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## Policy Options for the Improvement of the European Patent System

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**Authors:** Bjørn Bedsted [bb@tekno.dk](mailto:bb@tekno.dk)  
Signe Skibstrup Blach [ssb@tekno.dk](mailto:ssb@tekno.dk)  
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Contacts: Bjørn Bedsted, Signe Skibstrup Blach (e-mail see above)  
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### Purpose

The purpose of the project "Policy options for the improvement of the European patent system" has been to assess whether the European patent system adequately fulfils its purpose of stimulating social and economic welfare through the enhancement of technological innovation, and to investigate if improvements can be made. It was commissioned by The European Parliament's STOA panel (Scientific Technology Options Assessment) from the European Technology Assessment Group (ETAG) and carried out on its behalf by the Danish Board of Technology. The main target group, therefore, was the Members of the European Parliament.

### The European Patent System under Pressure

Since October 2005, a group of five European scientific institutes (ETAG) has been providing scientific services for the European Parliament's STOA panel on social, environmental and economic aspects of new technological and scientific developments. Inspired by a report from the Danish Board of Technology about the future of the European patent system, the STOA panel commissioned an assessment of the current strengthening and expansion of the patent system in order to identify key challenges and ways of dealing with them.

#### Combined Expertises

A working group was first established, comprising three legal and three economic experts, hands-on experience from the European Patent Office (EPO) as well as a rapporteur. This com-

bination of expertise has been applied in order to bring together insights from these two disciplines, both of which are central to current debates about the workings of the patent system but whose knowledge is rarely combined in this way.

The task of the group was to write a report with the following objectives:

- to analyse the historical and present impact of the European patent system on innovation and diffusion of knowledge,
- to identify current key trends in the patent system,
- to identify the challenges these trends present,
- to point to policy options that may meet these challenges and, in the process, improve the functioning of the European patent system.

The analysis provided by the report and the policy options presented as a result draw on existing knowledge from legal and economic experts as well as on input from various stakeholders and peer reviewers. The group met five times to discuss



the report contents and drafts prepared by the rapporteur assigned to the project. In between these meetings, various drafts of the report were exchanged and commented on through e-mail communication.

A preliminary draft of the background analysis was presented and debated with MEP's at a workshop at the European Parliament in November 2006. In attendance were 12 independent

experts and stakeholders, all invited to present policy options and debate them with MEP's and the working group. These contributions played an important role in compiling the report and writing the final draft. Furthermore, an interim version of the full report was commented on by several workshop speakers and peer reviewed by economic and legal experts. A final draft of the report was presented and debated at the European Parliament in June 2007 with MEP's and various stakeholders.

## Balancing Inventor's Rights with Societal Concerns

The fundamental premise of the report is that the primary purpose of a patent system is to enhance social and economic welfare by stimulating innovation and diffusion of knowledge. Balancing the exclusive rights of a patent granted to inventors with the overall societal concern of wider economic growth and social welfare is fundamental, because the reward offered to inventors in the form of exclusive rights provides the incentive to innovate, but if the reward is too excessive, it might hamper innovation and the distribution of knowledge. The trends and challenges identified by the working group all relate more or less to this balance.

### Important Trends Influencing the Balance of the European Patent System

#### 1. Increasing number of inventions

New windows of opportunity have been opened by R&D in a number of technical fields, which individuals, firms and other organizations seize upon in order to produce an increasing numbers of inventions, which then require patent protection. Technological fields such as electrical engineering/electronics and biotechnology/pharmaceuticals have contributed greatly to this trend. Also nanotechnologies are set to repeat the explosion formerly seen by biotechnologies, which have made patent protection available in fields not previously appearing on the patenting scene.

#### 2. New inventors

New inventors not formerly involved in patenting, such as universities, are appearing. This is the result of science, especially academic science, emerging as a fertile ground for inventions. Also countries that did not use the patent system before now tend to use the patent system more. For example the number of patent applications from China and India are growing fast and seem on the verge of catching up with the Korean patent office, where the patent portfolio of applicants is already as large as that of well-established European countries.

#### 3. Newly patentable subject matters

Science-based inventions contribute to the growth of patent applications to the extent that many of the new subject matters have been added in order to make room for science-based inventions. Most notably, this has occurred with gene-related patents.

#### 4. Increasing demand for patent protection

Firms and other organizations that engage in inventive activity nowadays have a higher propensity than before to look for patent protection for "assertive" and "defensive" reasons. The explanation for this is that companies and not-for-profit research institutions are often worried about the possibility of other organizations ending up monopolizing a new technological field through patenting and, as a result, pushing them to pursue strategic patenting activities to guard against that potential monopoly.

## Challenges Facing the European Patent System

From the assessment of key trends, the report identifies a range of challenges:

#### 1. Coping with a rapidly increasing demand for patent rights without compromising the quality

Overall, the total number of patent applications is putting strain on the system and causing problems for patent examiners. Potentially, this pressure will mount further as, for instance, the increase in the number of countries engaged in inventive activities means the filing of more and more patent

applications at the EPO. As a result, although it is difficult to document, the quality of patents is reported to be declining. The main challenge is to prevent this from happening within the European patent system.

#### 2. Ensuring that too broad patents are not issued in Europe

The speed at which new subject matter and science-based inventions are introduced in the patent system makes it harder to assess the patentability requirements, especially the state of the art, and thus to determine whether the claimed invention is novel and involves an inventive step. An overall result is that too broad patents are occasionally granted and one of the effects is that innovation is hampered as other inventors are unable to work around the patents. The main challenge is to ensure that too broad patents are not issued within the European patent system.

### 3. Alleviating the effects of patent thickets

The growth of patents in complex technologies, which require the assemblage of a multitude of inventions to move forward, has in certain areas, such as electronics, resulted in a particular form of patent behaviour. Defensive and strategic patenting has, for instance, resulted in patent thickets in some sectors, the consequences of which are generally undesirable in terms of creating too many, possibly overlapping patents, which can crowd a technological field and make it difficult and costly to navigate through. The main challenge is to alleviate the effects of patent thickets within the European patent system.

### 4. Freeing company resources from trading patent rights and licensing

More companies are patenting and the effect is that a greater number of companies have to spend more time and effort on

trading rights and licensing. Such resources may have been better used to innovate thus the main challenge is to ensure that companies are not forced to deal excessively with patenting and licensing and are ‘freed up’ to concentrate more on innovation.

### 5. Ensuring an increased level of transparency and political engagement

Increased interest in the system has resulted partly from the trends about emergent technologies and new inventors appearing and partly from a more general shift in emphasis toward issues of “governance”. The main challenge is to ensure that the European patent system is as transparent as possible and that the involvement of more experts, politicians and stakeholders in the future development of the system is secured.

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## Working Group Recommendations

The working group concludes that, left unchecked, the trends identified will have a damaging effect on the European patent system and may result in a negative impact on economic and social welfare. The working group developed the following policy options to meet the challenges:

### 1. Insertion of the economic mission of the patent system in the European Patent Convention

The recommendation on insertion of the economic mission of the patent system in the European Patent Convention involves the introduction of a preamble into the legislation. This insertion would state in clear terms what the purpose of the legislation is, namely to promote social and economic welfare. A suggestion for the wording of the preamble is as follows:

*“The granting of patents serves the purpose of enhancing social and economic welfare by means of encouraging inventions and their diffusion. The protection provided by patents should be sufficient to ensure proper incentives to inventors. This should imply that patents should be granted in a proportionate and transparent manner, so as to ensure legal certainty”.*

The preamble should be placed in the European Patent Convention and if the European Union is able to come forward with a community patent that same preamble is proposed to be included in the community patent legislation. The effect of a preamble with regard to, for instance, emerging technologies would be to guide legislators and to ensure the legislator considers whether the application of the patent system to an emergent technology makes sense from the point of view of the economic mission of the patent system.

### 2. Enhancing governance within the European patent system

The policy options under the governance heading are concerned with issues such as transparency and participation in activities related to the European patent system. One of the main challenges to be met regarding the debate about the future of the European patent system is ensuring an increased level of transparency and political accountability. First and foremost, this involves strengthening the role and expertise of the European Parliament in this field, given that it is a critical participant in these sorts of discussions. The other main challenge is trying to accommodate the rise in public interest and wish for involvement of civil society at large in matters concerning the European patent system.

The first recommendation of the working group is to establish a standing committee within the European Parliament that is dedicated to patent matters in order to formalize an internal structure within the European Parliament that will enhance its awareness of European patent issues.

The second recommendation is to establish an external advisory body to examine the impact of the European patent system on the innovative sector and other sets of interests in society. The findings it gathers and views it expresses will be part of a formalized dialogue with the European Parliament and, specifically, its standing committee on patents. This sort of body would be composed of experts in law, economics and patent-related matters. An involvement of various practitioners and stakeholders, such as consumer groups, is highly recommended.

Finally, the working group recommends the establishment of a more participatory environment within the EPO and the Commission by including more stakeholders, scientists, NGOs and consumers in the ongoing debate about the design of the European patent system.

### 3. Improving quality aspects in regard to patentability standards and patent granting procedures

In order to strengthen the patent system and create stronger patents, the report recommends to look at two aspects: (i) the way in which patent offices apply the given standards for patentability and (ii) raising the standards themselves. Looking at the standards concerns the question of what is an invention and when is it valuable enough to be granted a patent. The report suggests taking a closer look at the concept of ‘inventive step’ to see if it is still fulfilling the function it is meant to have and concentrate on the concept of ‘who is a person skilled in the art’.

Specific suggestions are listed in the report and include e.g. the introduction of quality management mechanisms in order to promote and monitor that consistent and predictable decisions are taken and to increase the awareness about the fact that patent offices are there to serve the general public interest and not the specific interests of applicants.

### 4. Dealing with emerging technologies

The patenting of emerging technologies gives rise to special concerns about patent quality in regard to both the patent system and the individual patent. The quality problem at the system level is about setting the standards for patents and deciding on what is going to be considered patentable subject matter and what is not. At the executive level (i.e. the EPO), the quality problem relating to emerging technologies deals with applications of patent standards in individual cases. The special problems in emerging technologies in this regard are that prior art can be limited and hard to find for an examiner. In order to avoid these sorts of problems, the report suggests bolstering the executive level by allocating additional resources to EPO examiners to better assess prior art and avoid too broad patents being granted, and finally, to ensure ongoing deliberations between politicians, experts and stakeholders on what is patentable and what is not.

### 5. Increasing access to patented inventions

Patents that crowd the market create a patent thicket that makes it difficult for an inventor to enter the market. In order to overcome a patent thicket, negotiations will have to be started with each and every patent owner in order to obtain a legitimate access to the patents and to obtain the necessary licences. The report suggests two different measures, which would facilitate access to patented technology. One is the license of right, which is a legal mechanism by which a patent holder voluntarily chooses to give general access to anyone willing to pay a certain license. The other possibility suggested is to facilitate access to a web of patents by the establishment of collective rights management models such as patent pools and clearinghouses. The report recommends further investigation of these models, especially in view of current EU competition law.

### 6. Facilitating defensive publications

The report recommends that the European patent system be geared more towards an increased use of publication of inventions rather than patenting *per se*. Both companies and not-for-profit research institutions are often worried about the possibility that other organizations will end up monopolizing a new technological field through patenting, which may push them to pursue strategic patenting activities to guard against that potential monopoly. But strategic patenting is a costly way to prevent monopolization. The publication of scientific results may achieve the same effect for free. Such a process is referred to as “defensive publishing”. And, in fact, firms for a long time have used defensive publishing in industry areas such as software. In cases when an inventor decides to defensively publish rather than patent, he gives up the potential of exclusive rights. In return though, a freedom to use the invention is secured for that inventor, and for others. For this kind of defensive publishing to be effective, publications must be made readily accessible to examiners so as to provide a helpful additional source of information, including the prior art. It is recommended therefore, that measures be introduced to facilitate the practice of defensive publications within the European patent system.

## Sources and References

The Danish Board of Technology: [www.tekno.dk](http://www.tekno.dk)

STOA (the report is available for download under “final studies”): [www.europarl.europa.eu/stoa/default\\_en.htm](http://www.europarl.europa.eu/stoa/default_en.htm)

ETAG: [www.itas.fzk.de/etag/](http://www.itas.fzk.de/etag/)

The members of the group were: Mr. Robin COWAN, Professor of economics, BETA, Université Louis Pasteur and UNUMERIT, Universteit Maastricht; Mr. Wim Van der EIJK, Principal Director International Legal Affairs and Patent law,

EPO; Mr. Francesco LISSONI, Professor of Applied Economics, University of Brescia; Mr. Peter LOTZ, Head of Department of Industrial Economics and Strategy, Copenhagen Business School; Mrs. Geertrui Van OVERWALLE, Professor of IP Law, University of Leuven, Belgium; Mr. Jens SCHOVSBO, Professor, University of Copenhagen, Faculty of Law and Mr. Matthew ELSMORE (rapporteur), Assistant Professor, Aarhus Business School-University of Aarhus.

The project and the report were coordinated by Bjørn Bedsted, project manager with the Danish Board of Technology. The project was supervised by Mr. Philippe Busquin, MEP and Chairman of the STOA panel.

About the EFMN: Policy Professionals dealing with RTD, Innovation and Economic Development increasingly recognize a need to base decisions on broadly based participative processes of deliberation and consultation with stakeholders. One of the most important tools they apply is FORESIGHT. The EFMN or European Foresight Monitoring Network supports policy professionals by monitoring and analyzing Foresight activities in the European Union, its neighbours and the world. The EFMN helps those involved in policy development to stay up to date on current practice in Foresight. It helps them to tap into a network of know-how and experience on issues related to the day to day design, management and execution of Foresight and Foresight related processes.