Workshop Report

Patent aggregation and its impact on competition and innovation policy

initiated by the EPO Economic and Scientific Advisory Board
Munich, 25 November 2014
Report
EPO Economic and Scientific Advisory Board
Workshop on patent aggregation and its impact on competition and innovation policy
Munich, 25 November 2014

Legal notice
This report is based on notes taken during the workshop. It does not purport to reproduce in extenso all the debates and points made. The views expressed and the information included in this report are purely those of the participants and do not necessarily reflect the views of the European Patent Office.
For questions or comments regarding this report, please contact the European Patent Office, Chief Economist, Theon van Dijk tvandijk@epo.org, or his assistant Karin Terzić kterzic@epo.org

© European Patent Office, 2015
Reproduction is authorised provided the source is acknowledged
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction</td>
<td>6</td>
</tr>
<tr>
<td>2. Patent market issues</td>
<td>7</td>
</tr>
<tr>
<td>2.1. Information asymmetry</td>
<td>7</td>
</tr>
<tr>
<td>2.2. Complexity and fragmentation</td>
<td>7</td>
</tr>
<tr>
<td>2.3. Patent hold-up and royalty stacking</td>
<td>8</td>
</tr>
<tr>
<td>2.4. Patent hold-out problem</td>
<td>8</td>
</tr>
<tr>
<td>2.5. Asymmetric bargaining positions</td>
<td>8</td>
</tr>
<tr>
<td>3. Types of aggregators and intermediaries, and their activities</td>
<td>8</td>
</tr>
<tr>
<td>4. Patent aggregation in Europe: evidence</td>
<td>9</td>
</tr>
<tr>
<td>4.1. Aggregation activities in Europe</td>
<td>9</td>
</tr>
<tr>
<td>4.2. The role of European litigation systems</td>
<td>9</td>
</tr>
<tr>
<td>5. Costs and benefits of patent aggregation</td>
<td>10</td>
</tr>
<tr>
<td>5.1. Potential benefits and costs for patent owners</td>
<td>10</td>
</tr>
<tr>
<td>5.2. Potential benefits and costs for users of patents/technology</td>
<td>11</td>
</tr>
<tr>
<td>5.3. Potential benefits and costs for consumers and society</td>
<td>12</td>
</tr>
<tr>
<td>6. Potential competitive effects of patent aggregation</td>
<td>12</td>
</tr>
<tr>
<td>7. Role for competition and patent policy</td>
<td>13</td>
</tr>
<tr>
<td>8. Conclusion and open questions</td>
<td>14</td>
</tr>
<tr>
<td>8.1. Main workshop conclusions</td>
<td>14</td>
</tr>
<tr>
<td>8.2. Open questions</td>
<td>14</td>
</tr>
<tr>
<td>9. References</td>
<td>15</td>
</tr>
<tr>
<td>Annex 1: List of participants</td>
<td>16</td>
</tr>
<tr>
<td>Annex 2: Programme of the workshop</td>
<td>18</td>
</tr>
</tbody>
</table>
1 Introduction

This report summarises the main discussions of the workshop organised by the Economic and Scientific Advisory Board (ESAB) of the European Patent Office (EPO) on 25 November 2014 at the EPO premises in Munich. The topic of this workshop was “Patent aggregation and its impact on competition and innovation policy”.

The workshop gathered over 40 economists, lawyers, patent professionals, industry representatives and delegates from Europe, the United States and Asia. The objective was to exchange views and arguments on patent aggregation, as well as to achieve a better understanding of the role of patent aggregation in Europe and its interplay with patent and competition policy.

Recent developments, especially in the past decade, have enabled the emergence of patent aggregation, broadly defined as any activity where patents initially obtained by different parties are brought under the control of a single actor or entity. Control essentially means the right to decide which party gets access to the patents and under what terms. Among them are patent markets, offering new ways of monetising and exploiting intangible assets. These patent markets were a reaction to the convergence of technologies, the recent rise in open innovation practices and the increasing complexity of products, which made more exchange of patents between invention generators and users necessary.

These developments have been accompanied by the emergence, primarily in the United States, of new entities whose business model relies on aggregating patents. Their activities may in turn have led to an increase in the liquidity and efficiency of these markets. In addition, trade in patent rights, where patents or licences could be more easily transferred away from the inventor, have allowed for a separation of the creation of new technologies on the one hand and their exploitation on the other hand, leading to new forms of division of labour in innovation processes. The aggregation of patents was thus further encouraged.

The workshop was organised in plenary and working group sessions. In the first plenary session of the workshop, eight stakeholders, representing patent aggregators, as well as academic and industry experts, shared their views on the topic. After this plenary session, participants were divided in working groups and asked to elaborate on questions that were intended to categorise the different types of patent aggregators and their activities, with a special focus on Europe.1 The major challenge, however, was addressed in the second round of group work when participants were asked to assess possible merits and drawbacks of patent aggregation in the broadest sense possible and to shed more light on how competition and patent policy can be used so as to allow the net benefits of aggregation to materialise to the largest extent possible.2

This report provides a summary of the workshop discussions, which took place under Chatham House Rules. While individuals are not named, their background may be noted in this report where this is helpful for the reader. The summary does not follow the chronological order of the workshop but presents the content thematically.

This report uses the following definition of patent aggregation, which was put forward by the workshop participants. It should be pointed out that discussions during the workshop went beyond the strict definition of patent aggregation, that is, the combination of patents from various owners. Workshop participants also spoke about patent intermediaries, which facilitate transfers of control of individual patents or patent portfolios from one party to another (and not necessarily combine patents from various owners).

---

1 “What types of patent aggregators (in the broad sense including patent brokers, patent pools, patent funds and offensive and defensive aggregators) are currently present in Europe? Are their activities increasing in Europe? How does Europe compare to the US in terms of presence of patent aggregators?”

2 “What are the costs and the benefits of the various forms of patent aggregation? What are the challenges for competition and innovation policy?”
Definitions:

**Patent Aggregation**
Patent aggregation describes any activity where patents that were previously owned by a number of different parties, are brought under the control of a single actor or entity. Control essentially means the right to decide which party gets access to the patents and under what terms. The motives for patent aggregation, either commercial or non-commercial, are not relevant in this definition.

**Patent Intermediary**
Patent intermediaries are organisations which match supply and demand of individual patents or patent portfolios, possibly in combination with technology or additional know-how, and facilitate patent-based transactions.3

The general view was that many types of patent aggregators and intermediaries are present in Europe, although they are not as widespread as in the US. The main consensus was that many types of patent aggregators are beneficial and contribute to creating markets for technology, thus solving market inefficiencies and improving incentives to innovate. Furthermore, many participants agreed that patent aggregation *per se* does not create competition concerns, but that individual behaviour and specific services offered can have negative welfare implications and should be judged on a case-by-case basis.

The remainder of this report is organised as follows. The next section discusses failures and other shortcomings of the patent market which patent aggregation may help to solve. Sections 3 and 4 categorise the existing types of aggregators, describe their activities and assess to what extent they are present in Europe. Next, sections 5 and 6 assess the costs and benefits of the different aggregator types as well as potential competition policy issues. The final sections discuss the possible role for patent and competition authorities and identify evidence gaps where further research is needed.

2. **Patent market issues**

Unlike other property markets, patent markets are complex and feature shortcomings which may cause illiquidity4 and inefficiencies (in terms of social welfare). The workshop participants identified several market problems that justify or even necessitate the presence of patent aggregators in the patent sphere.

2.1. **Information asymmetry**

One of the major issues in patent markets is information asymmetry between buyers and sellers. First of all, by definition, each patent is unique, meaning that no other directly comparable asset exists (or should exist). Furthermore, exchanges of patent ownership or patent licensing mostly occur as private bilateral transactions, the terms of which are usually kept secret. This and other factors make patents difficult to value. In addition, not only the value but also the quality (validity) of patents can be uncertain and the usual way to resolve validity in case of disputes is through litigation. However, this way of obtaining sufficient information is very costly and in practice parties often need deep pockets in order to be able to access the court system. The impact of information asymmetries is further exacerbated by the peculiarity that the value of patents often depends on other assets held by their owners.

2.2. **Complexity and fragmentation**

New or improved products are often a result of a combination of multiple technologies ("combinatorial innovations") that are protected by multiple patents and owned by a large number of different entities. The increasing complexity of related patents and the fragmentation of its ownership can result in a web of complementary or even overlapping property rights, which a company must overcome in order to be able to commercialise its product.

In such constellations patent markets are characterised by high search costs. Producers may find it difficult or expensive to identify and purchase or license all patents necessary to achieve the freedom to operate. Moreover, patent owners may also face serious difficulties identifying current users that are possibly infringing their patents. In addition, given the large number of patents and of various patent owners, bilateral transactions can become rather inefficient.

---


4 Market liquidity here means the ease and speed with which a patent transaction can be performed.
2.3. Patent hold-up and royalty stacking

Fragmented patent ownership might cause patent hold-up and royalty stacking. Patent hold-up might occur when a patent holder is able and has an incentive to claim royalties that far exceed the economic value of the protected invention. For example, if a company that requires a licence has already invested in a technology and the switching costs are higher than the requested royalties, it would hardly have another choice but to pay excessively high royalty rates demanded by the patent owner. The risk of being held up might become higher when patent ownership is dispersed. Hold-up might deter firms’ investments in innovation.

Royalty stacking might arise when multiple patents read on the same product and the producing company has to negotiate licences with several patent owners individually. In this case, the total or “stacked” royalty burden would exceed those royalties that one party owning all necessary patents for commercialisation would have requested.

However, several participants, mostly from the industry, expressed doubts that patent hold-up and royalty stacking are causing any, still less serious problems, since evidence on their existence is scarce.

2.4. Patent hold-out problem

Rather than patent hold-up being a problem, a number of workshop participants expressed concerns about patent hold-out (also called “reverse hold-up”). In their understanding, patent hold-out occurs when companies routinely ignore existing patents and resist taking the necessary licences from patent owners, because they perceive the probability of being compelled to pay as small. Such practices impede many licensors’ efforts to license and leave many small inventors, but also large companies, without appropriate compensation.

2.5. Asymmetric bargaining positions

In technology markets firms often invest in building patent portfolios in order to improve their bargaining position in licensing agreements vis-à-vis other market participants. For firms lacking the necessary resources to build patent portfolios, such as many small and medium-sized companies, this creates a disadvantage. Further asymmetry arises when market participants have different positions that affect litigation strategies and risks. For example, when involved in litigation with a producing entity, a company that specialises in monetising patents usually does not face a risk to be counter-suited or to be subject to negative effects on its brand reputation.

3. Types of aggregators and intermediaries, and their activities

Participants in the two parallel working group discussions identified the following types of entities that are actively aggregating patents, or for which patent aggregation is part of their business model:\textsuperscript{5}

\textbullet\textit{Patent pools:} A patent pool is a consortium of usually several for-profit companies which group together to license patents relating to a particular technology, to each other and to third parties. Patent pools typically have unified conditions for access to the pooled patents;

\textbullet\textit{Patent brokers:} Firms that facilitate patent transactions and help patent owners sell their assets, typically in exchange for a fee contingent on successful transfer. Brokers review patent portfolios or act as a financial exchange for licensing and trading patent rights. They often offer financial products and services related to intellectual property, such as patent portfolio auctions, patent portfolio rating and valuation or creation of public stocks indices based on portfolio quality.

\textsuperscript{5} It has been pointed out in the Introduction that the workshop discussions went beyond the strict meaning of patent aggregators and also covered patent intermediaries. The types of entity in the list are all aggregators to the extent that they obtain control over patents from various owners.
Practising entities: Firms that are active on the product (downstream) market as well as on the technology (upstream) market. They can either build up their own patent portfolios, among others through own research and development programmes, purchase or aggregate patent portfolios from other companies through merger and acquisition activities.

Non-practising entities (patent monetisation entities): Investment vehicles dedicated to exploiting patents. Patent monetisation companies license patents and/or enforce them through litigation and usually have a global perspective. They often create or acquire individual patents or patents owned by different companies, research institutes and universities, and compile them into industry-focused portfolios either with or without developing them further. Within the category of non-practising entities different forms can be distinguished:

- Privately vs. state funded: Most of the non-practising entities are privately funded and attract investments from all over the world. State-funded patent aggregators originate from Asia but also exist in Europe.

- Assertive: Assertive companies typically seek licensing revenues from operating companies that use the patents they control, through litigation or the threat of litigation.

- Non-assertive: The business model of non-assertive companies, in turn, is based on making acquisitions of patents in the open market in order to license them to their customers, to provide litigation support for a network of client companies and to offer insurance against patent litigation.

However, for many workshop participants it was impossible to agree on a clear-cut typology of patent aggregators. In reality there is a variety of different business models that are closely related to the operational essence and know-how of each aggregator. Most companies follow different business strategies in parallel or change their business models over time. For example, companies may exploit their patent portfolio related to one technology for defensive purposes, and assert patents related to another technology. Entities that initially focused on defensive strategies may turn into litigious aggregators if this patent assertion strategy turns out to be more sustainable.

4. Patent aggregation in Europe: evidence

4.1. Aggregation activities in Europe

There was general agreement among participants that aggregators of all types are already active in Europe. Aggregators that are active in Europe acquire most patents, which are often offered on the internet or in relevant magazines, from European players, like universities and small companies. Some aggregators collect patents with no particular industry or industry focus, while others aim at constructing strong (key) patent portfolios in particular technologies. So far, aggregators’ activities in Europe have primarily been defensive and to a lesser extent offensive. For example, patent pools, which, like other intermediaries, often originate from outside Europe and offer licences to companies that are active in Europe. Furthermore, a patent fund in one European country was recently established to assist inventors. However, since patent asserting entities are mostly global investment vehicles and draw money from all over the world, their participation in the European patent space is expected to increase.

4.2. The role of European litigation systems

Similar to the change in the US litigation system following the America Invents Act (AIA) which was signed in the United States in 2011, some participants representing US patent aggregators expected the changing European litigation system to have effects on the activities of patent asserting entities in Europe. The introduction of a cost-effective post-grant procedure to challenge the validity of a US patent allowed companies that are being sued for patent infringement, to seek a stay on litigation, and thus injunctions, until validity issues have been resolved. Therefore some patent assertion entities are beginning to use European patent systems where, in their view, injunctions are granted more easily. Especially the German bifurcation system is perceived as attractive by some US patent aggregators, because different courts deal with the issues of patent infringement and patent validity. Therefore, injunctions may be granted even before the invalidity of the patent has been assessed ("injunction gap").
There were opposing views on how the introduction of the unitary patent (UP) and the Unified Patent Court (UPC), which will be the single patent court for European patents covering 25 European countries, will influence the interest of non-practising entities in asserting patents in Europe. Some argued that because the UPC will allow for injunctions to be granted centrally for 25 European countries, and because of the implementation of a bifurcation system, Europe might become an attractive litigation arena.

On the other hand, others argued that there are circumstances in Europe that are generally perceived as limiting the scope for nuisance patent litigation in Europe, even after the introduction of the UP and UPC. These circumstances include the procedural rule that the losing part pays the other side's legal costs (which is not present in the US), the absence of pure software patents in Europe, the absence of juries in patent trials in Europe, lower levels of damages for patent infringement (only compensation and no triple damages for wilful infringement), the recent amendment to the Rules of Procedure (17th draft) of the UPC to prevent the “injunction gap” due to bifurcation and the current expectation that in practice regional and local divisions will seldom, if ever, order bifurcation.

5. Costs and benefits of patent aggregation

Most patent aggregators are trying to solve and/or exploit the market issues and shortcomings in patent markets previously described in section 2. Although several costs of the various forms of patent aggregation were put forward during the discussion, identified benefits appeared to outweigh these costs. Most participants felt that there is a certain need for patent aggregators to exist. The primary criterion when analysing the costs and benefits, however, was its impact on innovation.

The arguments that were put forward during the workshop are presented below. The following structure of the arguments emerged as most appropriate: the first subsection presents the costs and benefits for those who create patents/technology; the second subsection presents the costs and benefits for potential users of patents/technology; and the final subsection presents the effects that workshop participants anticipate for consumers and society as a whole.

5.1. Potential benefits and costs for patent owners

The following potential benefits were put forward by workshop participants during the plenary and group work sessions:

- **Reduction of litigation risks.** Aggregators might help to reduce the litigation risk of inventors. There are circumstances in which filing a legal suit and enforcing patent rights may be the only way for a patent owner to resolve the hold-out problem, that is, the problem that third parties are not willing to pay reasonable licence fees, or are not prepared to pay any licence fees at all. In such situations aggregators would purchase the patents from the original owner for a certain price and/or obtain the right to enforce them. Thus, they would “buy off” the litigation risk from the inventor helping him to generate income, thereby avoiding often lengthy litigation;

- **Earlier revenues.** Patent aggregators could reimburse companies upfront for their inventions, creating additional financial leeway for cash-restrained SMEs and start-ups. This could create additional strategic choices for companies to exploit their inventions;

- **High efficiency of licensing patents.** Aggregators are able to combine patents pertaining to one technology. This could make licensing more valuable, less costly in terms of transaction costs and time, and more accessible for potential licensees. It might also help innovators to monetise their inventions by increasing the rewards through licensing, which would not have been possible without aggregation. Additional revenues for patent owners might then be used for investments in new innovations;

6 Bifurcation of patent litigation occurs when infringement claims and (in)validity of a patent are decided separately by different and independent courts.

7 Bifurcation can result in the validity decision coming after infringement is decided. The time period between the two decisions is called ‘injunction gap’.
Less need to invent around. Aggregation might support better R&D decisions. By facilitating the exchange and integration of technologies, companies may not need to allocate resources to inventing around already existing technologies and can focus on funding new research areas; and

Commercialisation support. Patent aggregators may assist inventors to develop marketable products and to establish an adequate IP protection.

Participants put forward the following potential costs of patent aggregation:

Potential market power on the demand-side (monopsony power). If there are only few aggregators in the market for purchasing or licensing patents in a specific area, these aggregators may have monopsony power. This may lead to the situation in which they pay too low prices or licensee fees for patents. The revenues of innovators will be lower as a result and this may come at the cost of (further) innovation;

High service costs. The services provided by patent aggregators may come at a high cost and may amount to a large share of the revenues of the innovator.

5.2. Potential benefits and costs for users of patents/technology

As far as the users of patents or technology are concerned, workshop participants identified the following potential benefits of patent aggregation in its various shapes and forms:

Better coordination. Aggregators might be able to solve the coordination problem for technologies with fragmented patent ownership and facilitate the creation of standards. This may help to avoid inefficient bilateral bargaining such that the technology can be commercialised in a better way;

Reduction of possible royalty-stacking problems. Aggregation may provide a one-stop shop with lower transaction costs and thus may allow to overcome any possible royalty stacking problems by making licences available at reasonable prices from a single source;

Help to create freedom to operate. Aggregators might also ensure freedom to operate for producers by clearing the market from patents which could be used to hold them up in order to extract excessive royalties;

Reduction of litigation costs. An often practised way to conduct patent licence transactions is to litigate first and to agree afterwards on licensing the technology to settle the case. Therefore many patent aggregators specialise in assisting companies to help avoid such inefficient litigation by acquiring control over these patents and facilitating direct licensing agreements;

Access to patent portfolios for SMEs and start-ups. Some aggregators bring patents under their control in order to license them non-exclusively. This might allow especially SMEs and start-ups to access whole technology portfolios and compete on a level-playing field with large operating companies;

Reduction of information asymmetry. Aggregators might be able to decrease the lack of transparency and asymmetry present on patent markets. They may provide information on and valuation of patent portfolios and facilitate the implementation of the technology.

The following possible costs were identified during the workshop for patent and technology users:

Potential monopoly power and hold-up risk. If there are only few suitable aggregators in a specific technology or product area, they may charge (too high) fees for their services, considerably increasing the costs for producing companies. In particular, to the extent that aggregators are able to exploit a hold-up situation, they might even extract a level of royalties from their customers, which they could not have done without their strategic hold-up advantage;
Risk of increase in litigation. Some participants expressed their concerns that assertive non-practising entities can be very aggressive when enforcing their patents, because there is less at stake for them in the absence of downstream activities. Such behaviour could considerably increase the level of litigation, thus reducing the incentives by producing companies to invest in commercialisation activities;

Assertion of low-quality patents. Aggregators could even use their aggregated IP rights to assert low quality patents, hiding within a portfolio, on operating companies. Because low-quality and high-quality patents come in a packaged bundle, operating companies may in fact be paying for low-quality components as part of the package; and

Lock-in to inferior technologies. Aggregators might create a situation where practising companies may get locked into an inferior technology. This may happen when practising companies, due to lower transaction costs, prefer to license patents related to a specific technology from an aggregator, rather than patents related to a superior technology from multiple patent owners.

Improves diffusion of innovation. Aggregators often offer licences on a non-exclusive and non-discriminatory basis. This may add to the dissemination and distribution of innovation; and

Encourages the use of otherwise unused inventions. Aggregators might help to exploit and monetise existing inventions which would otherwise not have reached the market.

On the cost side of patent aggregation for consumers and society, the following point was put forward:

Risk of higher consumer prices. Although aggregators might often decrease the costs for inventors and implementors of technology, the fees that they charge for their services and/or licences can lead to higher prices for consumers.

5.3. Potential benefits and costs for consumers and society

For consumers and society as a whole (social welfare), the workshop participants mentioned the following potential benefits of patent aggregation for consumers and society:

Improves incentive for innovation. Aggregation might create a further incentive to innovate by supporting innovative companies to take a market advantage and receive (additional) remuneration. Moreover, patent aggregation can reduce the use of resources on litigation, which may then be invested in innovation instead;

Helps to avoid duplication of innovation. Aggregators might help to avoid duplication of innovation by making the availability of existing technologies more transparent and by making licences available;

6. Potential competitive effects of patent aggregation

Workshop participants perceived patent aggregation as having potential pro-competitive effects. By reducing market inefficiencies and facilitating trade in patents and patent licensing, patent aggregation may enhance the implementation of new technologies and follow-on innovations. In this way it may foster dynamic competition and dynamic efficiency.

However, certain behaviour and practices by patent aggregators can also be anti-competitive. Workshop participants put the following circumstances forward:

Increasing the scope of protection for low-quality patents. Patent aggregation might increase the effective scope of protection of individual patents beyond the scope that would be obtained without patent aggregation. For example, when packaged with high-quality patents, patent aggregation might be used to protect low-quality patents against annulment and to collect unreasonably high royalties;

Aggregating substitute instead of complementary patents. Aggregating patents for substitute or competing technologies can lead to a reduction of competition on the technology market. This will result in higher prices both for the use of technologies and for products in which these technologies are incorporated;
Less scrutiny of patent validity. Patent aggregation can reduce the incentive to screen for invalid patents within a portfolio. If patent aggregation implies that a bundle of patents needs to be purchased or licensed, without the possibility of excluding a selection of patents from that bundle, then a potential buyer or licensee has less incentive to investigate the validity of all patents in the bundle;

“Privateering”. One or several producing companies could use the lack of transparency of patent ownership which often surrounds the aggregation process, to create shell companies and assert the patents against their competitors. Shell companies may be less vulnerable or less exposed in litigation cases than their backing companies, and thus have better bargaining positions. Such behaviour is called “privateering”. It may well be that the courts will themselves find a way of dealing with shell company patentee plaintiffs by requiring that their backers provide security for legal costs;

Risk of hold-up. Patent aggregators cannot only solve but might also create hold-up situations and thereby delay the implementation of new technologies or follow-on innovations;

Risk of monopsony power and its adverse effects. Patents pertaining to one technology and aggregated for defensive purposes can be abused to restrain trade and create problems of “monopsony” power (i.e. one purchaser) in the market; and

Leveraging. Patent portfolios owned by producing entities in a non-core market can be used to create a patent-based dominant position in order to foreclose competition on the core market.

7. Role for competition and patent policy

There was consensus of opinion that in an overlapping and complex technological environment, in general, a distinction between “good” and “bad” aggregator types is not possible. Aggregation should rather be regarded as a tool that can be used in two ways: in a way that might be beneficial, and in a way that might be costly to society.

Many participants noted that patent aggregators could help establish a functioning market for patents, which is liquid, transparent and efficient. Facilitating trade in patents may have two major positive effects on innovation. First, it may help inventors of patents to be properly rewarded for their inventions. This should increase the general incentives to innovate and create funds to invest in innovation. Second, trade in patents and patent licences may contribute to improving the dissemination of innovations and increase access to patented inventions. Increased access to technology might then also facilitate the creation of follow-on innovations.

Therefore, to avoid undermining the beneficial effects of patent aggregation on innovation, no particular form of patent aggregation should be considered as per se anti-competitive. In fact, the prior should be that patent aggregation is beneficial unless there are clear signals to the contrary. Potential misconduct of individual aggregators should rather be evaluated on a case-by-case basis, based on the facts and circumstances of each single case. For such a case-by-case approach, the relevant questions are how aggregators set their prices and whether they use any market power they might have to create restrictions and reduce competition on the technology market.

Furthermore, most participants had the view that competition policy and competition authorities are already having the right approaches and legislation in force to deal with anti-competitive behaviour. For example, the competition rules for the assessment of technology transfer agreements, a revised version of which was recently adopted by the European Commission, are regarded as appropriate for evaluating anti-competitive practices that might stem from aggregation.

Nevertheless, there was a clear recommendation for competition agencies to improve patent system related knowledge and the assessment of the technological issues involved. A natural way to achieve this might be to involve patent offices and use their expertise to advise competition authorities on technical aspects of patents and technology specific matters.

8. Conclusion and open questions

8.1. Main workshop conclusions

The goal of this workshop organised by the Economic and Scientific Advisory Board of the EPO was to shed more light on a recent phenomenon observed in the patent sphere in Europe: the increased activities aimed at bundling and aggregating patents with the intention to exploit them.

The discussions during the workshop confirmed that patent aggregation is changing the ways in which patents are monetised and technologies are used. This in turn has an effect on the way innovations are generated and technological change is achieved. Although originating from the United States, the participants reported that most major patent aggregators already have a presence in Europe and are expected to expand their activities. Although a variety of different business models for patent aggregation exists, the following major types have been identified: patent pools, patent brokers, patent practising and non-practising entities. Non-practising entities can be further distinguished in privately or state funded and in assertive or non-assertive entities. Many aggregators, however, follow different business strategies in parallel or may change their behaviour over time, making it very difficult to put them into specific categories.

Rather than a classification of patent aggregators, the major contribution of the workshop was the discussion on how patent aggregation impacts competition and innovation. On the one hand, patent aggregation may solve particular issues and shortcomings of patent markets, making them more liquid and efficient. Patent aggregation may even facilitate the establishment of markets for technologies. This could allow for a more efficient use and dissemination of innovation, which should help increasing dynamic competition. Furthermore, patent aggregation may imply additional rewards to innovators, thus possibly improving incentives to invest in innovation.

On the other hand, patent aggregation may result in anti-competitive behaviour which could impede innovation and reduce welfare. Although most participants agreed that patent aggregation may have net social benefits, the effects of patent aggregators on competition should be monitored. The discussion during the workshop has made it clear that, since most aggregators are neither “bad” nor “good” and follow different strategies, their behaviour should be assessed on a case-by-case basis.

Furthermore, many experts were of the view that European competition policy and competition authorities already have legislation in force and instruments at hand to deal with anti-competitive behaviour. Nevertheless, the suggestion was made that patent offices could use their expertise to advise competition authorities on technical aspects of patents and technology specific matters.

8.2. Open questions

Many experts noted that there are still major research gaps which have to be filled in order to better understand the roles of different patent aggregation models and their impact on competition and innovation. For experts in competition policy it was important to understand whether, when and how the aggregation of patents can increase the value and/or strength of individual patent rights. This information is necessary to properly assess potential anti-competitive effects of aggregation, like market dominance based on patent positions. Furthermore, despite many examples of patent aggregation practices in Europe, there are no accurate and reliable statistics that reveal and describe the whole extent of patent aggregation and transaction activities for Europe. This might be partially due to the lack of transparency of patent ownership and of reliable patent litigation data.
9. References

Articles


Selected articles from IP magazines and blogs


“The NPE reality is very different from the media myth”, Intellectual Asset Management, January/February 2012: http://www.iammagazine.com/Magazine/Issue/51/Insights/The-NPE-reality-is-very-different-from-the-media-myth
## Annex 1

List of participants at the Economic and Scientific Advisory Board’s workshop on patent aggregation and its impact on competition and innovation policy

Date: 25 November 2014

<table>
<thead>
<tr>
<th>First name</th>
<th>Surname</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keith</td>
<td>Bergelt</td>
<td>CEO, Open Invention Network LLC</td>
</tr>
<tr>
<td>Béatrix</td>
<td>de Russé</td>
<td>Board Member, Technicolor</td>
</tr>
<tr>
<td>Giustino</td>
<td>de Sanctis</td>
<td>IP expert</td>
</tr>
<tr>
<td>Maurits</td>
<td>Dolmans</td>
<td>Partner, Cleary Gottlieb Steen &amp; Hamiliton LLP</td>
</tr>
<tr>
<td>Josef</td>
<td>Drexl</td>
<td>Director, Max Planck Institute for Innovation and Competition Law</td>
</tr>
<tr>
<td>Michael</td>
<td>Friedman</td>
<td>Managing Director, Ocean Tomo</td>
</tr>
<tr>
<td>Bronwyn H.</td>
<td>Hall</td>
<td>Professor UNU-MERIT and University of California at Berkeley</td>
</tr>
<tr>
<td>Dietmar</td>
<td>Harhoff</td>
<td>Director, Max Planck Institute for Innovation and Competition Law</td>
</tr>
<tr>
<td>Raymond</td>
<td>Hegarty</td>
<td>Managing Director, IV International Licensing, Intellectual Ventures</td>
</tr>
<tr>
<td>Jonas</td>
<td>Heitto</td>
<td>Corporate IP Counsel, Alcatel-Lucent Deutschland AG</td>
</tr>
<tr>
<td>Didier</td>
<td>Huck</td>
<td>Vice President Public Affairs and Corporate Social Responsibility, Technicolor</td>
</tr>
<tr>
<td>Robin</td>
<td>Jacob</td>
<td>Professor, University College London</td>
</tr>
<tr>
<td>Roel</td>
<td>Kramer</td>
<td>CEO, One-Blue LLC</td>
</tr>
<tr>
<td>Thomas</td>
<td>Kramler</td>
<td>Deputy Head of unit, European Commission, DG Competition</td>
</tr>
<tr>
<td>Amandine</td>
<td>Léonard</td>
<td>PhD Researcher, KU Leuven</td>
</tr>
<tr>
<td>Marco</td>
<td>Lo Bue</td>
<td>Legal Advisor, Italian Antitrust Authority</td>
</tr>
<tr>
<td>Lutz</td>
<td>Maicher</td>
<td>Head of Research Group, Fraunhofer MOEZ</td>
</tr>
<tr>
<td>Patrick</td>
<td>McCutcheon</td>
<td>Senior Policy Officer, European Commission, DG Research and Innovation</td>
</tr>
<tr>
<td>Luke</td>
<td>McDonagh</td>
<td>Lecturer in Law, Cardiff University Law School</td>
</tr>
<tr>
<td>Malcolm</td>
<td>Meeks</td>
<td>Patent Director, France Brevets</td>
</tr>
<tr>
<td>Rongping</td>
<td>Mu</td>
<td>Director General, Center for Innovation and Development, Chinese Academy of Sciences</td>
</tr>
<tr>
<td>Sadao</td>
<td>Nagaoka</td>
<td>Professor, Hitotsubashi University</td>
</tr>
<tr>
<td>Ayşe</td>
<td>Odman Boztosun</td>
<td>Head of Private Law Division, Akdeniz University Law Faculty</td>
</tr>
<tr>
<td>Koichiro</td>
<td>Onishi</td>
<td>Assistant Professor, Osaka Institute of Technology</td>
</tr>
<tr>
<td>Gerard</td>
<td>Pannekoek</td>
<td>President and CEO, IPXI Holdings, LLC</td>
</tr>
<tr>
<td>Daniel</td>
<td>Papst</td>
<td>Managing Director and co-owner, Papst Licensing GmbH &amp; Co. KG</td>
</tr>
<tr>
<td>Ruud</td>
<td>Peters</td>
<td>Advisor, Koninklijke Philips N.V.</td>
</tr>
<tr>
<td>Pierre</td>
<td>Régibeau</td>
<td>Vice President, Charles River Associates</td>
</tr>
<tr>
<td>David</td>
<td>Ruder</td>
<td>Vice President, Corporate Development, RPX Corp.</td>
</tr>
<tr>
<td>Roman</td>
<td>Sedlmaier</td>
<td>Attorney, Frohwitter Law Firm</td>
</tr>
<tr>
<td>Claudia</td>
<td>Tapia</td>
<td>Director IPR policy, Ericsson</td>
</tr>
<tr>
<td>Geertrui</td>
<td>van Overwalle</td>
<td>Professor, Centre for Intellectual Property Rights, University of Leuven (Belgium); Visiting Professor, University of Tilburg (The Netherlands)</td>
</tr>
<tr>
<td>Anna</td>
<td>Vernet</td>
<td>Policy Advisor, European Commission, DG Competition</td>
</tr>
</tbody>
</table>
EPO participants

<table>
<thead>
<tr>
<th>First name</th>
<th>Surname</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter</td>
<td>Hingley</td>
<td>Financial Controlling and Statistics</td>
</tr>
<tr>
<td>George</td>
<td>Lazaridis</td>
<td>Financial Controlling and Statistics</td>
</tr>
<tr>
<td>Minna</td>
<td>Nikolova-Kress</td>
<td>European Co-operation</td>
</tr>
<tr>
<td>Victoria</td>
<td>Rivas Llanos</td>
<td>European Patent Academy</td>
</tr>
<tr>
<td>Ilja</td>
<td>Rudyk</td>
<td>Chief Economist unit</td>
</tr>
<tr>
<td>Karin</td>
<td>Terzić</td>
<td>Chief Economist unit</td>
</tr>
<tr>
<td>Theon</td>
<td>van Dijk</td>
<td>Chief Economist and Secretary General of ESAB</td>
</tr>
<tr>
<td>Stephan</td>
<td>Worack</td>
<td>Chief Economist unit</td>
</tr>
</tbody>
</table>

Acknowledgements

The European Patent Office and the EPO Economic and Scientific Advisory Board would like to thank all those who participated in the workshop for the fruitful discussions and their valuable contributions. Special thanks go the speakers for their informative and inspiring presentations, the group chairs for guiding the discussions in the working groups and the plenary chairs for moderating the plenary sessions (see Annex 2).
Programme of the ESAB workshop on patent aggregation and its impact on competition and innovation policy

25 November 2014

09.00 Opening and welcome
Dietmar Harhoff, Max Planck Institute for Innovation and Competition Law, ESAB Chairman
Theon van Dijk, EPO Chief Economist, ESAB Secretary General

09.15 Plenary 1 | Chair: Ruud Peters, Philips Group Innovation

Statements from patent aggregators and experts
(Statements – 10 min. each)
Giustino de Sanctis, IP expert
Michael Friedman, Ocean Tomo
Gerhard Pannekoek, IPXI Holdings LLC.
Josef Drexl, Max Planck Institute for Innovation and Competition
Sadao Nagaoka, Hitotsubashi University
Robin Jacob, University College London
Pierre Régibeau, Charles River Associates
Maurits Dolmans, Cleary Gottlieb Steen & Hamilton LLP

Short discussion

11.15 Coffee break

11.45 Group work 1
Questions: What types of patent aggregators (in the broad sense including patent brokers, patent pools, patent funds and offensive and defensive aggregators) are currently present in Europe? Are their activities increasing in Europe? How does Europe compare to the US in terms of presence of patent aggregators?

Chair of group 1: Bronwyn Hall, UNU-Merit
Chair of group 2: Geertrui van Overwalle, KU Leuven

12.45 Lunch

14.00 Plenary 2 | Chair: Ruud Peters, Philips Group Innovation

Presentation and discussion of group works by group chairs
15.00 Group work 2
Questions: What are the costs and the benefits of the various forms of patent aggregation?
What are the challenges for competition and innovation policy?

   same group chairs as above

16.00 Coffee break

16.30 Plenary 3 | Chair: Béatrix de Russé, Technicolor
Presentation of group work findings and discussion

17.30 Final discussion & closing | Dietmar Harhoff, ESAB Chairman

19.30 Dinner at Le Fleuron in the European Patent Office

Rapporteur:
Ilja Rudyk, EPO, Chief Economist unit