for revocation or invalidity by requesting the defendant to submit it before the EUIPO within a specific timeframe.

III. Shortcomings of EU Trade Mark Approach as a Model for Unitary Patent Protection

Despite of the positive elements the EU trade mark law approach would present in particular for more financially constrained businesses, the envisaged structure may well pose several issues when transposed in the patent law context. In particular, the main reasons why this approach has so far not seriously been considered relate to the inexperience of both many national courts and the CJEU in the field of patent law.[914] Furthermore, the trade mark law model would require a reassessment of the rules and their implications from an institutional perspective. The implications and changes that the grant and settlement of litigation in relation to a unitary patent would require at institutional level will be addressed in the following. Subsequently, the lack of expertise and specialisation of judges and potential ways to mitigate the problem will be addressed.

1. The Competence for Invalidation

The proposal to develop a European patent into an EU patent,[915] which would result in a system following the model for EU trade marks, would have several implications for the judicial structure, which would require to be restructured and rethought.

[913] See present Section, par. 2.

[914] See also on these points Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 214, 221.

[915] Bossung proposed to transfer the control of substantive patent law to the Union and to implement a real EU patent thereby abandoning the – at that time envisaged – Community patent. To a certain extent, the proposal preludes a structure which is aligned to the proposals building on a comparison with the Community (now EU) trade

For an EU patent, first-instance jurisdiction for infringement and validity would have to remain with national courts and the basis for settling the disputes, albeit in form of rules on international jurisdiction in an EU patent regulation, would have to be designed in conformity with the principles of the Brussels Ibis Regulation and the Lugano Convention. In this event, however, the envisaged regulation should not include a provision providing that proceedings shall be brought before the courts of the plaintiff domicile when the defendant does not have neither her domicile nor an establishment in any of the Member States, as provided in Article 125(2) EUTMR. The envisaged EU patent regulation shall rather foresee the competence of the courts of the place of infringement in such cases. As a consequence of this shift, the effects of the judgment should also be restricted to acts committed or threatened to this forum state, as provided in Article 126(2) EUTMR. Furthermore, in this context, for decisions concerning infringement and validity, already existing partial harmonisation at substantive patent law level should be accompanied by a more in-depth harmonisation of procedural matters, in particular for the rules concerning preliminary injunctions and protective measures, possibly transferring the UPCA rules concerning substantive law and remedies to the EU Regulation.

If infringement decisions would be left to national courts, the issue of jurisdiction for decisions on validity would be particularly relevant and delicate. In particular, the application and functioning of Article 24(4) Brussels Ibis Regulation, would imply that the validity or invalidity of the patent right can be decided only by a court of a Member State for which the patent right has been conferred and the unitary patent has been granted, to be regarded as an EU patent court as it currently occurs in relation to the EU trademark, whereby Article 128 EUTMR empowers the EU trade mark courts to decide on revocation and invalidity in case of a counterclaim. Yet, in the context of the envisaged EU patent regulation, a different approach could consist in allocating the competence for a decision on invalidity with *erga omnes* effect exclusively to the European Patent Office.

Furthermore, judgments of the national courts could only be appealed to national courts, however, with the possibility of referring preliminary questions of interpretation and application of the uniform EU patent law to the CJEU. This would however also require, as it is the case for EU trade marks, that the CJEU has power to control decisions on the grant of the unitary patent, in order to ensure uniform application of the law in this regard. That structure however is problematic because it would require to provide the CJEU with the power to rule on decisions taken by the European Patent Office as a non-EU institution and on the applicable law of the European Patent Convention, which is not EU law. To address this problem, a first option would consist in providing that the EPO acts as an EU institution where it grants a unitary EU patent. This may well require the European Union to become a member of the European Patent

mark system. For a detailed analysis see Otto Bossung, 'A Union Patent instead of the Community Patent – Developing the European Patent into an EU Patent' (2003) 34 IIC 1-30.

Organisation, so that the CJEU could have jurisdiction on EPO decisions,[916] with the effect that decisions from the EPO Board of Appeals could further be appealed to the EU courts. This would however increase the number of cases beyond what the General Court and the CJEU as currently organised would be able to handle. To overcome such a problem, the creation of a specialised court pursuant to Article 257 TFEU could be envisaged.[917] As a consequence, a central first and second instance court, as planned for the UPC, would not be strictly necessary.

If this can be envisaged for the unitary patent, the question remains how to deal with European patents. One possibility could be to completely eliminate the European patent option, thereby only allowing a choice between national and unitary patents. The other option would consist in leaving things as they are, namely, in maintaining the jurisdiction of national courts to decide on disputes concerning European patents in the EU.

Nevertheless, whichever would potentially be the most suited and less problematic institutional setting from the point of view of compliance with EU law, international private law as well as administrative and labour law, it is evident that one of the major gaps which would need to be addressed is the one of specialisation and training of the judiciary.

2. Training and Specialisation of Judges

The expertise and specialisation of national judges and of those of the CJEU has been the object of common concern of scholars and stakeholders, including legal practitioners and industry representatives. Although it is correct to recognise and acknowledge the relevance and importance of the issue, it is however questionable whether it is indispensable to design a completely new judicial structure, which at the same time departs from several common rules and principles which would better safeguard an appropriate balance of the interests of the different categories of litigants involved.

Upfront, it must be stressed that the issue of expertise and training of judges has been of much concern and attention in the draft of the UPCA. The expertise of UPC judges is deemed to be ensured by the envisaged eligibility criteria and appointment procedure. Indeed, both legally and technically qualified judges would have to ensure the highest standards of qualification and need to have sufficient experience in patent litigation. In particular, legally qualified judges would have to fulfil the requirements for being appointed as judges at the national level, and technically qualified ones would need to have both a university degree and expertise in a field of technology in addition to knowledge of civil and procedural law as regards patent litigation.[918] Furthermore,

[916] On this position in relation to a similar proposal see Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 114, 222.
[917] More details concerning the issue of specialisation both at national courts and at CJEU level will be provided in the next Section.
[918] Art. 15 UPCA.

it is planned that, by common accord, the Advisory Committee would appoint the most suitable judges on the basis of a list which is established by the Committee itself and according to the implementing provisions as set out in the Statute of the UPC.[919] In addition, the UPCA guarantees the independence and impartiality of the UPC, of its judges and the Registrar.[920] Moreover, in order to increase the patent litigation expertise and ensure its broad geographical coverage, the UPCA sets up a training framework for judges with facilities in Budapest and the possibility of internships in national patent courts or courts of First Instance Divisions. The training of the candidate judges specifically includes improving linguistic skills as well as teaching on the technical aspects of patent law and the law of civil procedure.[921] The efforts to ensure high expertise and specialisation of judges to guarantee good quality of decision-making have been enormous. Yet it can be argued that those initiatives and similar arrangements could be also set up for a uniform specialisation of national judges within a system that may envisage national courts deciding over European and unitary patents.

If such a system would be taken into consideration, a proper training and high specialisation of national judges would be of high importance and priority. With this aim, it has been suggested that the efforts and results already obtained in the framework of conferences and meetings of national judges on a regular basis with the support of the European Patent Office should be continued.[922] In addition, a system for optional assistance for national courts could be established, according to which experienced judges could provide advice and opinions to foreign colleagues with less specialisation.[923] Yet the feasibility of such an option would also depend on the amount of workload that the relevant courts will have to handle. Furthermore, by taking example from the UPC training framework, young national judges could also be invited to take part in internship programs before more experienced national courts and to attend trainings in order to foster their language and technical skills. Moreover, the integration of the national court panel with judges with technical expertise, should also be considered. The need and importance of the training of judges can be accompanied by setting up specialised IP courts at the national level in the concerned countries, as it has been claimed for some time.[924]

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[919] Art. 16 UPCA.
[920] Art. 17 UPCA.
[921] Art. 19 UPCA.
[922] Fernand de Visser, 'European Unified Patent Court: Another More Realistic and More Equitable Approach Should be Examined' (2012) GRUR Int. 214, 222.
[923] Ibid.
[924] A detailed comparative analysis of the existence and functioning of IP specialised courts in EU and non-EU countries, would go beyond the scope and purposes of the present dissertation. For a thorough analysis of the implications, advantages and disadvantages of the establishment of an IP specialised judiciary see Jacques de Werra et al., 'Specialised Intellectual Property Courts - Issues and Challenges' 2 (2016) Perspectives for the Intellectual Property System, CEIPI-ICTSD, available at: www.ictsd.org/themes/innovation-and-ip/research/specialised-intellectual-property-courts-issues-and-challenges (accessed 26 May 2020). In brief, the main advantages are deemed to be the following: first, an improvement of quality of decisions, highly important in the context of patent disputes in which often decisions on provisional measures need to be taken quickly. Secondly, specialised courts may be better able to adapt to the dynamic developments of IP law. Thirdly, their establishment can help to reduce

Furthermore, parallel efforts should be deployed, and particular attention should be paid to assist and support judges at the CJEU regarding patent law issues and their connection with European Union law. The rules on conflict of interests and appointment guarantee the independence of CJEU judges.[925] In recent years, the Court has already acquired an important role in relation to intellectual property law matters, not only in trade mark law, but also in the field of copyright law, where the Court, similarly to a 'common law court', developed a pro-active role in furthering a more coherent EU copyright law.[926] Furthermore, the increasing CJEU case law on the SPC Regulations[927] is highly important in this context.[928] As regards expertise and knowledge, so far the work towards their continuous improvement and increase has successfully seen the implementation of internal meetings and discussions as well as the appointment of Advocate Generals who carry on comprehensive research and provide the CJEU with their non-binding opinions. If this has been surely a way forward towards a better expertise in comparison to the past, and for ensuring the quality of decision-making, further efforts still need to be taken to fulfil the aim of a proper specialisation in IP matters.[929] The issue is particularly delicate when it specifically comes to patent matters, due to their economic and societal implications. Against this backdrop, the establishment of a chamber specialised in patent matters within the CJEU has been proposed.[930]

IV. Implications for Start-ups

In light of the above analysis, despite of the need to rethink and reassess the institutional structure and despite of the importance of responding to the need for specialisation and training

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the risk of forum shopping. Conversely, as for the main disadvantages, scholarship enumerates the following: first, the costs of their establishment; secondly, a potential negative impact on access to justice; thirdly, the potential lack of independence and the risk that specialised courts may overlook broader legal and policy implications which are often highly relevant in intellectual property disputes.

[925] Art. 18 of the Statute of the Court of Justice of the European Union. In addition, judges are appointed for 6 years and every 3 years they are partially replaced.

[926] See, for instance, Jonathan Griffiths, 'The Role of the Court of Justice in the Development of European Union Copyright Law', in Irini A. Stamatoudi and Paul Torremans (eds), *EU Copyright Law* (Edward Elgar, 2014) 1098-1127; Christophe Geiger, 'The Role of the Court of Justice of the European Union' in Irini A. Stamatoudi (ed.), *New Developments in EU and International Copyrights Law* (Wolters Kluwer, 2016) 435, 441.

[927] Regulation (EC) No 469/2009 of the European Parliament and of the Council of 6 May 2009 concerning the supplementary protection certificate for medicinal products, [2009] OJ L152/1 and Regulation 1610/96/EC on SPCs for plant protection products, [2009] OJ L198/30.

[928] For an extensive analysis of the CJEU case law in this regard see European Commission, 'Study on the Legal Aspects of SPC – Final Report' (Max Planck Institute for Innovation and Competition, 2018) 1, 180-213; 225– 241; 371–376; 476-479.

[929] Stressing the need for higher specialisation of courts in order to ensure that judges are able to understand the economic and social implications of complex intellectual property issues, see Christophe Geiger, 'The Role of the Court of Justice of the European Union' in Irini A. Stamatoudi (ed.), *New Developments in EU and International Copyrights Law* (Wolters Kluwer, 2016) 435, 441.

[930] See in this regard Victor Rodriguez, 'From national to supranational enforcement in the European patent system' (2012) 34(6) E.I.P.R. 402, 409.

of judges, it appears that a judicial system to some extent more aligned to the one of EU trade marks would better respond to the needs of start-up litigants. In fact, it will indeed present several advantages for more financially constrained businesses in comparison to the envisaged UPC structure and the problems that the latter presents. The proposed structure would better address the need of proximity of litigation and it would in part help to mitigate the high risk arising from the broad territorial scope of the effects of decisions. This could be achieved through an improved alignment to the fundamental principles of the Brussels Ibis Regulation. However, in the cases in which the defendant does neither have her domicile nor an establishment in any of the Member States, the envisaged EU patent regulation should rather foresee the competence of the courts of the place of infringement with jurisdiction limited to that forum state. In fact, although this may be more problematic for an EU start-up plaintiff who might need to bring the action in several Member States, it results in an overall more balanced approach. In addition, such a design would also help to control the direct costs of litigation for the parties. The claimed savings would indeed be a direct consequence of the possibility to litigate before a court closer to the parties, which uses the language of the parties and acts based on familiar rules of procedure. This would therefore constitute a more balanced, more accessible and less uncertain system for litigants and be of particular help and advantage for financially constrained ones, such as start-ups. In addition, also the overall budgetary and administrative cost would be considerably inferior when compared to the envisaged UPC structure, because the proposed system relying on national enforcement would not require the establishment of an additional and separate court as such. Furthermore, considering that infringement and validity *incidenter tantum* would be under the jurisdiction of national courts, the adoption of a system at EU level would not even need to be approved and ratified by the single Member States pursuant to their respective constitutional procedures and rules and would therefore allow to avoid all the problems and delays as well as limitations as regards the geographic scope of application that accompanied the entry into force the UPCA.

Conclusion

In Chapter 1, Section A demonstrated that several inherent characteristics of the organisational structure of start-up businesses encourage them to engage in innovation activities, thereby rendering them businesses with high innovation potential. Moreover, it described the lifecycle of start-ups and, thereby, provided a better understanding of the start-up landscape and showed that the need to grow is the main motivation for new ventures to innovate.

Section B of Chapter 1 analysed the role of patents for start-up innovation and the related challenges and difficulties of start-ups to make use of the patent system for their purposes. In particular, it explored whether the incentive theory can also work for start-ups. It provided empirical data on how start-ups use the patent system and attempted to clarify to what extent the patent system can hinder or encourage their innovation activities. It resulted that, even if patents may not be perceived as an incentive to innovate, for instance, due to the lack of awareness on how the system works, patents can foster the innovation of start-ups when they are used in their function as an exclusive right, as an asset in licensing and trade or as a signal of the value and quality of the company. Nevertheless, it resulted that only a few start-ups seek patent protection. In particular the ones that do so are often active in the biotech sector, while the ones active in the ICT sector more often tend to opt for alternative means to secure the benefits of innovative activity.

Furthermore, in order to understand whether the adoption of a certain law or regulation in the patent field would be beneficial or detrimental to a particular group of businesses, Section C of Chapter 1 applied the theory of interest groups in order to assess the influence start-ups may have had during the legislative process that led to the adoption of the Unitary Patent Package (UPP) as well as the reasons and the way in which the rules of the UPP were drafted and adopted. In addition, in order to understand whether the resulting law actually meets or affects the interests of start-ups, Section C analysed their potential expectations towards the new regime. It resulted that start-ups as defined in the Chapter I Section A have not been explicitly taken into account nor have they actively participated in the preparatory discussions. However, when considering the broader category of SMEs, with whom start-ups share many of the concerns in relation to litigation, the outcome is different. The analysis indeed shows that to some extent the implications that the establishment of a unified court would have on SMEs were a point of concern during part of the legislative evolution. However, it appeared that, when this was the case, the interests of SMEs (and indirectly start-ups) have been indirectly put forward by other larger established incumbents or industry associations. Indeed, SMEs have never directly expressed their voice in the discussion. As a consequence, the concern and debate merely resulted in the addition of some financial provisions rather than in a coherent framing of the system in the light of the interests of such firms. Furthermore, to understand to what extent the influence exerted by the groups that have played an important role in shaping the design of the

system would have affected the welfare of other groups such as start-ups in particular, this Section explored to what extent start-ups would have needed a unitary system of patent protection and what could have been their needs, interests and expectations towards such a system. It resulted that, in the light of the impact the system of patent enforcement may have on other decisions that matter for start-up innovation, such as third-party investment and acquisitions, it is more appropriate and necessary to concentrate the analysis on the main features of the system of patent litigation. Indeed, the features of a system of patent enforcement can play an important role in either fostering start-ups' potential to innovate or making them more vulnerable to the action of incumbents that are threatened by the success of start-ups as well as to nugatory patent claims brought by competitors or patent trolls.

Chapter II showed that the analysed features of the envisaged UPC system may bring some advantages for start-ups and their innovative activities in comparison to the current framework but also raise several concerns that require either amendments to the specific provisions or guidelines for the most suited interpretation to overcome the identified imbalances.

The analysis of the rules of internal allocation of competence as regards the issue of proximity of litigation carried out in Section B of Chapter 2 demonstrated that in several cases these rules of division of competence of the UPC do not follow the principles of the BR with potentially harmful consequences for both plaintiffs (patentees) and defendants (non-patentees), depending on the situation taken into consideration. The greatest disadvantages arise from the fact that, despite the attempt to construe a decentralised unified court, litigation would increasingly occur abroad, in comparison to what happens within the current framework of the BR. Overall, the majority of the circumstances in which it is possible to foresee potential harmful consequences is often connected to the position of defendants (non-patentees). Yet, regardless of the specific position in which the parties may find themselves in the individual case, as plaintiffs or defendants, the analysis showed that the ones who will suffer more from the changes and imbalances in the patent litigation landscape are the most financially constrained businesses. Therefore, it proved necessary to formulate possible changes or alternatives that will help to rebalance the UPC system.

Such amendments could be implemented in the context of a future revision of the UPCA. In this regard, the thesis submits the following proposals for reform within the UPC system: In the case of absence of the place of business in the territory of a CMSs, it is advisable to substitute the competence of the central division with the competence of the division of the place of infringement. This would not only be in conformity with the principles of the Brussels Ibis Regulation, but also better for a start-up which does not have any place of business in a CMS but, to a certain extent, may still be more familiar with the place where it has carried out the alleged infringement. Secondly, the already mentioned and envisaged solution of moving the place of litigation to the closest division rather than to the central division seems the best solution also for the cases in which the competent CMS is without a local or regional division (Article 33(1)(4)

UPCA). Thirdly, also the regional division clause should be changed by deleting the possibility to move the competence to the central division, at the request of the defendant. Indeed, leaving the competence in the regional area would not constitute a real disadvantage for a start-up defendant, which may well not even make use of the possibility of moving the competence to the central division. Yet it would help a start-up plaintiff (patentee), which would then not be exposed to strategic decisions of a potentially stronger defendant. Similar considerations may apply in relation to Article 33(5) UPCA, providing the patent holder with the choice of the place where to file an infringement action once an opposition or an invalidity action has been filed. Also in this case, the provision could be amended by limiting jurisdiction to the courts of the state of the place of infringement. Finally, jurisdiction for the declaration of non-infringement (Article 33(6) UPCA) should be moved from the central division to the division of the infringement. The proposed amendments appear feasible and coherent and would result in a more balanced system, which in turn would improve the overall framework for a start-up litigant.

Section C of Chapter 2 dealt with the implications of the scope of jurisdiction of UPC judgments. The analysis showed that, in the framework of the UPC, judgments cover the multiple territories of the Contracting Member States of the UPCA with the possible exceptions analysed under Article 34 UPCA. In addition, in the case of damages, that effect extends its long-arm also beyond the borders of the EU. In contrast, under the current system of the Brussels Ibis Regulation, courts can deliver judgments concerning multiple territories and multiple defendants only in some cases and under limited and specific conditions. As a consequence, it is evident that the broader scope of jurisdiction of the UPC would provide businesses with the advantage of enjoying the broader effects of the decisions without having to start multiple actions or defending themselves in numerous proceedings across several Member States. Yet, it is clear that the higher risks and consequences that may derive from a negative outcome, regardless of whether the company is in the position of a plaintiff or a defendant, would have a considerably more significant impact on a start-up with few resources, even exposing such start-up to the risk of bankruptcy. This shows the lack of balance of a system which generally favours bigger and more established businesses that can afford the higher risk and consequences deriving from an unfavourable multi-territorial decision. This imbalance is therefore in need of being mitigated. This can be realised either through a redefinition and reinterpretation of the relevant provisions or through a systemic reconsideration of the system. For example, it has been shown that providing the UPC with more flexibility in interpreting the proportionality principle would help to mitigate this imbalance. Thus, the interpretation which provides the UPC with the discretion to refuse injunctive relief should be welcomed and Article 63 UPCA shall be read as making use of the option granted by Article 12 Enforcement Directive. In addition, in some instances also a deletion or an amendment of a provision can play a role in serving that purpose. Thus, in the case of damage actions, the consequences of the unjustified long-arm jurisdiction could be avoided by eliminating that opportunity entirely.

In Section C of Chapter II, the costs of litigation before selected national courts and before the UPC were analysed. It resulted that litigating before the UPC would represent a considerable financial effort for a start-up and surely a riskier one in terms of financial threat than what currently occurs within the system of proceedings before national courts. This therefore represents an additional imbalance, which disfavours financially constrained businesses as compared to resourceful incumbents. This imbalance occurs both in the case in which start-ups act as defendants and plaintiffs. Indeed, regardless of the position, they would always run the risk to also bear the recoverable costs when they lose the case. Although the Administrative Committee has provided for tailored rules on costs and legal aid in order to ensure access to justice, the analysis shows that these instruments are not sufficient and that, to a certain extent, they are not appropriately drafted.

To avoid the potential imbalances of the litigation context, start-ups may consider pursuing alternative dispute resolution (ADR) mechanisms. In this regard, Section D of Chapter 2 showed how these can present specific advantages also for financially constrained businesses. Indeed, ADR mechanisms can be conducted in whatever language the parties choose and also wherever they prefer. In addition, also the overall procedural construction may well be lighter and more flexible and can be developed on the basis of the case load and thus may be best suited to accommodate the needs of the market players. In particular, mediation services could represent a good opportunity for start-ups in comparison to the options offered by arbitration. Furthermore, Section D has also identified existing legal uncertainties concerning the system of the UPC Patent Mediation and Arbitration Centre (PMAC), in particular with regard to the extent at which the Court would propose the use of the Centre during proceedings and in relation to the substantial scope of PMAC services. When it comes to the former, the current uncertainties may well be overcome once the PMAC becomes operational. As regards the latter, the analysis favoured the interpretation which stresses the importance to widen the scope of services of the PMAC to any other possible type of settlement, thus including also other contractual and IP-related issues connected to the dispute at hand. The PMAC services may well be used to resolve FRAND-related disputes in the context of SEP litigation or disputes that concentrate on the award of damages. Nevertheless, whether the ADR services offered by the PMAC will become a success and, in turn, benefit innovative start-ups in particular, will very much depend on the extent of trust users will be likely to put in the new system.

In sum, Chapter II shows that the structure of the UPC presents several imbalances that are particularly critical for financially constrained businesses such as start-ups and therefore may distort their innovative activities.

However, while the concrete proposals tailored to individual problems can certainly mitigate the inherent imbalances to the disadvantage of start-ups, they are probably not sufficient to re-equilibrate the entire system and avoid broader, potentially harmful, consequences for start-ups.

Therefore, Chapter III fundamentally re-considers the UPC system and argues in favour of a different design of the court structure for unitary patent protection.

The analysis in Chapter III concludes that start-ups are more likely to be in the position of defendants. Therefore, they would be potentially more affected by the identified imbalances which, in addition, generally favour – either directly or indirectly – more resourceful and established businesses. It is not possible to assert with certainty whether the features and the imbalances of the UPC system will lead to an increase of patent trolling behaviour and other abusive behaviours relating to patent law litigation in the EU. The safeguards envisaged in the system can certainly help to contain abusive practices. None of them would however be sufficient to comprehensively re-equilibrate the observed asymmetries. As a consequence, the risk that start-ups may well become most favoured targets of litigation in the future, in the context of actions filed by competitors or trolls, is real and very high. The problem is that when this occurs, innovative activities of start-ups will be affected. This is not only so because of the resources that they need to invest in litigation as such, thus being diverted from research and development and production, but also because uncertainty about the outcome of most risky litigation would have a chilling effect on the willingness of third parties to invest in start-ups or to acquire start-ups.

A solution that would be capable of more comprehensively re-equilibrating these asymmetries would require a fundamental redesign of the entire system. In this regard, from the analysis in Section B, Chapter III, it results that despite of the need to rethink and reassess the institutional structure and despite of the importance of specialisation and training of judges, a judicial system more aligned to the one of EU trade marks would be better suited for the needs of start-up litigants as financially more constrained businesses. In this regard, Chapter 3 shows that, following the example of the EU trade mark system, a litigation system for an EU patent that builds on litigation before national courts would better address the need of proximity of litigation for the cases in which the defendant has either her domicile or an establishment in the EU, pursuant to Article 125(1) EUTMR. In addition, this proposal would help to mitigate, at least in part, the high risks deriving from the broad territorial scope of the effects of decisions. In fact, as far as Article 126(2) EUTMR is concerned, if the plaintiff files an action before the EU trade mark court of the Member State where the infringement took place, the effect of the judgment will be restricted to acts committed or threatened within that forum state. However, in the cases in which the defendant does not have neither her domicile nor an establishment in any of the Member States, the envisaged EU patent regulation should depart from Article 125(2) and (3) EUTMR wording and rather foresee the competence of the courts of the state of infringement with jurisdiction limited to that forum state. In fact, although this may be more problematic for an EU start-up plaintiff who might need to bring the action in several Member States, it results in a more balanced approach. Overall, such a design would also contain the costs of litigation for the parties. The savings derive from the possibility to litigate before a less distant court, in the language of the parties and based on familiar rules of procedure. It would therefore constitute a

more balanced, more accessible and less uncertain system for litigants. A litigation system building on national courts would particularly be in the interest of financially constrained litigants, such as start-ups. In addition, also the overall budgetary and administrative cost would be considerably lower when compared to the envisaged UPC structure, because the alternative proposed system would not require the establishment of an additional and separate court as such. Furthermore, the adoption of a system at EU level would not even need to be approved and ratified by the single Member States pursuant to their respective constitutional procedures and rules and would therefore allow to overcome also the block that has been reached in this regard.

In addition, the findings of the present study open grounds for further research at several levels. First of all, it shows the need and importance of additional and more updated economic studies, both quantitative and qualitative, on the interplay of start-ups and innovation and on their concrete use of the patent system, in particular in Europe. Secondly, the dissertation did only address but did not analyse in detail the implications that the provisions concerning the patent as an object of property at national, European and unitary patent level, may have on the uses of the patent as an asset. These provisions are relevant to the extent that they can have consequences for example on licencing, on the use of the patent as a security or collateral, as an asset to transfer within merger transactions or as a levy in execution. Lastly, the study concludes that an alternative system which does not contemplate the existence of a UPC but relies instead on national courts, would be more suited to respond to the needs of start-ups. The construction of such a system would raise however several implications which need further study and analysis. In particular, it is necessary to study and develop appropriate methods to enhance the specialisation of judges at national level and the functioning of specialised courts. Similarly, also the need of specialisation on patent matters at CJEU level, requires further analysis.

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