EPO Economic and Scientific Advisory Board

While the EPO’s main focus is on its core business, it also has a strong interest in the broader economic and social ramifications of the patent system. This interest should be pursued in a collaborative way together with individuals and organisations that have shown a high level of expertise in the areas concerned. It is for this reason that the EPO set up an Economic and Scientific Advisory Board to address important economic and social issues relating to patents in a more dedicated and selective way than hitherto possible.

Mandate
The objective of the EPO’s Economic and Scientific Advisory Board is to contribute to a comprehensive analysis of the patent system in its economic and social context. The Advisory Board addresses issues that are closely related to the patent system and of significant interest to the European economy and society at large. It is the responsibility of the Advisory Board to come up with a scientifically grounded, independent assessment of these issues. The Board advises the EPO on the scope and set-up of relevant economic and social studies, provides guidance on related research projects and evaluates their impact. Using studies and analyses supplied by the EPO and other external partners, the Advisory Board is responsible for providing early warning signals on sensitive developments and issues. Moreover, it presents policy recommendations for dissemination to relevant media and stakeholders.

Composition of the Advisory Board
The EPO’s Economic and Scientific Advisory Board is composed of 11 well-known and renowned individuals (global scope with an emphasis on Europe), some of whom are economists and social scientists with a focus on the patent system, while others are practitioners with extensive experience of the European patent system. The members are nominated for a period of three years. The group is supported by a Secretary-General, whose role is exercised by the EPO’s Chief Economist.

Scope of work
The Advisory Board is independent within the scope of its mandate and is able to choose to address particular issues on its own initiative. At its inaugural meeting in January 2012, the EPO’s Economic and Scientific Advisory Board decided to hold stakeholder workshops on the following three issues:
- the role and structure of fees
- the importance of patent quality
- patent thickets

Members of the ESAB
- Béatrix de Russé, Executive Vice-President, Intellectual Property and Licensing, Technicolor
- Bronwyn Hall, Professor, University of California, Berkeley
- Robin Jacob, Professor, University College London
- Mu Rongping, Director-General, Institute of Policy and Management, Chinese Academy of Sciences
- Sadao Nagaoka, Professor, Hitotsubashi University
- N. Ayşe Odman Boztosun, Associate Professor, Akdeniz University, Antalya
- Ruud Peters, Chief Intellectual Property Officer, Philips Intellectual Property and Standards
- Mariagrazia Squicciarini, Senior Economist, Head of Unit at OECD
- Geertrui Van Overwalle, Professor, Centre for Intellectual Property Rights, KU Leuven
- Chairman: Dietmar Harhoff, Professor, Ludwigs-Maximilians-University Munich
- Secretary-General: Nikolaus Thumm, EPO Chief Economist
Executive Summary

The objectives of the EPO Economic and Scientific Advisory Board’s workshop on pricing and fees were to identify, in the light of the existing policies, materials and studies, the most relevant fee-related issues and to come up with recommendations for the structure and the setting of fees. The workshop can be considered to be an evidence-based policymaking tool, used to expand the scope of discussion about fees as well as to take into account experiences and views from different disciplines and jurisdictions.

The workshop revealed that there may well be some room for improvement in the European fee system. However, there is no urgent need for a fundamental fee reform, if for no other reason than that patent fees only account for a small part of overall costs (user side), and other major cost drivers like research and development expenditure or attorneys’ fees are beyond the EPO’s control.

The traditional fee policy applied by the European Patent Office as well as by national patent offices (NPOs), i.e. to set procedural fees relatively low and increase the renewal fees over the patents’ lifetime, was generally supported by the experts attending the workshop. It was considered reasonable that renewal fees are used to finance the examination activities of patent authorities, given that procedural fees do not cover the examination costs.

No consensus could be reached about the need for support with patent fees for small- and medium-sized enterprises (SMEs) or universities. However, the experts agreed that different interest groups have to be treated differently, i.e. there is no “one size fits all” solution. There is further need to study this subject.

The discussions during the workshop made it clear that the European fee policy is affected by the tension between (1) setting the fees low to make the European patent system widely accessible for the purpose of promoting innovation, bringing with it the risk of low-quality patent applications, and (2) setting the fees high to avoid low-quality applications, bringing with it the risk of creating high barriers to entry and thus discouraging applicants to use the patent system.

The experts attending the workshop concluded that the current European fee system may need some fine-tuning, without making it more complex. Any fee change should be justified on the basis of a clear rationale. It should take into account possible unintended consequences. Wherever possible, fee changes should be accompanied by an ex-ante cost benefit analysis and an ex-post impact assessment.
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1 Introduction

The objectives of the EPO Economic and Scientific Advisory Board’s workshop on pricing and fees were to identify, in the light of existing policies, materials and studies, the most relevant fee-related issues and to come up with recommendations for the structure and the setting of fees. The workshop can be considered to be an evidence-based policymaking tool, used to expand the scope of discussion about fees as well as to take into account experiences and views from different disciplines and jurisdictions. Even though the focus of the workshop was on Europe, participants from the USA, Japan, and China had been invited to share their experience.

The workshop addressed the following questions:

– Who are the winners and losers under the current fee system?
– How does pricing influence the behaviour of applicants?
– How does pricing impact on the competitiveness of European companies?
– Will lower prices lead to an increase in European filings originating in Europe?
– How can access to the system by SMEs and universities be guaranteed?
– Exploration of alternative fee structures
– Is a change in the fee structure the right action to take?
– Which are the best-practice policies while looking at patent offices’ funding models and fee policies?
– What is the impact of procedural fees on the filing behaviour of applicants in terms of the volume and quality of applications?
– What is the dynamic relationship between procedural fees and renewal fees?

To answer these questions, the three rationales of the fee system have to be taken into account:

1. Patents are exclusion rights conferred at society’s expense. The patent-holder has to compensate for this by paying a tax. Hence, patent fees can be interpreted as compensation for negative externalities of the patent system.
2. Fees are needed to finance the patent system, that is to cover the costs of filing, search, prosecution and grant.
3. Fees can be used to steer the behaviour of patent applicants to make them behave in the manner most beneficial to society, i.e. make sure that patents provide an incentive to invest in research and development and, thereby, foster innovation.

These rationales were postulated more than 50 years ago. Since that time, competitive pressure induced by the globalisation of trade, deregulation and technological change has increased considerably. Since the mid-1990s, patent applicants have started to use the patent system in an increasingly strategic way by accumulating patents, building patent thickets, or keeping unused patents in force to create additional cost for competitors, which could form entry barriers to attractive markets.

Furthermore, during the last years, applicants have begun to use the patent application and grant process strategically, for instance, by amending applications, increasing the complexity of patent applications, filing applications characterised by a very broad scope of protection, or by filing divisional applications to delay grant or to gain time to amend the application. The strategic use of the patent application system has not only come at a price to society but has also led to a considerable increase in costs to patent offices.

The following report is the outcome of the workshop on pricing and fees. The objectives of this report are two-fold:

– firstly, to present the discussion that took place at the workshop
– secondly, to present the conclusions and recommendations of the workshop.

The remainder of this report is structured as follows: section 2 describes the institutional background. Section 3 summarises the main findings and discussions of the workshop. The structure of the report follows that of the workshop programme. Section 4 sets out the most important findings and conclusions, puts forward recommendations and highlights areas that need further investigation.
2 Institutional background

The European Patent Office (EPO) is the executive body of the European Patent Organisation. It is supervised by the Administrative Council, composed of representatives of the 38 member states of the organisation. The European Patent Organisation, founded in 1977 on the basis of the European Patent Convention signed in Munich in 1973, is a self-funded European organisation, which is not part of the European Union institutions.

The EPO’s revenues derive from three major sources:

– procedural fees;
– renewal fees for pending European patent applications;
– a 50% share of the national renewal fees from European patents that, after grant, become national patents.

According to the “Rules Relating to Fees”, less important fees can be changed by the President of the EPO at any time. Changes of important fees like, for instance, filing fees, fees for search and examination, claim fees as well as designation or grant fees have to be approved by the Administrative Council. Additionally, fee changes are regulated by a financial agreement between the EPO and the NPOs. To promote accessibility to the patent system, the EPO as well as the NPOs have adopted the “traditional fee structure”, i.e. low procedural fees (even lower than the unit cost of procedural processes) and progressive renewal fees to cross-subsidise the application phase.

The EPO as well as the NPOs charge fees for a number of steps in the patenting process, such as filing, search, designation, examination, grant, opposition, and appeal. Fees are in some cases contingent on the patent application itself, e.g. the number of pages submitted or the number of claims defining the scope of protection.

The Figure on this page provides an overview of the most important fees charged during the life-cycle of a patent. Fees can be divided into two categories: procedural fees to be paid during the application phase and post-grant renewal fees to be paid during the renewal phase.

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3 Report of the workshop

3.1 Comparing existing fee policies

US Patent and Trademark Office
According to Section 10 of the Leahy-Smith American Invents Act (AIA), the USPTO is now authorised to in part “set or adjust by rule any fee established, authorized, or charged”. This authorisation occurs on condition that the aggregate patent fee revenues do not exceed aggregate estimated costs for patent operations and administration. The USPTO is currently working on a proposal for a fee reform to become effective in February 2013. The change in fees aims at accelerating the USPTO’s progress in reducing the backlog of unexamined patent applications and reducing patent application pendency. This change should increase the quality of the filings, realign the fee structure to give applicants the ability to make more informed decisions about the investments they make in patent applications, and put the USPTO on the road to financial sustainability.

According to the current draft, fees to be changed include fees for basic filing, search, and examination, excess claims, application size, and extensions of time, request for continued examination, prioritised examination, supplemental examination, pre-grant publication and issue, appeal, maintenance, and micro-entity, as well as oath and declaration. The proposed fee changes include a 50% increase in procedural fees (filing and search), a 50% increase in early maintenance fees and a 20% increase in late maintenance fees.

The USPTO offers a 50% discount for small entities (≤ 500 employees) from all over the world and a 75% discount for micro-entities and universities.

State Intellectual Property Office of China
A representative from China provided an introduction to the Chinese patent fees system: The State Intellectual Property Office of the People’s Republic of China (SIPO), formerly the Chinese Patent Office, is now a vice-ministry-level organisation directly under the State Council of China. The Chinese patent fee system was established when the first patent law was introduced in 1985. The main aim of the Chinese patent fee system is to promote technological progress and innovation as well as to cover some of the costs of the patent process later on. China adjusted its patent fee system in 1992, 1993 and 2001, and the standard patent fees were increased gradually in those years.

The SIPO applies a policy of low standard fees (standard fees unchanged since 2001). In contrast, it charges a progressive renewal fee: by year 9, the renewal fee is 2.2 times greater than in year 1, and by year 16, it is 8.9 times greater.

The SIPO offers a fee “reduction arrangement” whereby the applicant can request a reduction in the application fee, invention maintenance fee, substantial examination fee, re-examination fee and renewal fee for years 1 to 3 (or postponed payment thereof). The reduction in examination fee and re-examination fee (or postponed payment thereof) is 60% for a service invention and 80% for a non-service invention. The reduction in the other three kinds of fee (or postponed payment thereof) is 70% for a service invention and 85% for a non-service invention. Applicants are officially required to pay the equivalent of the fee reduction if there is an economic return on the patented invention, but the SIPO has yet to collect this money in practice.

Comparing patent fees in the application, renewal, re-examination and invalidation phases to national income per capita, the coefficient of patent-fee-per-Chinese-resident to income in SIPO is higher than that in USPTO, JPO and KIPO, but lower than that in the EPO per member-state resident. The coefficient of non-resident-patent-fee to income in the SIPO is very low, at just 1/40 to 1/30 of that in USPTO, JPO, EPO and KIPO.

Japan Patent Office
Over the last 15 years, the Japanese patent system has also undergone many changes in fee structure. One important reason for the fee changes was to transfer a surplus generated through higher efficiency and economies of scale back to the applicants. Consequently, fees – in particular renewal fees – have been reduced repeatedly. Examination fees were increased significantly in 2004 but then lowered again in 2011. The recent fee change in Japan aimed at encouraging efficient and equitable examination requests by increasing examination fees to cover the marginal cost of examination while reducing the renewal fees. The fee change was introduced to offset the 2001 reduction of the allowable period for examination request from seven years to three years, which resulted in a significant increase in examination requests. The fee reform decreased the costs for high-quality patent filings (filings that may well be renewed to full term) and increased the costs for low-quality patents and thereby considerably lowered the number of examination requests for low-quality filings.
An empirical study on JP patent applications revealed price elasticity of patent examination requests for lifetime patent fees of around 0.3. Additionally, it was shown that elasticity is higher for low-quality applications. These results may well provide an opportunity to steer applicants’ behaviour. The JPO offers a 50% fee reduction for small firms, individual applicants, and universities.

European Patent Office
The EPO applies the traditional fee policy, i.e. sets procedural fees relatively low, but increases the renewal fees over the patents’ lifetime. The EPO’s current fee policy follows the three rationales of the fee system: (1) financing the patent system, (2) compensating for negative externalities of the patent system and (3) steering the filing behaviour of patent applicants.

Post-grant renewal fees are set by the NPOs but have an impact on the EPO, since renewal fees exhibit one of the EPO’s three major sources of income (the other two being procedural fees and EPO internal renewal fees). During the last years, the EPO has experienced a decrease in the grant rate. The grant rate at the EPO currently amounts to 40% and amounted to 50% about ten years ago. Whereas, from a welfare perspective, a decreasing grant rate can be considered as positive, it is negative in terms of the EPO’s income.

The EPO does not offer special treatment to SMEs and universities, since a discount is already available at almost all NPOs.

National patent offices
National patent offices (NPOs) under the EPC have also adopted the traditional fee policy. A change in their fee policies is unlikely. However, NPOs are starting to recognise how fees influence applicants’ behaviour. Fees vary considerably between NPOs, in structure and absolute amounts. Generally, self-financing NPOs have a flatter renewal fee structure than NPOs financed by the state budget.

The model of some patent fees applied by the Hungarian Intellectual Property Office (HIPO), provides an interesting example. HIPO charges progressive fees for amendments and requests for extensions to time limits. Further research is needed to find out whether this could become a best practice example for steering applicants’ behaviour via fees.

The following issues were raised during the discussion after the presentations of the representatives of the different patent authorities:

– One participant asked why reductions should be offered to universities, given that universities have financial resources at their disposal and fees are not even the largest burden to universities. The following rationales for subsidising universities were provided by the audience:
  • universities are non-profit organisations
  • universities do not make money out of licensing
  • universities apply basic research
– Another participant asked whether there could be abuse of fee-reduction policies and whether treating different types of applicants differently could lead to bureaucratic overkill.
– One suggestion made was that maybe it is not only the level of fees that affects applicants’ behaviour but the point in time at which a fee has to be paid.
– There was general agreement that patent fees only make up a small part of the total costs. Research and development (R&D) expenditure, attorneys’ fees, administrative effort, etc., are additional costs. Hence, it is not surprising that the fee elasticities described in the literature are low.
– The UK Intellectual Property Office does not offer fee reductions to SMEs and individual inventors. The reason for this is that they – in particular the applications of individual inventors – take longer to grant, are less likely to be granted, and are on average of lower quality than applications from other applicants.
– Finally, one participant noted that from a welfare perspective, “cost recovery” is not the right way to think about patent fees. If a patent authority wants to steer applicants’ behaviour, fees have to be set in a way to fulfil this goal – even if costs are not fully covered.

3.2 Stakeholders’ perspectives on the role of patent pricing and fees

Industry
The presenting representative from industry made it clear that companies only invest in intellectual property if the return (benefit) exceeds the costs – intellectual property is considered a business asset. Whereas costs induced by patent protection can be estimated quite reliably, many companies have difficulties in assessing the benefits. The latter makes determining acceptable prices difficult.
Over time, international competition has made it necessary to get protection in more countries. Additionally, shorter technology life cycles make inventions (and patents) become obsolete much faster. According to the industry representative, the main costs associated with patent protection are the size of the portfolio, the number of annual patent filings, the geographical coverage of the patents, as well as the economic lifetime of the patents.

A general challenge to the patent system is that there are too many patents protecting insignificant inventions.

**Patent attorneys**
The presenter representing legal-service providers summarised results drawn from the Roland Berger Study published in 2004. According to this study, after the entry into force of the London Agreement, attorney costs accounted for 30% of the overall costs of an average EP patent (seven EPC countries, ten years’ protection).

Taking market size as a proxy for the value of a patent, a cost-benefit analysis of filings to the German Patent and Trademark Office (GPTO), the EPO, the USPTO, and the SIPO reveals that DE patents are the least expensive, followed by Chinese (CN) patents and US patents. EP patents are most expensive. However, the value (market size) of DE and EP patents is lowest and highest for US and CN patents. A possible implication of these results is that the EPO system has to become more attractive to its customers. Since becoming a price leader is not an option, the EPO could aim at becoming a quality leader.

**Universities**
The university representative gave an overview of the situation at European universities.

Universities are forced to commercialise knowledge to enable technology transfer, yet they do not produce any goods. Therefore, they do not need patents to publicise their know-how. The only reason why universities apply for patents is to be able to grant licenses to facilitate technology transfer.

Generally, universities prefer the PCT route (national -> PCT -> EP) over the EP route, since a 12-month period is too short to close a licensing deal.

According to the university representative, the major cost drivers for universities are the costs of patent professionals’ services, the patent attorney fees, and the internal costs of administration.

Universities have to ensure the high quality of their patents, since badly drafted patents (even if protecting high-quality technologies) would not find a buyer or licensee. Therefore, universities have to learn how to manage the patenting process in a cost-efficient way. Even though technology transfer is beneficial to society, universities should not necessarily get a discount in patent fees. If patents become too cheap, this could lead to a less cost-efficient management of the patent process and to low-quality patents.

### 3.3 Work group findings

**Work Group 1**

**Winners and losers of the current European patent fee system**

In the following, the most important findings from Work Group 1 will be summarised. Work Group 1 was asked to discuss who the winners and losers are under the current fee system.

- Partial consensus was reached that the losers are SMEs and start-ups, and the winners are large companies and patent attorneys. In particular, large companies have internal patent departments and know how to “play the game” (complexity of the system) and they have better access to information. Small firms and individual inventors, on the contrary, lack resources and experience and do not have the wherewithal to subsidise costs.

- Consensus was reached that patent fees are not the largest cost drivers, these being (1) attorney fees, which were considered to vary considerably and for which more transparency is needed and (2) access to information, which constitutes a major entry barrier to the patent system.

- Consensus was further reached about the fact that SMEs, start-ups, and individuals should not be treated equally. Whereas SMEs constitute an important source of innovation and start-ups may form an important outlet for university patents, individual inventors can indeed block the system.

- No consensus was achieved about whether the EPO can/should actively support “disadvantaged” applicants by providing subsidies, access to information, support to navigate the process (not clear whether the EPO or an external party should provide support, since this could lead to a possible conflict.
of interest), or subsidise the search costs of small entities to identify low-quality patents as early as possible.

– Consensus was again reached about the fact that national filing procedures are very complex. This makes navigating the patent system difficult for all types of applicants.

The following questions were raised during the discussion but no definitive answers were found:

– **Types of fees**
  - Should the EPO consider price differentiation by industry?
  - Should the EPO consider penalties for not using a patent, e.g. introduce a fee for unused patents?

– **Support of small entities**
  - Would supporting particular groups of applicants be considered unfair?
  - What kind of support should be provided: discount (like most of the NPOs), vouchers (like NL), assistance and advice (like FR), information, or training?
  - Could the national patent systems act as a filter for patents of individual inventors?
  - Currently, valuable patents, which are maintained for 20 years, subsidise low-quality applications. Low-quality filings are either rejected or only maintained for a short period; hence, revenues do not suffice to cover examination costs. Therefore, the EPO might consider granting a bonus to applicants with high-quality patents rather than subsidising small entities (in particular individual inventors). However, it was noted by one participant that patents that are not maintained for 20 years are not necessarily of low value. A reason for letting a technology lapse into public domain might, as well, be a short product or technology life cycle.

– **General advice**
  - Search reports are produced by NPOs, the EPO, and WIPO. To increase efficiency and, thereby, to save costs, patent authorities should consider setting standards, trusting each other, and learning from best practices.
  - The EPO should consider means to keep applicants from prolonging the pending period longer than absolutely necessary.
  - The EPO can increase its fees only to a certain extent because, above a certain threshold, applicants would choose the national route over direct filings at the EPO.

**Summary**

The above-summarised arguments indicate that Work Group 1 agrees that large firms and attorneys are better able to benefit from the current European patent fee system than SMEs or other small entities. If the EPO were to consider supporting small entities, it should not treat all applicants equally, since their contribution to technical advancement and, consequently, to society, varies considerably. Whereas SMEs constitute an important source of innovation and universities enable the transfer of pure research into practice, there is no strong evidence that individual inventors create a lot high value inventions. The experts also asked: if the EPO were to support “disadvantaged” applicants, how would it do so?

The experts agreed that patent fees are not the largest cost driver for applicants, the main cost drivers being attorneys’ fees, R&D expenditure, and access to information.

Finally, a considerable increase in all types of fees could lead to a shift of applications from the EPO to the NPOs. Price differentiation, i.e. different fees for different groups of applicants, in turn, could be considered unfair and would increase the complexity of the European patent fee system. However, since the European patent fee system is already very complex, changes should not lead to a further increase in complexity. The latter would not only help applicants to navigate the patent system, but also reduce the burden of costs for the EPO. Another way to decrease costs would be closer co-operation between the EPO and the NPOs to avoid duplication of work (e.g. search reports).

**Work Group 2**

**Influence of pricing on applicants’ behaviour and on competitiveness of European companies**

In the following, the most important findings from Work Group 2 will be summarised. Work Group 2 was asked to discuss the influence of pricing on applicants’ behaviour and on competitiveness of European companies.

– There was agreement that an increase in pre-grant fees has little or no impact on applicants’ behaviour, since fees only account for a small fraction of total patent costs (maybe the impact is higher for SMEs).
– The experts also came to the conclusion that there is no real need to offer lower fees to SMEs and universities. However, fees can be used to steer applicants’
response times. In particular, faster responses should be rewarded. The EPO might consider the introduction of a progressive amendment fee comparable to that of the Hungarian Intellectual Property Office (see presentation of the representative of the NPOs, p. 10).

– Fee increases might have an effect, but not always the desired one. Side-effects of changes in the European fee system have to be considered. For instance, though the increase of the excess claims fee has led to a reduction in the number of claims, it has also resulted in more complex claim structures.

– The quality and timeliness of search reports and response to written opinion likely have a greater impact on applicant behaviour than fees. The EPO may, therefore, want to consider pre-filing prior art searches at lower costs (to make sure that SMEs and universities can afford them). This could lead to an increase in the quality of patent applications (a possible conflict of interests between attorneys and examiners has to be considered). Additionally, this would enable applicants to estimate the commercial value of patents at the time of the dispatch of the search report and written opinion.

– Fee modifications should not make the system more complex, since this would lead to a further increase in costs for both applicants and patent authorities. Additionally, fee modifications should be justified.

– A congestion fee was proposed for areas in which there is extensive patent-filing activity. However, the practicability of price discrimination by industry was assumed to be questionable and was generally dismissed as unrealistic as a means to steer applicants’ behaviour.

– Decreasing the EPO patent fees could have a negative impact on the competitiveness of European companies. Non-European companies may be incentivised to file more patents in Europe and this may be disadvantageous to European companies.

The following questions were raised during the discussion but no definitive answers were found:

– How should an increase in fees be achieved? The answer could, for example, be to have progressive amendment fees (like the Hungarian Intellectual Property Office, see p. 10), a refund model, i.e. a reward rather than a penalty scheme, or price discrimination by specific groups of applicants (e.g. universities or SMEs). Whatever the model, possible side-effects have to be considered.

– Would higher fees deter an abuse of the patent system?

– What motivates SMEs to file a patent? SMEs have limited resources at their disposal to file a patent. They may file patents to generate value.

– Better measures of externalities, in general, and of the impact of patents on the incentive to innovate, in particular, are needed.

– Research is needed on the impact of a reduction of fees vs. a deduction of fees.

– Additional empirical evidence is needed to measure the quality of the patents owned by universities and SMEs and on whether granting financial support to SMEs and universities would lead to an increase in patent quality.

Summary

The experts of Work Group 2 also agreed that an increase in pre-grant fees has little or no impact on applicants’ behaviour, since fees only account for a small fraction of total patent costs. They also came to the conclusion that there is no real need to offer lower fees to SMEs and universities.

Again, in agreement with Work Group 1, a consensus was achieved by the experts of Work Group 2 that fee modifications should not make the system more complex, since this would lead to an increase in costs. Therefore, the practicability of price discrimination by industry was generally dismissed as unrealistic as a means to steer applicants’ behaviour.

The experts further voiced their concern that fee increases might have an effect, but not always the desired one. Therefore, side-effects of changes in the European fee system should be considered.

To be better able to decide about possible adaptations of the European fee system, more (empirical) evidence is needed on the motives of different types of applicants to patent, and on whether an increase in the fees would deter abuse of the patent system and lead to higher quality patent applications. Additionally, it should be investigated whether patents actually provide an incentive to innovate. A further important area of research is the impact of a reduction of fees vs. a deduction of fees, which has, so far, hardly been addressed in theory and practice.
Work Group 3
Fees as policy leverage? Alternatives

In the following, the most important findings of Work Group 3 will be summarised. Work Group 3 was asked to discuss whether fees could work as policy leverage and whether alternative policy leverages exist.

– Consensus was reached that the social benefit of the patent system is the development and dissemination of technological knowledge, and fees should be used to strike a balance between costs to society and the creation of inventions along with the dissemination of technological information.
– Consensus was further reached that fees should steer applicants’ behaviour. But different patent systems (e.g. US = centralised system / EP = decentralised system) require different fee systems.
– Consensus was reached that the current patent system, where “successful” patents subsidise “unsuccessful” applications, works well and is highly appreciated. It should remain as such.
– The value of the traditional fee system was confirmed. The optimal fee structure, however, still needs to be discussed. For instance, procedural fees should be cost-covering, at least to a certain degree in order to ensure smooth operation of the patent authorities and patent quality.
– Before changing the fees, any unintended side-effects of these changes should be considered.

The following questions were raised during the discussion but no definitive answers were found:

– How should fees be set? For instance, should only direct costs or also indirect costs be taken into account? What about negative externalities – could they be internalised in the fee structure?
– Before fee changes can be discussed, it is important to know which decisions can, if any, be made by the EPO. Some decisions can only be made by the NPOs or national governments. For instance, renewal fees are beyond the EPO’s remit.
– “What should be covered by the fees?”
  • Disclosure/transparency function: Consensus was reached that the fees should cover access to information.
  • Judicial function: Should opposition and appeal be subsidised? The court system could help with sorting out low-quality patents. Patent fees might be used to subsidise the opposition and appeal system. This would grant “access to justice”.
  • Filtering function: Could fees play a role in preventing patent floods? Are fees an appropriate means to steer applicants’ behaviour in terms of preventing low-quality filings or patents?
    No consensus was reached about a definition of “high- vs. low-quality patents”.
  • No consensus was reached about whether (technical) co-operation with NPOs or other patent authorities should also be covered by the fees.
– The NPOs should consider adopting a steep progression in renewal fees. Renewal fees can give incentives to patent-holders to let unexploited rights or rights which are no longer of sufficient economic value lapse into the public domain. However, renewal fees differ considerably between EPC member states. An agreement about an “optimal” renewal fee scheme would be helpful and particularly important against the background of the unitary patent.
– Electronic devices for paying renewal fees, e.g. central databases and fully automated reminders, could decrease administrative costs for patent-holders (of particular importance to SMEs, since they typically do not contract service companies to pay the fees).
– The EPO might consider a fee reduction for a declaration of willingness to grant a general license (like, e.g. in DE, the UK, FR or JP).
– The patent system has to provide better access to information; in particular, more information should be made available about the validity of EP patents, once converted into national rights.
– Further research is needed into fee-related issues, once the unitary patent comes into force.

Summary

Consensus was reached that the benefit of the patent system to society is the development and dissemination of technological knowledge and that fees should steer applicants’ behaviour. Consensus was further reached that the current patent system, where “successful” patents subsidise “unsuccessful” applications, works well. The value of the traditional fee system was confirmed.

Like Work Group 2, Work Group 3 acknowledged that any plan to change the fees should take any unintended side-effects of these changes into account.

Like Work Group 1, Work Group 3 raised the question of how fees should be set and what should be covered by the fees. The experts of Work Group 3 identified the following four functions of patent fees: disclosure function, judicial function, and filtering function.
Furthermore, the experts voiced their concern that some decisions can only be made by the NPOs or national governments. For instance, renewal fees are beyond the EPO’s control. The NPOs, however, should consider adopting a steep progression in renewal fees, since renewal fees can provide incentives to patent-holders to let patents of low value and unexploited rights lapse into the public domain.

Finally, the experts noted that the patent system should provide better access to information; in particular, more information should be made available about the validity of EP patents, once converted into national rights.

Work Group 4
How can access to the European patent system be guaranteed to SMEs and universities?

In the following, the most important findings from Work Group 4 will be summarised. Work Group 4 was asked to discuss how access to the European patent system can be guaranteed to SMEs and universities.

- No consensus was reached but the majority was in favour of supporting SMEs, owing to their important role in creating innovation, as well as start-ups but NOT individual inventors. Only partial consensus was reached about the support mode. SMEs might need advice, probably also a contribution to the fees (including patent attorneys’ fees). To support SMEs, patent attorneys could advise SMEs at a lower price. Additionally, tax deductions could be offered to SMEs. One representative noted that there is no reason to devise specific patent policies to promote SMEs. Promoting innovation, in general, is important.

- The EPO might consider pre-filing prior art searches carried out by the EPO to support SMEs but also to increase the quality of patent filings.

- No consensus was reached as regards the support of universities. But consensus was reached that SMEs and universities have to be treated differently. The following differences between universities and SMEs, which could be relevant for a decision on subsidies, were identified: universities license patents, but do not have to compete with firms. The major challenge for universities is to find licensees. Additionally, universities spend public money, whereas private SMEs spend private money.

- An increase in filing fees would make access to the patent system more difficult for universities. Due to budgetary constraints, universities prefer the PCT route over national filings or direct filings at the EPO, since it allows a delay of decisions and payments. If universities do not find a potential licensee (until fees have to be paid) they do not pursue the application. High-quality and timely search is the most important issue for universities, i.e. universities need reliable search reports at a reasonable price (current price is okay).

- If the EPO were to support universities, how could it make sure that large, commercially successful universities do not receive unnecessary (undue) support, i.e. how could it prevent abuse of the system? Empirical evidence shows that 80% of the successful licensing deals come out of collaborative research projects with industry prefinancing R&D. In case of a joint application, industry partners would also benefit.

- SMEs and universities try to “play the patent game” without support, e.g. without a patent attorney. This typically leads to low-quality patent applications.

- Patent attorneys’ fees constitute a substantial part of the costs, and are not under the EPO’s control. The second highest cost driver is renewal fees. Again, these fees are beyond the EPO’s control.

The following questions were raised during the discussion but no definitive answers were found:

- A change in the European fee system has to meet the following challenges: Methodological challenge: a consistent definition of an SME in different European countries and for EPO purposes is needed. Recommendation: use the European Commission’s definition. Legal challenge: Art. 107 EPC does not provide for subsidies and preferential treatment (in compliance with TRIPS/WTO rules). Practical challenges: (1) How to keep the system simple and how to provide clear rules? (2) How to avoid subsidising “marginal players”?, and (3) How to prevent abuse of the system, e.g. opportunistic behaviour of large firms acting as co-applicants of universities?

- Further research is needed on the differences between fee reduction and tax deduction on applicants’ behaviour. Additionally, the impact of the timing of a payment (e.g. should fees be due on the day a divisional is filed?) on the behaviour of applicants could be analysed in more detail.
Finally, the experts made the following recommendations:

- The EPO could consider offering full-text search within publicly available information systems.
- The EPO could consider conducting pre-filing prior art searches for small entities and universities. This would help to avoid low-quality applications from these parties (in particular from individual inventors). Fees could be reimbursable in the case of an official application.
- Complex EPC rules (in particular re divisionals) make it difficult for SMEs and universities to develop decent patent strategies. The EPO could reconsider the deadline for divisionals.
- Promote other types of IP rights, especially utility models.
- NPOs could keep and/or switch to an exponential profile of renewal fees. Additionally, the level of renewal fees should not be reduced.

3.4 Final discussion and closing remarks

During the final discussion the following suggestions were made by different participants:

- The EPO could consider the question of how the costs of the system to society could be internalised.
- Patent attorneys could provide a pro bono service for SMEs. Additionally, they could follow a code of conduct.
- It was also noted that the EPO and policymakers could consider providing a set of "rules of play", since the problem will not be solved by asking applicants under competitive pressure to change their patenting behaviour "willingly".
- One participant suggested maintenance fees to be paid in bundles (three years / five years). However, no consensus was achieved regarding fee bundling. On the one hand, fee bundling would reduce administrative effort but, on the other hand, it would benefit organisations with "deep pockets" and at the same time disadvantage small entities.
- The EPO could refrain from fee reductions offered to SMEs and universities to keep the system simple. The EPO could try instead to reduce entry barriers, i.e. provide better information. This would lead to an increase in the quality of patent filings and, consequently, reduce the EPO’s workload.
- One representative advised the EPO not just to try to minimise communications with the examiners. Even though continued examination could induce delays, it could also lead to greater clarity and better claims.
- Given the negative side-effects of the excess claims fees (fewer claims but more complex claim structures), one expert advised the EPO to again reduce claim-based fees. However, no consensus could be achieved among the experts. It was also argued that the current claim-based fees should be kept unchanged, since the current EP patent system is exploding. Additionally, the good vs. bad patent ratio is changing and the EP patent system is in danger of losing its good reputation.
- For the next workshops, the EPO Economic and Scientific Advisory Board could consider inviting an even broader group of experts (e.g. representatives from SMEs and start-ups, NPOs, the European Commission, or national governments).

Summary

Like Work Group 1, the experts of Work Group 4 came to the conclusion that, should the EPO consider supporting small entities, it should not treat all applicants equally. Additionally, they noted that, if support for SMEs is needed, it does not necessarily have to come from the EPO. Patent attorneys could advise SMEs at a lower price. Additionally, SMEs could be offered tax deductions.

No consensus was reached as regards the support of universities. But consensus was reached that SMEs and universities have to be treated differently. If the EPO were to support universities, how could it make sure that large, commercially successful universities or private firms (co-operation partners) did not receive unnecessary (undue) support, i.e. how could it prevent abuse of the system?

In accordance with Work Groups 1 and 2, Work Group 4 came to the conclusion that patent attorneys’ fees constitute a substantial part of the patent applicant’s costs. These fees are not under the EPO’s control. The second highest cost driver is renewal fees, which again are beyond the EPO’s control. In other words, many of the decisions to be made are not within the EPO’s remit.

Again, in agreement with Work Groups 1 and 2, a consensus was achieved among the experts of Work Group 4 that fee modifications should not make the system more complex, since this would increase costs.
4 Conclusion, recommendations, and areas of further investigation

The objectives of the EPO Economic and Scientific Advisory Board’s workshop on pricing and fees were to identify, in the light of existing policies, materials and studies, the most relevant fee-related issues and to come up with recommendations for the structure and the setting of fees.

Review of the experiences in different jurisdictions (EP, US, JP, and CN) indicated that the fee systems at different patent authorities have changed considerably over the last years. One reason for the changes was that the patent authorities started to recognise the role of procedural and renewal fees to influence applicants’ behaviour. The EPO and most of national patent offices have adopted the traditional fee structure (low pre-grant fees and high post-grant fees). A change in the fee policies is unlikely. With the exception of the EPO and the UK Intellectual Property Office, the patent authorities represented at the workshop currently give fee reductions to small entities and universities.

Companies, especially large multinational firms, invest in intellectual property if the benefits exceed the costs. Since patent fees (procedural and renewal fees) only account for a small portion of the costs induced by intellectual property, fees would have to be increased considerably to have an effect on the behaviour of these applicants.

Universities need patents to be able to grant licenses to facilitate technology transfer. A decrease in the fees might result in a decrease in the quality of university patents, which may limit technology transfer and the commercialisation of university research.

The Work Group discussions revealed that there may well be some room for improvement in the European fee system. However, there is no urgent need for a fundamental fee reform. Above all, since patent fees only account for a small part of overall costs (user side) and other major cost drivers like R&D expenditures or attorneys’ fees are beyond the EPO’s control.

The traditional fee policy, applied by the EPO as well as by national patent offices, i.e. to set procedural fees relatively low and increase the renewal fees over the patents’ lifetime, was generally approved of by the experts attending the workshop. The fact that renewal fees are needed to finance examination activities of the patent authorities, since procedural fees do not cover the examination costs, was considered reasonable. However, some experts were concerned that this cross-financing may be considered unfair by the owners of high-quality patents.

The need for general support for SMEs and/or universities is a question of economic policy. The participants of the workshop did not reach a consensus about this issue. Whereas some participants saw no reason for supporting small entities, others opted in favour of supporting SMEs, start-ups, and universities. Individual inventors should, however, not be supported. Consensus could be reached that different interest groups have to be treated differently, i.e. there is no “one size fits all” solution. If small entities are supported, that support does not necessarily have to be provided by the EPO. Support could entail providing better access to pre-filing information, tax deductions, or a reduction of attorneys’ fees.

The discussions during the workshop have made it clear that the European fee policy is affected by the tension between (1) setting the fees low to make the European patent system widely accessible for the purpose of promoting innovation, bringing with it the risk of low-quality patent applications, and (2) setting the fees high to avoid low-quality applications, bringing with it the risk of applicants switching to NPOs, secrecy, or utility models.

Taking account of this tension and the experts’ comments, it is concluded that current European fee system needs fine-tuning. The EPO could, for instance, consider changing the timing of the fees or of particular fees like late procedural fees. In order to prevent the problem from deteriorating, fee changes should not make the European patent system more complex. Any fee change should be justified on the basis of a clear rationale. It should take into account possible unintended consequences. Wherever possible, fee changes should be accompanied by an ex-ante cost benefit analysis and an ex-post impact assessment.

In contrast to increasing the fees to cover procedural costs, the EPO might also want to consider decreasing their costs. A simplification of the European patent system as well as closer co-operation with NPOs, to avoid duplication of work, might help to increase the efficiency of the system. Better access to information would not only reduce the entry barriers to the patent system, better informed applicants are also able to file patents of higher quality and, hence, cause less work for patent examiners.
To be better able to decide about required adaptations of the European fee system, more (empirical) evidence is needed on the motives of different types of applicants to patent, and on whether a fee increase would deter certain patent filing practices and/or lead to higher quality patent applications. And do patents actually provide an incentive to innovate? Research is also required on the impact of a reduction of fees vs. a deduction of fees, which has, so far, hardly been addressed in theory and practice. Finally, the impact of the timing of a payment on the behaviour of applicants (e.g. should fees be due on the day a divisional is filed?) could be analysed in more detail. Further research could also discuss the need of a “code of conduct” for other cost-driving parties, such as applicants and attorneys.

Relevant literature

Azoulay, P., Ding, W., Stuart, T. (2009)
The Impact of Academic Patenting on the Rate, Quality and Direction of (Public) Research Output, Journal of Industrial Economics 57: 637–76.


de Rassenfosse, G. and van Pottelsberghe, B. (2012)

Europe Economics (2010)


Gilbert, R., Shapiro C. (1990)
Optimal patent length and breadth, 21 RAND Journal of Economics.

The Economics of the European Patent System – IP Policy for Innovation and Competition, Oxford University Press.


The rigour of EPO patentability: an insight into the induced withdrawals, Centre Emile Bernheim, Research Institute in Management Sciences’s Working Paper.

Scotchmer, S. (1999)
### Annex 1

**List of participants at the Economic and Scientific Advisory Board’s Workshop on Pricing and Fees**

**Date:** 8 May 2012  
**Venue:** European Patent Office, Erhardtstr. 27, room 128, 80469 Munich (DE)

<table>
<thead>
<tr>
<th>Surname</th>
<th>First Name</th>
<th>Affiliation</th>
</tr>
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<tbody>
<tr>
<td>Bessen</td>
<td>James</td>
<td>Lecturer, Boston University School of Law</td>
</tr>
<tr>
<td>Danguy</td>
<td>Jérôme</td>
<td>Solvay Brussels School of Economics and Management</td>
</tr>
<tr>
<td>de la Fouchardière</td>
<td>Marie-Noëlle</td>
<td>Vice-President Patents Administration and Operational Management, Technicolor</td>
</tr>
<tr>
<td>de Russé</td>
<td>Béatrix</td>
<td>Executive Vice-President, Intellectual Property and Licensing at Technicolor</td>
</tr>
<tr>
<td>di Minin</td>
<td>Alberto</td>
<td>Scuola Superiore Sant’Anna</td>
</tr>
<tr>
<td>Ficco</td>
<td>Stefano</td>
<td>Senior Consultant at Europe Economics</td>
</tr>
<tr>
<td>Fischer</td>
<td>Alban</td>
<td>Head Patent Division, Vice-Director-General, Swiss Federal Institute of Intellectual Property</td>
</tr>
<tr>
<td>Goddar</td>
<td>Heinz</td>
<td>European Patent Attorney, partner at Boehmert &amp; Boehmert</td>
</tr>
<tr>
<td>Graham</td>
<td>Stuart</td>
<td>Chief Economist, USPTO</td>
</tr>
<tr>
<td>Granieri</td>
<td>Massimiliano</td>
<td>Associate Professor, University of Foggia</td>
</tr>
<tr>
<td>Hall</td>
<td>Bronwyn</td>
<td>Professor, University of California, Berkeley</td>
</tr>
<tr>
<td>Harhoff</td>
<td>Dietmar</td>
<td>Professor at Ludwig-Maximilians-University Munich</td>
</tr>
<tr>
<td>Helmers</td>
<td>Christian</td>
<td>Assistant Professor, Universidad Carlos III de Madrid</td>
</tr>
<tr>
<td>Hoisl</td>
<td>Karin</td>
<td>Junior Professor, Ludwig-Maximilians-University, Munich (LMU)</td>
</tr>
<tr>
<td>Huebner</td>
<td>Stefan Rolf</td>
<td>European Patent Attorney, SR Huebner &amp; Kollegen</td>
</tr>
<tr>
<td>Lacoste-Bourgeacq</td>
<td>Jean-François</td>
<td>CEO, Qiventiv Systems</td>
</tr>
<tr>
<td>Le Forestier</td>
<td>Eric</td>
<td>European Patent Attorney, partner at Cabinet Regimbeau</td>
</tr>
<tr>
<td>Leißler-Gerstl</td>
<td>Gabrielle</td>
<td>Patent Attorney, Hoefer &amp; Partner, Munich</td>
</tr>
<tr>
<td>Mercer</td>
<td>Chris</td>
<td>Director, Chris Mercer Consulting Ltd</td>
</tr>
<tr>
<td>Mitra-Kahn</td>
<td>Benjamin</td>
<td>Economic Advisor, UK Intellectual Property Office</td>
</tr>
<tr>
<td>Molnár</td>
<td>István</td>
<td>Patent Attorney, Danubia Patent and Trademark Attorneys</td>
</tr>
<tr>
<td>Mu</td>
<td>Rongping</td>
<td>Director-General, Institute of Policy and Management, CAS</td>
</tr>
<tr>
<td>Nachtrab</td>
<td>Kevin</td>
<td>Senior Patent Attorney &amp; Attorney-at-Law, Johnson &amp; Johnson</td>
</tr>
<tr>
<td>Nagoaka</td>
<td>Sadao</td>
<td>Professor, Hitotsubashi University</td>
</tr>
<tr>
<td>Odman Boztosun</td>
<td>N. Ayşe</td>
<td>Associate Professor, Akdeniz University, Antalya</td>
</tr>
<tr>
<td>Peters</td>
<td>Ruud</td>
<td>Chief Intellectual Property Officer, Philips Intellectual Property and Standards</td>
</tr>
<tr>
<td>Rollins</td>
<td>Tony</td>
<td>Managing Counsel, European &amp; Japanese Patents at Merck Sharp &amp; Dohme Ltd.</td>
</tr>
<tr>
<td>Schneider</td>
<td>Ingrid</td>
<td>Senior Researcher and Lecturer, University of Hamburg</td>
</tr>
<tr>
<td>Sipilä</td>
<td>Kari</td>
<td>Business Advisor, Future Innovations, Espoo</td>
</tr>
<tr>
<td>Song</td>
<td>Hefa</td>
<td>Deputy Director of the Center of IP research and training of the Chinese Academy of Sciences (CAS)</td>
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<tr>
<td>Squicciarini</td>
<td>Mariagrazia</td>
<td>Senior Economist, Head of Unit at OECD</td>
</tr>
<tr>
<td>Steverink</td>
<td>Paul</td>
<td>Founding father, JPWaVe BV</td>
</tr>
<tr>
<td>Tangena</td>
<td>Antonius</td>
<td>President, European Patent Institute epi</td>
</tr>
<tr>
<td>Tapia</td>
<td>Claudia</td>
<td>Director, IP Policy in the department Standards &amp; Licensing at Research In Motion</td>
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Observers from the EPO
Margot Fröhlinger, Stephen Hey, Konstantinos Karachalios, Nicolas Kopp, George Lazaridis, Jean-François Lebesnerais, Florence Muller, Minna Nikolova-Kress, Giovanna Oddo, Berthold Rutz, Bettina Reichl, Alfred Spigarelli, Karin Terzić
Annex 2

Programme of the ESAB workshop on Pricing and Fees

09.00  Opening 
Nikolaus Thumm, EPO

09.10  Plenary 1 
Chair: Bronwyn Hall, UC Berkeley

Comparison of existing fee policies
– CN: Mu Rongping, Chinese Academy of Sciences 
– JP: Sadao Nagaoka, Hitotsubashi University 
– EPO: Nikolaus Thumm, EPO 
– EPC National Patent Offices: Stefano Ficco, Europe Economics

10.30  Coffee break

10.45  Group work

Winners and losers of the current European patent fee system
Chair of Group 1: Mariagrazia Squicciarini, OECD

Influence of pricing on applicants’ behaviour and on competitiveness of European companies
Chair of Group 2: Ruud Peters, Philips Intellectual Property & Standards

Fees as policy leverage? Alternatives?
Chair of Group 3: Ingrid Schneider, University Hamburg

How can access to the European patent system be guaranteed for SMEs and universities?
Chair of Group 4: Massimiliano Granieri, University Foggia

12.00  Plenary 2 
Chair: Tony Rollins, Merck Sharp & Dohme Ltd

Presentation of group work findings

13.00  Lunch break

14.00  Plenary 3 
Chair: Heinz Goddar, Boehmert & Boehmert

Stakeholders’ perspectives on the role of patent pricing and fees

Industry
Ruud Peters, Philips Intellectual Property & Standards
Patent attorney
Stefan Huebner, Huebner & Partners
University
Massimiliano Granieri, University Foggia
Acknowledgements
The Economic and Scientific Advisory Board would like to thank the presenters, the facilitators of the work groups, as well as the chairs (in alphabetical order):
Alberto di Minin, Stefano Ficco, Heinz Goddar, Stuart Graham, Massimiliano Granieri, Bronwyn Hall, Stefan Huebner, Sadao Nagaoka, Ruud Peters, Tony Rollins, Mu Rongping, Ingrid Schneider, Mariagrazia Squicciarini, and Nikolaus Thumm.
The Economic and Scientific Advisory Board would also like to thank all those who participated in the workshop (see Annex 1) for the fruitful discussions and their valuable contributions.

14.45 Coffee break and group photo outside of the building

15.15 Continuation group work
Focus on unresolved issues, challenges, recommendations and further research

16.15 Plenary 4
Chair: Nikolaus Thumm, EPO
Presentation of group work findings and joint review of recommendations

17.15 End of workshop