



AperTO - Archivio Istituzionale Open Access dell'Università di Torino

Patent Litigation

This is the author's manuscript	
Original Citation:	
Availability:	
This version is available http://hdl.handle.net/2318/1870379	since 2022-07-21T15:17:43Z
Publisher:	
Springer	
Published version:	
DOI:10.1007/978-1-4614-7883-6_585-2	
Terms of use:	
Open Access Anyone can freely access the full text of works made available as under a Creative Commons license can be used according to the tofall other works requires consent of the right holder (author or product).	erms and conditions of said license. Use

(Article begins on next page)

protection by the applicable law.

Patent litigation

Synonyms

patent infringement lawsuit, patent annulment

Definition

Patent litigation refers to patent infringement lawsuits or revocation proceedings. Infringement is the act of making, using, selling a patented invention without the permission of the patent owner. Revocation proceedings refers to the claim on patent validity before civil courts.

Introduction

A patent is the exclusive right granted by a government to an inventor to manufacture, use, or sell an invention for a certain number of years in exchange for detailed public disclosure of the invention itself so as to encourage research and development activities fostering knowledge dissemination.

In order to be patentable an invention must satisfy requirements concerning novelty, usefulness and non-obviousness.

A patent is not a perfect protection against imitation, but it grants the patent holder the right to sue intruders once they have been identified. Conversely, third parties have the right to challenge the validity of patents granted by the patent authority.

Patent litigation can thus take two distinct forms: infringement or revocation proceedings.

Patent infringement is the act of making, using, selling, or offering to sell a patented invention without the permission of the patent owner. The economic significance of a patent depends on its scope: the broader the scope, the larger the number of competing products and processes that will infringe the patent. The claims contained in the application are the basis of the extent of patent protection as they determine what third parties are legally allowed to do.

Revocation proceedings refer to the claim on patent validity before civil courts that may be carried out by firms interested not to be sued for infringing "wrongly" granted patents, either autonomously or as a counterclaim in a cause for patent infringement.

Proceedings before a national tribunal for revocation as part of patent litigation are not to be confused with patent opposition, which is an administrative procedure contained in the article 99 of the European Patent Convention allowing third parties to question the validity of a patent granted by the European Patent Office (EPO) within nine months from its publication. Patent opposition applies to the European patent at the European-wide level, whereas revocation proceedings within litigation apply to national jurisdictions.

Infringement and validity of European patents are currently under the jurisdiction of national courts and authorities of the member states of the European Patent Organisation. National courts and authorities of the contracting states of the European Patent Convention are competent to decide on the infringement and validity of European patents.

Despite the Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights, relevant differences still exist as patent litigation and court judgments on validity and infringement vary significantly from one country to another (EPO 2013). In practice, this gives rise to a number of shortcomings: high costs, risk of diverging decisions and lack of legal certainty. (Luginbuehl 2011).

The European patent system is currently undergoing major reforms aimed at overcoming existing fragmentation, which becomes increasingly problematic as innovation and industrial R&D has assumed a global scope. In December 2012, the European Parliament approved the EU unitary patent package, whose ratification by the individual member states will give rise to a European patent with unitary effects in all jurisdictions involved and to the creation of a Unified Patent Court (UPC) with exclusive jurisdiction to hear infringement and invalidity actions. The Unitary Patent Court will hopefully be set up by the end of 2022 or early 2023.

Institutional features

European inventors can obtain patent protection by filing several national applications or, alternatively, one patent application to the European Patent Office (EPO) in which several States adhering to the 1973 European Patent Convention (EPC) are designed. The granting of a European patent allows the applicant to achieve a bunch of patents that are valid in different countries. After grant, however, the patent is treated as separate rights, each having a limited scope confined to the territory of the respective member state. Whether or not the national parts of the European patent are infringed or invalid is then determined based on the national laws of the respective member states of the European Union.

Relevant institutional differences among the jurisdictions still exist concerning several aspects such as the existence of bifurcation, remedies for patent infringement, forum shopping, and the allocation of legal costs as illustrated by Graham and Van Zeebroeck (2014).

Bifurcation

In terms of institutional settings, a major difference relates to whether litigants are permitted or required to address infringement and invalidity claims within the same court and suit or, as in a bifurcated system, infringement is heard and determined separately from validity.

The German system is a bifurcated one: invalidity challenges, either standalone invalidation challenges or appeals of decisions rendered by the German Patent Office, can only be brought to the Federal Patent Court, whereas infringement actions can be lodged in any of the twelve competent district courts. In the French, British, Dutch, Italian and Belgian systems, patent infringement and

invalidity actions, either for national patents or for national validations of patents granted by the EPO, are brought to the same court.

The bifurcated patent system is positively considered because of quick decisions and low costs, but it might be potentially biased toward the patentee in two ways. The fast infringement proceedings in the regional courts mean, in fact, that it is possible to get to an injunction before the patent can be invalidated by the slower invalidity courts. In addition, a bifurcated system is subject to the so-called Angora cat problem: the patentee will argue for a narrow interpretation of his claim when defending the patent, but an expansive interpretation when asserting infringement.

Injunctions

If a patent holder discovers that his patent is being infringed by products or services belonging to other parties he/ she faces the decision to file a lawsuit and, following that, either to engage the alleged infringer in a pretrial settlement negotiation or to file suit in court claiming damages for the infringement.

The TRIPS Agreement generally provides for injunctions and damages as a remedy to patent infringement, but the specific procedures and standards for awarding these remedies are left to the member states which apply different conditions and thresholds.

Courts in several member states allow in principle preliminary injunction, which is granted very early in a court action and restrains the defendant from infringing the patent during the pendency of litigation (Cotter 2012).

If a preliminary injunction is issued, the plaintiff will nearly always have to post a bond for securing any costs or damages that the defendant will suffer if the preliminary injunction is later found to be improperly granted. The amount of the bond depends on the circumstances of the case and is left to the court's discretion. If the plaintiff wins at the trial, the preliminary injunction usually becomes permanent. If the defendant wins, the preliminary injunction is removed and the defendant can seek recovery against the bond.

Cross-border preliminary injunctions forbidding accused infringers from practicing the litigated patents both in the domestically and abroad are found in the Dutch litigation system with the result of a "forum shopping strategy, as patent holders may stop infringement of their patent throughout Europe.

Belgium too has become a preferred venue for patent owners who wish to quickly enforce their patent rights: Belgian courts assume, in fact, in their preliminary injunctions the prima facie validity of the patents, even when an opposition was pending, or appealed at the EPO.

Damages

Most jurisdictions provide for three "standard methods" for damages assessment based on the calculation of lost profits, reasonable royalty, and infringers' profits (unjust enrichment) (Reitzig et al. 2007).

In the case of lost profits, the patentee shall be reinstated in a position where he/she would have been but for the infringement. The calculation method is accepted by all major jurisdictions (USA, Japan, Germany, UK, and France).

In the US jurisdiction, the patentee, in order to be awarded lost profits, has to show causation, establishing that" but for" the infringement, she would have made additional profits. In 1978, the Court of Appeals for the Sixth Circuit put forth a test designed to determine whether a patent holder is entitled to recover for lost profits by the infringement (Panduit Corp. v. Stalin Bros. Fibre Works, Inc., 575 F.2d 1152, 1156 (6th Cir. 1978)).

It is a four-step test requiring that the patentee establishes: (1) there is demand for the patented product; (2) absence of non-infringing substitutes; (3) manufacturing and marketing capability to exploit the demand; (4) the amount of profit that would have been made absent the infringing product.

Assuming that the four Panduit conditions are met, lost profit evaluation requires to infer how the market would have evolved absent infringement and to compare the hypothetical behavior of both the patentee and the infringer with their actual behavior. The difference between the "but for" and the actual profit represents the patent holder's lost profit damage.

Proof of damages is simpler when the patentee and the infringer compete in a two-supplier market, notwithstanding a market share analysis can be used even in case of several firms in the market in order to determine a measure of lost profit award.

Once lost sales are determined total lost profits can be calculated by measuring the incremental profits on lost sales plus profits lost on price erosion.

To the extent the patentee does not satisfy "but for" causations required by the Panduit steps, he/she is entitled to a reasonable royalty. The courts attempt to reconstruct the hypothetical bargain that the parties would have negotiated had they willingly tried to do so at the time infringement began. A hypothetical negotiation between a willing licensor and a willing licensee is imagined generally relying on fifteen factors set forth in Georgia- Pacific Corp. v. United States Plywood Corp. (1970).

The case law has established a few guiding principles that should be present in any reasonable royalty determination: first of all the best measure of reasonable royalty is an established royalty rate in the industry; second the hypothetical negotiation takes place at the time the infringement began, meaning that infringers' sunk cost are not part of the infringer's anticipated profits; third, the patentee need not prove any actual harm to be entitled to a reasonable royalty (Frank and De Franco 2000).

A damage award can be composed of lost profits and a reasonable royalty as, for instance, in the case where lost profits include lost sales for which the patentee had manufacturing capacity, while a reasonable royalty accounted for additional sales that exceeded the patentee's manufacturing capacity. In case the patent holder is a University or a research institute the damage is entirely based on a reasonable royalty.

The third way of calculating damages is based on infringer's profits. In Germany the damage is based on the legal fiction that in using another's patent, the infringer undertook a business on behalf of the rights-owner, who would thus be entitled to obtain all profits made from such business (Reitzig et al. 2007). Granting "infringers' profits" is formally not allowed in France and the US, even if the US term "unjust enrichment" may be interpreted as a rather close notion.

In case of willful infringement, in the US, whether the damage award is in the form of lost profits or reasonable royalties, courts have discretionary authority to enhance the damage award by three times.

Courts have sometimes awarded inflated reasonable royalties that do not reflect the market ones, but rather imply a deterrent function against future infringements (Love 2009).

Choice of forum

When a patent infringement suit involves a defendant domiciled in an EU member state, national courts of member states must exercise jurisdiction in accordance with Articles 2 and 5(3) of the Brussels Regulation. Under this regime, a plaintiff may bring an action in the courts of the defendant's domicile or in the state(s) in which the alleged infringing product was manufactured or commercialized in breach of a local patent. Dutch courts have even exercised jurisdiction over foreign defendants for violations of foreign patents, where the defendant companies constitute a corporate group, and the head corporation of the group is domiciled in the Netherlands.

This means that patent litigants in Europe are permitted a choice of forum which, giving rise to an opportunity to engage in 'forum shopping', a strategic choice of court venues in order to obtain a favourable outcome leading to economic inefficiencies. Parties try to take advantage of differences in national courts' interpretation of harmonised European patent law and in procedural laws, as well as differences in speed and in the level and scope of damages awarded.

Forty percent of all patent cases in Europe are heard in a single country—Germany—despite only 11% of European patents originating in Germany.

Forum shopping is a common practice in the US too, "as any civil action for patent infringement may be brought in the judicial district where the defendant resides, or where the defendant has committed acts of infringement and has a regular and established place of business." 28 USC. § 1400. For instance, as recalled by Jacobsmeyer (2018), the Eastern District of Texas became very popular with patent holders in the early 2000s as it developed a reputation as a favorable forum for plaintiffs. In recent years, that district heard roughly one third of all U.S. patent cases every year.

The allocation of legal costs

Two main systems for allocating litigation costs are applied, namely, the "American system", where each party bears its own costs and the "British system", where the loser incurs all costs. In an intermediate position lie the systems, which allow a partial fee shifting.

The legal-cost allocation rule plays a role in favoring patent litigation or settlement and bears implications on the royalty-bargaining process.

The Unified Patent Court

In order to overcome duplications and shortcomings in 2012 EU countries and the European Parliament agreed on a legislative initiative consisting of a regulation creating a European patent with unitary effect ('unitary patent') and an agreement between EU countries to set up a single and specialised patent jurisdiction (the 'Unified Patent Court').

The Unitary Patent system is inextricably linked to the creation of the Unified Patent Court, which will have jurisdiction over Unitary Patents and "classic" European patents. The EU regulations, establishing the Unitary Patent system (No 1257/2012 and No 1260/2012), entered into force on 20 January 2013, but they will only apply as from the date of entry into force of the UPC Agreement. Such international treaty, signed by 25 EU member states on 19 February 2013, will create a specialised patent court (the UPC) with exclusive jurisdiction to hear infringement actions, invalidity actions and counterclaims, as well as actions for provisional and protective measures and injunctions relating to European patents and European patents with unitary effect.

The UPC will comprise a Court of First Instance, a Court of Appeal and a Registry. The Court of First Instance will be composed of a central division (with seat in Paris and two sections initially based in London and Munich) and by several local and regional divisions in the contracting member states to the Agreement. The Court of Appeal will be located in Luxembourg.

Generally, claimants will bring action for revocation before the central division and will bring actions for infringement before a local/regional division in a member state in which the infringement has occurred or where the defendant is domiciled.

The system allows for a choice between bifurcation- the separation of infringement and validity claims into separate court actions as in the German system -and an integrated process for hearing infringement and invalidity cases: the regional courts have, in fact, the discretion to refer counterclaims for revocation raised by the defendant to the central division.

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.

As for the award of damages art.68 of the UPC states:

- (1) The Court shall, at the request of the injured party, order the infringer who knowingly, or with reasonable grounds to know, engaged in a patent infringing activity, to pay the injured party damages appropriate to the harm actually suffered by that party as a result of the infringement.
- (2) The injured party shall, to the extent possible, be placed in the position it would have been in if no infringement had taken place. The infringer shall not benefit from the infringement. However, damages shall not be punitive.
- (3) When the Court sets the damages:

- (a) it shall take into account all appropriate aspects, such as the negative economic consequences, including lost profits, which the injured party has suffered, any unfair profits made by the infringer and, in appropriate cases, elements other than economic factors, such as the moral prejudice caused to the injured party by the infringement; or
- (b) as an alternative to point (a), it may, in appropriate cases, set the damages as a lump sum on the basis of elements such as at least the amount of the royalties or fees which would have been due if the infringer had requested authorization to use the patent in question.

Legal costs and other expenses incurred by the successful party shall, as a rule, be borne by the unsuccessful party.

The UPCA will enter into force as soon as thirteen states, which must include France, Germany and the United Kingdom, have ratified it, with a transitional period of seven years during which actions of litigation may be brought before national courts (Agreement on a Unified Patent Court and Statute 2013b). France and 14 other member states, including UK, have ratified it, but two major news in spring 2020 delayed its achievement: the first one related to UK and the second one to Germany.

In view its withdrawal from the European Union, the United Kingdom no longer wishes to be a party to the Unified Patent Court system so that on the 20th of July 2020 it withdrew its ratification of the Agreement on a Unified Patent Court and the Protocol on Privileges and Immunities of the Unified Patent Court.

This means the central division of the court with responsibility for life sciences cases, that had been allocated to London, will have to be moved.

The German Approval Act was originally passed in 2017 unanimously by the Second Chamber of the German Parliament (*Bundestag*) when only about 35 out of the, then, 631 members were present. In June 2017, the German Constitutional Court asked the German president not to sign off on the implementation of the Unitary Patent Package because of a complaint lodged by a German attorney alleging that the Unitary Patent Package violated the German Constitution ('Basic Law').

The German Federal Constitutional Court declared on 20 march 2020 Germany's ratification of the UPC Agreement void, because the purported ratification amended the German Constitution in substantive terms, though it had not been approved by the *Bundestag* with the required two-thirds majority. As no appeals are possible from a decision by the German Federal Constitutional Court, the Bundestag is then to vote again during this legislative period.

At the end of 2020, the Bundestag and Bundesrat voted on the UPC Accompanying Act (Begleitbesetz), achieving a two-thirds majority. However, the Constitutional Court has received two constitutional complaints so that German ratification of the UPC is once again on hold.

The German government deposited on September 27th 2021 the instrument of ratification for the PAP-Protocol which is a decisive step for the establishment of the Unified Patent Court after the work had been on hold for several years. Once the German ratification procedure is complete, the

final preparatory steps will be taken to set up the Unitary Patent Court, hopefully by the end of 2022 or early 2023.

1. Empirical Evidence

Characteristics and changes in the US patent litigation system have been studied by a large number of authors (Lanjouw and Schankerman 2001; Atkinson et al. 2009; Henry and Turner 2006).

Empirical evidence on patent litigation in the largest and most judicially active countries of the European Union is provided by recent studies, which give some real insights based on recent patent suits.

Graham and Zeebroeck, (2014) analyzing a dataset of European patent litigation during 2000-2010, comprising approximately 9000 judicial patent decisions from seven European countries, show that the incidence of litigation and the bases of judicial outcomes diverge radically across the different countries and varying patented technologies in Europe. Relevant differences are also detected in the likelihood of patent litigants raising patent validity and infringement claims.

Litigation rates are highest in Belgium and France, whereas Germany and the UK show a low rate. Patent litigation varies widely across technology sectors, with the majority of cases in Europe focusing on patents granted for industrial processes, civil engineering, consumer goods, machinery and transport technology.

Litigation costs significantly differ in European jurisdictions ranging from 50.000- $200.000 \in$ in France, Germany, the Netherlands, but being considerably higher in the UK, 150.000- $1500.000 \in$, which may explain the lower number of cases brought to court in the UK. It is worth noticing that the average cost in the US is much higher ranging from 1.000.0000 to $10.000.000 \in$.

On the assumption that the unified Patent Court will offer litigation at roughly the same cost level as the three largest low-cost national systems, Harhoff (2009), by utilizing different data sources, estimates that the total savings from avoiding duplication and from cost reduction stemming from the creation of the unified Patent Court are considerably larger than the actual operating costs, even for the most conservative scenarios.

Using a dataset covering about 80 % of all patent litigation cases in Germany between 2000 and 2008, Cremers et al.2015 estimated the likelihood of within-trial settlement. The results suggest that pre-trial failure of settlement negotiations can to some extent be offset by within-trial settlement through efforts made by the court, but that the disposition to settle is to a larger degree determined by firm-specific stakes and strategies in the case.

Cremers et al. 2016 build a model to analyze the key trade-off between bifurcated and non-bifurcated systems and how it affects the incentives of plaintiffs and defendants in patent infringement cases. Using detailed data on patent litigation cases in Germany (bifurcated) and the U.K. (non-bifurcated), they show that bifurcation creates situations in which a patent is held infringed that is subsequently invalidated. Their research contributes to the relevant literature by

offering the first-time quantitative evidence on the implications of the separation of infringement and validity.

A comparison of 8323 patent litigation cases across Germany, France, the Netherlands and the U. K., covering cases filed during the period 2000-2008, (Cremers et al. 2017) highlights relevant differences in the four jurisdictions concerning the number of caseloads, settlement rate, average time for judgment, outcomes, characteristics of the litigants, fragmentation, sector distribution of litigants, value of patents.

Out of 6,739 cases in Germany, 5,121 are infringement cases heard by the three regional courts covered by the study whereas 1,618 are revocation cases. By far the number of infringement cases heard by German courts exceeds the combined number of cases in all three other jurisdictions. Depending on how cases are defined Germany has between 12 and 29 times as many litigation cases as the UK; the difference is similar with regard to the Netherlands; compared to France, Germany has around six times as many cases.

The settlement of disputes reveals relevant differences across countries: settlement is more likely in Germany (60% of cases) as compared with UK (40%). As for cases decided by a judge, revocation is the most likely outcome regardless of whether the initial claim was for infringement or revocation in UK, whereas infringement is in Germany and the Netherlands. France is characterized by a large share of patents that is held not to be infringed, but valid.

The time lag between the filing for a claim for infringement and a first decision is less than one year in Germany, the Netherlands and the UK, nearly double in France. Claims for invalidity are decided fastest in UK (11.2 months), but take a lot longer to be decided in Germany (15 months) and the Netherlands (11.4 months). Again, invalidity cases in France take significantly longer (19.8 months) than in any other jurisdiction.

There are large differences across jurisdictions with regard to case outcomes. Infringement cases with court decision amount to about 22% in Germany, 36 % in the Netherlands, 14.7% in the UK, but only 5.6% in France where most patents are held valid, but not infringed. In the UK the large share of revoked patents of cases that allege infringement, 26%, is due to the fact that, in about 60% of cases alleging infringement, the defendant counter-claims for revocation.

Outcomes of invalidity actions too differ considerably across jurisdictions. Whereas in the UK 42% of patents are revoked if the case if decided by the judge, less than half as many invalidity cases end with revocation in Germany and France. The risk of infringing a patent that forms the subject of a revocation action is very low in all jurisdictions (4% in the UK and 7% in Germany).

Fragmentation leading to parallel litigation of the same patent in multiple jurisdictions is low in Germany (2%) and France (6%), but more relevant in the Netherlands (15%) and in the UK (26%). However, as the number of cases in the UK and the Netherlands is considerably lower than in Germany, the upper bound for the share of duplicated cases lies in Germany.

As for the characteristics of the litigating parties involved in the patent cases, half of all cases involve only domestic claimants in Germany and France. The share of cases with only domestic claimants drops below 40% in the UK and the Netherlands. The data look similar for defendants,

with the exception of Germany where the share of cases with only domestic defendants exceeds 60%.

By sorting litigants by type -companies, individuals, universities, public research institutes, government, as well as international institutions- the largest differences in the shares of companies and individuals involved in patent cases are found across jurisdictions rather than between claimants and defendants. France, where there are almost twice as many individuals as defendants than there are claimants, is an exception. Overall the share of companies as claimants or defendants is smallest in Germany, on the contrary the greatest share of litigants in the UK falls into the "large" category. In all other jurisdictions, micro- and small companies represent the largest share of litigants.

As for the sector distribution of litigating companies the share of pharmaceutical companies in the UK is the highest of the four jurisdictions amounting to 30%. In Germany, in contrast, companies are concentrated in manufacturing, notably the machinery and engine industry. In the Netherlands, the share of companies in the services industry (especially finance, insurance, and real estate) stands out. France doesn't show a strong characterization.

The number of forward citations received worldwide, a proxy for patent value, is significantly higher for the litigated patents compared to the group of non-litigated patents.

A central point has been raised by Henkel et al. 2019 pointing out that a substantial number of patents tested in court for validity are invalidated. Their focus was on Germany, where revocation proceedings are separate from infringement suits and where, in court decisions during the period of 2010–2012, 45% of patents were determined to be fully invalid and 33% to be partially invalid. Based on data gleaned through expert interviews, a survey among lawyers, and an econometric analysis of court judgments, they found the likelihood of (hypothetical) invalidation of a randomly picked patent to be in the same range as that for actually adjudicated patents. This indicates a seriously flawed patent system because of restrictions and costs caused to users and innovators. An approach based on a significant increase of the inventive step required for patent grant combined with a smaller increase of the inventive-step standard in litigation should mitigate the problem.

6. Strategic use of rules

First economic analyses of patent litigation stressed the role of divergent expectations (Priest and Klein 1984) and the presence of asymmetric information (Spier et al. 1993) in fostering litigation.

Later models argue that patent litigation reveals important information for potential entrants (Choi 1998), analyze patent enforcement through litigation when firms have private information (Llobet 2003), compare the two doctrines of damages, lost profit and unjust enrichment (Schankerman et al. 2001).

Forum shopping models provide a set of predictions regarding plaintiffs' court preferences, and the way these preferences depend on the market proximity between the plaintiff and the defendant. Gaessler et al. (2017) investigate both theoretically and empirically the determinants of forum shopping in patent litigation by building a model in which a patent holder can sue an alleged infringer before one of several courts. Courts are assumed to differ in many dimensions: the

litigation costs incurred by the patent holder and the alleged infringer, the probability that the court rules in favor of the patent holder and the length of the infringement proceeding.

Several studies have pointed out that the litigation system is likely to play a crucial role in the new business models where patents are used as assets or as legal threats. Patent litigation can then be abused to extort licensing payments, even if the validity of the patent is questionable, especially by patent-assertion entities (also known, in a pejorative term as "patent trolls") whose aim is to acquires patents of failed companies or independent innovators using them to threaten suit against alleged infringers, without having the intention of actively using the patent they assert. In particular, in component-driven industries, notably information technology, trolls engage in deliberate tactics allowing them to take product developers by surprise once they have made irreversible investments (Lemley and Shapiro 2007).

As trolling activity seeks to exploit structural and procedural weaknesses of the patent and judicial system to earn rents, an optimally designed patent litigation system should minimize the room for such welfare reducing behavior.

The significant occurrence of trolls in the USA may find its roots in the high costs of legal proceedings, cost allocation rules (each party bears its own costs), contingency fees, high damage awards, and injunctive reliefs, characterizing the US litigation procedure. Moreover, questionable examination quality in patent granting and broadly defined patentable subject matter also play a role.

The weaker presence of "trolls" in Europe is presumably due to the fact that the patent systems in Europe deviate from the US system in several crucial points. Generally, court proceedings are much less costly, cost allocation favors' the winning party, damage awards are not excessive, most courts have sought a careful balance between the rights of the parties, injunctions are not issued automatically and the quality of patent examination has been considerably better than in the USA.

However, one should not assume that the European system is troll-proof: recently patent funds have acquired patent portfolios consisting of several thousand patents, largely European ones, and may seek to enforce them (Harhoff 2009). Besides Tietz (2019) warns that, although the structure of the Unified Patent Court (UPC) appears to be set up to facilitate efficient post issuance patent review (PIPR), the disincentives for opting in suggest that the UPC will be a less effective troll-fighting vehicle than expected.

Conclusions

The birth of the UPC will represent a considerable progress for the management of intellectual property in the EU in order to overcome duplication, inconsistencies and to lower litigation costs. The result will be a patent protection for all participating member states based on a single application and validation with a Unified Patent Court (UPC) with exclusive jurisdiction to hear infringement and invalidity actions.

A relevant argument put forth by the proponents of the UPC is that it will also reduce strategic behavior in Europe. This may be true for forum shopping, that is to say a strategic choice of courts venue by litigants to obtain a favorable outcome: nevertheless a new form of forum shopping might

be originated by the UPC if local divisions behave differently with respect of the willingness to grant EU-wide injunctions and with respect to the attitude towards bifurcation.

As for the consequences of the EU-wide injunction, it is worth stressing that it might represent an incentive for "trolling activities", so far not so common in the EU, suggesting a cautious use of injunctions.

Cross References

Compulsory Licensing

Essential Facilities

European Patent System

Innovation

Intellectual Property: Economic Justification

International Litigation – Arbitration

Litigation Decision

Patent Opposition

Trade Secrets Law

References

- 1. Atkinson S, Marco A, Turner J (2009) The economics of a centralized judiciary: uniformity, forum shopping and the federal circuit. J Law Econ 52:411–443
- 2. Choi J (1998) Patent litigation as an information-transmission mechanism. Am Econ Rev 88:1249–1263
- 3. Cotter T (2012) A research agenda for the comparative law and economics of patent remedies in Bagley M and Okediji R Global Perspectives on Patent Law. New York NY Oxford University Press.
- 4. Cremers, K, Schliessler, P (2015) Patent litigation settlement in Germany: why parties settle during trial. *Eur J* Law *Econ* 40, 185–208.
- 5. Cremers K. et al. (2016) Invalid but infringed? An analysis of the bifurcated patent litigation system. Journal of Economic Behavior and Organization 131: 218–242.
- 6. Cremers K et al. (2017) Patent litigation in Europe. Eur J Law Econ 44, 1–44.

- 7. Directive 2004/48/EC. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:195:0016:0025:en:PDF
- 8. EPO (2013a) Patent litigation in Europe, 3rd edn. European Patent Academy, Munich. http://www.eplit.eu/files/downloads/patent litigation in europe 2013 en.pdf
- 9. EPO (2013b) Agreement on a unified patent court. http://documents.epo.org/projects/babylon/eponet.nsf/0/A1080B83447CB9DDC1257B36005AAAB8/\$File/upc agreement en.pdf
- 10. Frank R, DeFranco D (2000) Patent infringement damages: a brief summary. Fed Cir B J 10:281–291
- 11. Gaessler, F, Lefouili, Y (2017) "What to Buy When Forum Shopping? Analyzing Court Selection in Patent Litigation" TSE Working Paper No. 17-775. Available at SSRN: https://ssrn.com/abstract=2931351 or http://dx.doi.org/10.2139/ssrn.2931351
- 12. Graham S, Van Zeebroeck N (2014) Comparing patent litigation across Europe: a first look. Stan Tec L Rev 17:655–708
- 13. Harhoff D (2009) Economic cost-benefit analysis of a unified and integrated European patent litigation system. Final Rep., Eur. Comm. http://ec.europa.eu/internal_market/indprop/docs/patent/ studies/litigation_system_en.pdf
- 14. Henkel J, Zischka H (2019) How many patents are truly valid? Extent, causes, and remedies for latent patent invalidity. *Eur J* Law *Econ* 48, 195–239.
- 15. Henry M, Turner J (2006) The court of appeals for the federal circuit's impact on patent litigation. J Legal Stud 35:85–117
- 16. Jacobsmeyer B (2018) Forum Shopping in Patent Cases: Lessons for the Unified Patent Court. Mich. Telecomm. & Tech. L. Rev 25:131-162
- 17. Lanjouw J, Schankerman M (2001) Characteristics of patent litigation: a window on competition. RAND J Econ 32:129–151
- 18. Lemley M (2010) Where to file your patent case. AIPLA Q J 38:1–35
- 19. Lemley M, Shapiro C (2007) Patent holdup and royalty stacking. Tex Law Rev 85:1991–2049
- 20. Llobet G (2003) Patent litigation when innovation is cumulative. Int J Ind Organ 21:1135–1157
- 21. Love B (2009) The misuse of reasonable royalty damage as a patent infringement deterrent. Mon Weather Rev 74:909–948
- 22. Luginbuehl S (2011) European patent law: towards a uniform interpretation. Edward Elgar, Northampton

- 23. Priest G, Klein B (1984) The selection of disputes for litigation. J Legal Stud 8:1–56
- 24. Reitzig et al. (2007) On sharks, trolls, and their patent prey—unrealistic damage awards and firms' strategies of "being infringed". Res Policy 36:134–154
- 25. Schankerman M, Scotchmer S (2001) Damages and injunctions in protecting intellectual property. RAND J Econ 32:199–220
- 26. Spier K, Spulber D (1993) Suit settlement and trial: a theoretical analysis under alternative methods for the allocation of legal costs. J Legal Stud 11:55–81
- 27. Tietz J (2019) The Unified Patent Court and Patent Trolls in Europe. Mich. Telecomm. & Tech. L. Rev. 25;303-330
- 28. WIPO (2008) Chapter 2: Fields of intellectual property protection. In: Intellectual property handbook: policy, law and use. http://www.wipo.int/export/sites/www/about-ip/en/iprm/pdf/ch2.pdf

14