# Report Q178

## Scope of Patent Protection

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## Summary Report of Group Reports

### I. Introduction

In June 2003 a questionnaire was sent to the National and Regional Groups asking to give their view on various questions linked to the topic above. This project is new to AIPPI and lies outside the traditional way of working methods in that it also tried to obtain opinions from outside the Association at the same time. A similar questionnaire was sent to numerous addressees in industry, of governmental and non-governmental organisations and other institutions. Unfortunately the level of response was quite low and only about 10 to 15 % of those addressees have responded so far. A report on these responses will be prepared separately. This report only deals with the answers given by the National and Regional Groups of AIPPI.

Despite the relatively tight schedule the Reporter General has received 27 answers from the Groups. 25 of them have prepared a report whereas 2 Groups (Lithuania, South Africa) have declared that they do not intend to answer the questionnaire. The reports submitted come from the Groups of Argentina, Australia, Brazil, Canada, Chile, China, Denmark, Egypt, France, Germany, Greece, Hungary, Japan, the Netherlands, Panama, Paraguay, Peru, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom and the US. It is noteworthy that this list contains a wide variety of countries from different parts of the world and with very different political, social and economical backgrounds. This is reflected quite clearly in their answers.

In addition to the Group Reports the Special Committee Q132 *("Computer software, information networks, artificial intelligence and integrated circuits")* has also submitted a quite interesting report which deals with the question in the specific context of the Committee. This report underlines some of the views expressed by the Groups. The purpose is also to find ways where Q178 can support the work of Q132.

As an explanatory note it should be mentioned once again that the title of the question *"Scope of Patent Protection"* is meant to deal only with issues of patentable subject matter. Questions of claim construction or the rights conferred to the patentee by a patent were not in the realm of the questionnaire although they are also linked to the scope of patent protection.

In the answers it was also observed that asking for fields of technology might imply that an invention has to be technical. Since this is a separate debate which should be avoided as much as possible in the context of this project (and which was explicitly mentioned in the questionnaire), we wish to make clear again that there is no such implication in the question and that therefore issues of defining the term "technical" will not be considered.

### II. Questions

*1.1 Which are, in your view, the fields of technology in particular affected by recent discussions concerning the scope of patent protection?*

The Groups almost unanimously state that the fields of biotechnology and computer implemented inventions, comprising software patents and business methods, are the most

discussed areas. A few Groups mention also medical technologies (Japan) and the medical/diagnostic treatment of human beings (Australia, Chile, the Netherlands). The Swedish Group mentions the term "Life Science" which is often used and which has become quite popular to describe new fields of biotech and medical research. In this context also the latest developments of the WTO have to be considered which led to another step in the implementation of the Doha declaration.[1] The Peruvian Group mentions the importance for third world countries to consider traditional knowledge, originary species and genetic resources[2].

*1.2 What makes these fields of technology special compared to other fields of technology in the context of this discussion?*

All these fields of technology have in common that they have experienced a rapid growth and development in the past few years. This correlates to a development from more manufacturing-oriented societies to service- oriented economies. The UK Group points out that these developments were not foreseen (and probably not foreseeable) when the European Patent Convention (EPC) was drafted some 30 years ago. This may be one of the reasons why guidelines which could be applied to these innovations are either missing entirely or at least lack clarity.

Biotech inventions often collide with moral, ethical and religious values. The German Group observes that biotech inventions (e.g. proteins such as insulin, Erythropoietin or interferon) have been known and accepted for a long time. New areas (e.g. the human genome) have been made accessible by developments of other technologies, in particular computer technologies. The Brazilian Group also points out the importance of biodiversity which is the richest in the world in Brazil and which is reflected in the Rio Convention on Biological Diversity.

Medical treatments as well as pharmaceutical inventions and the patentability of the second medical indication lead inevitably to questions of accessibility to new medicines and how doctors can avoid patent infringement in emergency situations. This is closely connected to social and health issues The Dutch Group specifically mentions the possibility of compulsory licenses for such patents.

Regarding business methods and computer implemented inventions in general one has to state that many business methods have been known for long but have been adapted for the implementation by computers. On the other hand, new business methods (such as internet trade or certain financial transactions) have only been developed because of computer technologies and innovation in this field. They have created the "New Economy". Difficulties arise due to the fact that the methods which might form the subject of a patent claim are not tangible. The Spanish Group raises concerns that patents for business methods "might grant disproportionate monopolies without correlative benefit to society and economy in general." Another concern mentioned among others by the Swedish Group is that patents will be granted for simple (trivial) innovations just because they are technically difficult.

*2.1 What is the definition of patentable subject matter in your jurisdiction? Do different definitions apply in various fields of technology? If so, what are the differences?*

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1 This is followed closely and in more detail by Q94.

2 See Special Committee Q166.

There is a general consensus among the Groups that the definition of patentable subject matter does not vary from technology to technology but that the same definition applies in all fields. In general, it can be stated that patents can be obtained for subject matter which is new, based on an inventive step (which is not obvious) and which is industrially applicable/useful. The German Group again mentions the problem of "technicality" which plays an important role but which needs to be addressed in the context of other Committees. The Brazilian Group observes that pharmaceutical products and processes can be patented but that this requires the prior approval of the National Agency for Sanitary Surveillance (ANVISA).

The US Group states that any new and useful invention is patentable provided it is not obvious and adequately disclosed and described. In particular, they emphasize the requirement of usefulness as opposed to industrial applicability. Furthermore, an invention is only eligible for patenting if it falls within one of the four categories (1) articles of manufacture, (2) compositions of matter, (3) machines and (4) processes.

*2.2 What are exemptions/exceptions from patentability?*

The answers to this part of the question show a broad variety of options in different countries. The majority of countries knows a list of exceptions. In Europe most legislations follow the rules of the EPC. Exceptions which are not considered inventions comprise mere discoveries; aesthetic creations; scientific theories and mathematical methods; rules and methods for performing mental acts, playing games or doing business; computer programmes and presentations of information. Other subject matter may be regarded as inventions and in theory fulfil the requirements for patentability but is nevertheless expressly exempt from patentability. This group of subject matter comprises methods for the treatment of the human or animal body by surgery or therapy and diagnostic methods; inventions whose commercial exploitation would be contrary to ordre public or morality; plant or animal varieties and essentially biological processes for the production of plants or animals. Similar rules can be found in other legislations throughout the world. The Argentinian Group specifically mentions that the totality of biological and genetic material existing in nature or their replica in biological processes is exempt from patentability. The Group of Peru lists the second medical indication as an explicit exclusion from patentability.

On the other hand the US Group emphasizes that, in their legislation, the only exemption from patentability are inventions or discoveries which are "useful solely in the utilization of nuclear material or atomic energy in an atomic weapon". As long as a subject matter fulfils the criteria mentioned above under 2.1 it is patentable. A similar situation can be found in Australia. There the single exemption from patentability is in respect of human beings and the biological processes for their generation.

*2.3 What is the reasoning behind those exemptions/exceptions?*

Whereas it should be mentioned that in many jurisdictions, such as the member states of the EPC, certain exceptions (e.g. computer programs) only apply to that subject matter as such, the reasons for those exceptions are shared by the majority of the Groups.

The exceptions concerning biological/medical inventions are mostly based on moral reasons in different aspects. The Canadian Group states that higher life is not considered a manufacture or composition of matter. The Swedish Group observes that this is an expression of the distinction between micro- and macrobiology in patent law. Medical treatments or diagnostic methods are exempt because doctors should not be hindered in treating their patients and should not have to deal with questions of patent law before

they start the treatment. According to the Hungarian Group such inventions are simply not technical or industrially applicable. This is also mentioned as a reason by the Brazilian Group.

Computer implemented inventions and in particular software may be considered patentable in general but may be presumed to be lacking the other requirements (novelty, inventive step).

The UK Group expresses the opinion that the exceptions reflect the state of technology at the time when the EPC was drafted. They contain examples of matter which could not be patented or which people would have no interest in patenting. They state that the exceptions in Art. 52 and 53 EPC are to some extent arbitrary and illogical and that some of the exceptions cannot be based on any rationale, such as the preclusion of the dissemination of dangerous technology, since the Revision Act of the EPC will, in accordance with TRIPS, delete the reference to "publication".

The US Group emphasizes that the wide definition for patentable subject matter has its historic origin in the first Patent Act of 1793 and that the only exception serves to complement the general prohibition against any party not specifically authorized by the US government developing nuclear weapons. The other requirements exclude subject matter which is not within the "useful arts". It should not be possible for a patentee to exclude other people from using a law of nature or applying an abstract idea to yield any and all tangible products or processes resulting from such application. This would discourage people from developing inventions in that specific field.

*3.1 Is the scope of protection sufficient or does it lack opportunities for further protection? This includes economic aspects for the users as well as for the public in general regarding various technologies.*

The views among the Groups whether patent protection is sufficient differ substantially. However, there is not necessarily a split between developed and developing countries as one might imagine. On the contrary, countries from both groups share the same opinion whereas one can also find different views within one group.

The US Group and the Australian Group state that, in their jurisdiction, patent protection is sufficient due to the fact that there are hardly any exceptions from patentability. The US Group expresses the view that the standards of many countries for patentability fail to confer a proper scope of protection. The market should decide which inventions deserve to enjoy commercial success. Rather than limiting patentability in general one should ensure that the criteria, such as novelty, non-obviousness and utility are applied properly. This calls for expanding patent protection where it is not yet in place. Also the Canadian Group feels that certain technologies are not adequately protected, such as "inventions related to higher life forms".

In Europe, the Groups are split in their views. As regards biotech inventions, the EU Directive 98/44 EC of July 1998 has brought some guidelines. However, there is still a lack of transition into the national laws in many countries despite the fact that the deadline has long expired (30 June 2000). Whereas Groups express the opinion that, in general, patent protection could be considered sufficient, they feel a need to come to a harmonization with other systems, such as the US, in order to avoid the existing discrepancies. In this context the limitations of Art. 52 (2) and 52 (4) EPC are criticized as being too rigid (Denmark) or arbitrary (UK). In particular, the European Groups refer to computer implemented inventions, but also to biotech inventions and methods for treatment and diagnostics. The Swiss Group raises the question why there should not be a "privilege (patent or other) for innovation (including non-technical) where economical value is created".

The Dutch Group suggests omitting the requirement of "technicality". This would again reflect the change of society from manufacturing to a more service-oriented economy. This view is also shared by the French and the German Groups.

On the contrary, the Polish Group raises concerns that the patenting of software may lead to a situation "similar to the one existing with generic medicines ('generic' software?)". In their view, the protection of software through copyright is sufficient.

The South American Groups find that patent protection is insufficient in certain areas. The Brazilian Group states that the approval for patenting medicines should be abolished. According to the Group of Chile the concept of industrial applicability is too narrowing and limits patenting. Also the Groups of Panama, Paraguay and Peru express the view that patenting is insufficient in many cases.

The Chinese Group states that, although patent protection is not sufficient in the fields of biotech and computer implemented inventions, it is important to find a balance between expanding patent protection on the one hand and avoiding undue limitations for the public as a result of expansion on the other hand. The same idea is expressed by the Japanese Group regarding biotech inventions whereas they find that, for software related inventions, patent protection should be promoted further.

The Egypt Group expressly states that - being a developing country - the current scope of protection, although containing various limitations, is sufficient and gives enough opportunities for the users as well as the public in general regarding various technologies.

*3.2 If the scope of protection is not sufficient, how does this affect the users' policy on patenting? Does this also have an impact on research policy?*

Those Groups who observe an insufficient scope of patent protection unanimously see negative consequences in the field of research & development (R&D). The lack of patent protection leads to a loss of incentives in the R&D. The German Group points out that as a result of less protection also less information is made available to the public.

A further consequence is that the businesses and thus also economy becomes less competitive and experiences serious disadvantages compared to other economies which face less strict limitations. The US Group also mentions the issue of outsourcing. Whereas certain routine business operations, such as programming software, are often outsourced to other countries, countries with limited patent protection for computer-related inventions are not considered candidates for outsourcing of such product development activities.

Other countries mention different problems: the Group of Peru states that the lack of budget for technological research creates a bigger problem than the lack of patent protection. A similar situation is described by the Romanian Group. Even with sufficient patent protection the lack of material resources diminishes the number of patent applications and research activities.

*3.3 What are the obstacles from political or social sources outside the purely legal field which play a role in research and patenting?*

The answer to this question depends on the field of technology in which the obstacles are observed. Only the Hungarian Group states that there are few social obstacles due to the fact that the exemptions from patentability are based on a general social consensus.

Regarding biotech inventions religious and ethical groups raise their voices against patenting. In this context the Swedish and the US Group observe that there are many misconceptions about patent protection in the public which cause objections, such as the

assumption that a patent simply locks up a technology for 20 years. Such misconceptions bear a danger for the patent system in general, since they may influence political decisions to a great extent.

Another field is the patenting of pharmaceuticals. The Doha declaration of WTO has already been mentioned. The Brazilian Group observes that, with respect to patents for AIDS medicaments, patentees are under strong governmental pressure to reduce prices, since otherwise they are threatened with compulsory licenses. The Group of Panama states that the State Authorities allow the sale of generic products irrespective of an existing patent protection due to the high cost of the patented medicine in order to overcome the problems of the low income of the population.

Economic aspects play a significant role in this context. In particular Groups from smaller countries observe that the lack of economic support from the government or other organisations (Greece), the lack of economic means (Panama, Argentina) or the bad market economy (Romania) prevent more patent protection in that respective country.

The Chinese Group states that a developed country can obtain more reward from the patent system than a developing country because it has more inventions to be protected. This will, in the view of the Chinese Group, enlarge the existing economic gaps. They also observe that patent procedures are costly.

As regards software patents, the Open Source movement in various countries has lobbied strongly against patent protection. Also in this context attention should be drawn to general misconceptions of the public about patent protection. The US Group and the German Group point out that, in order to deal with concerns about trivial patents, one needs to take into consideration the strict application of the criteria for patentability and patent standards. If one can achieve a high quality of patent granting procedures, this will serve as a good argument against those concerns.

The German Group also points out that, in many cases, the Open Source movement uses products which have been developed by third parties. One ot their elements is the free exploitation of technical innovations and the business success (and thus the intellectual property) of competitors. Another concern raised by the Open Source movement is the interoperability of systems. This can be achieved by international standards and does not require the exclusion of patent protection as many examples in the past have successfully shown (GSM for mobile phones, CDs, DVD and video systems).

*3.4 How should new kinds of inventions be treated? Should there be an enlargement of patent protection? If so, what are the reasons?*

As stated above, the majority of the Groups is in favour of patenting inventions in new fields, such as biotech or computer implemented inventions. There is also a general consensus that all categories of inventions should be treated similarly. The UK Group specifically states that arbitrary exclusions from patentability should be removed to encourage a uniform treatment of all kinds of inventions and to provide certainty for patentees (or applicants), third parties and the public. In the view of the Groups there is no need for the creation of new laws or even new kinds of intellectual property rights. The US Group mentions that, in order to control commercial behaviour one should rather regulate activities than use the patent system to impose crude distinctions and conditions vis-à-vis classes of technology or invention.

The Egypt Group expressly states that there should be no enlargement of patent protection, since this would make the access to new technologies more expensive for developing societies. In particular, a more harmonized development of countries which aims at closing or at least narrowing existing gaps should be considered.

*3.5 If you find the range of patentable subject matter too wide, how should it be limited? What would be the reasons for such a limitation? What do you see as the positive effects of such a limitation?*

None of the Groups have responded suggesting that the scope of protection in their own jurisdiction should be limited. Some concerns have, however, arisen with regard to other jurisdictions and harmonization.

The US Group states that the provisions of Art. 27 TRIPS in its broadest sense should be considered to be the definition of the minimum extent for patent protection.

The Japanese Group expresses the opinion that in cases where the range of patentable subject matter is too wide, this should not only be addressed by court decisions narrowing the claims in infringement cases but also by way of making compulsory licenses easier.

The Chilean Group suggests that future patentable matters should not include inventions related to methods in which all their stages consist in simple physical movements made by a person ("tour de main"). Furthermore, no invention should be patented which is morally unacceptable, unhealthy and destructive or does not contribute to public welfare or human development.

The Chinese Group states that excluding subject matter from patenting may only be one solution for fields of technology for which the patent system may not be suitable. Another suggestion could be to introduce additional conditions for patentability which would then apply to all existing subject matter and which would leave room for new technical fields.

*4.1 Which upcoming problems do you see specifically as a result of a change of the scope of patent protection regarding the requirements for patentability, in particular novelty and inventive step?*

The main problems considered by the Groups concern the search for prior art (see also 4.2). The UK Group sees the exclusions of patentable subject matter themselves as the main problem. With regard to disclosure the Swedish Group points out that, in particular in biotech cases, the requirement of sufficient disclosure needs to be applied strictly.

*4.2 What are the specific problems of the granting proceedings (search, examination) if the scope of protection is enlarged?*

With new fields of technology the search for prior art will be more complex and difficult. This may cause delays and may also lead to a decrease in the quality of the examination. One of the main aspects will therefore be to set up databases which contain prior art and which facilitate the search and examination.

The Hungarian Group observes that in particular computer programmes and business methods are typical fields of activities which, when made publicly available, are very easy to copy. Therefore, very quick and resilient measures are required to provide an effective protection. Rather lengthy proceedings in granting have to be avoided. The quick development of these technologies may even outdate an invention on the day a patent is granted. This makes it questionable in the view of the Hungarian Group whether there is any use in granting "decades as monopoly period for such solutions".

The German and the French Group emphasize again the importance of avoiding trivial patents by applying the standards for patentability strictly. The threshold for inventive step in particular for software patents should not be too low.

The US Group points out that part of the problem of the search for prior art derives from the fact that in the past many things were kept as trade secrets and from the diversity of styles in which computer program inventions were written and summarized. The problem of improperly granted patents requires administrative procedures in the patent offices.

*4.3 What do you see as possible solutions for these problems? Would further harmonization of the laws help to solve such problems and, if so, in which way?*

Various Groups have proposed solutions on a national as well as on an international level.

Not only clear guidelines in the law are required (Argentina). Also the recruitement of resources is essential. This incorporates training of the examiners and the setup of databases (Germany).

Harmonization is seen as one of the major efforts. The Japanese Group points out that harmonization of the examination standards can help in this respect. The same applies to the exchange of search results and mutual recognition of work performed. In the view of the Swedish Group harmonization of the criterion of non-obviousness is necessary between the USPTO, the JPO and the EPO. The US Group also suggests identifying a system of "best practices" among the offices in order to benefit from each other. Interim measures could comprise smaller scale harmonization efforts, co-operation in searching, the use of examination results and expedited patent review procedures once a patent has been issued in a PCT Examining Authority.

The Hungarian Group raises the question whether for computer programmes and business methods alternative ways of protection should be provided which would be fitted to the particular nature of these inventions rather than forcing them into a non-fitting frame. Examples under Hungarian law comprise copyright, know-how protection under the Civil Code or under the competition law.

## III. Outlook

The Group reports have clearly shown that there is a need for the patent protection also in the fields of biotech inventions and computer implemented inventions. Where protection does not exist it should be introduced. To a lesser extent this also applies to other inventions in the medical field, such as pharmaceuticals in general, the second medical indication or methods for the treatment of the human body or for diagnostic methods.

At the same time the justified concerns of the public and of third parties have to be considered. This requires a distinction between real concerns which also the users of the patent system will acknowledge and concerns raised by certain interest groups which are ill-founded and which are merely used to influence the public and thus the political debate and decisions. Existing misconceptions about the purpose of the patent system in general also need to be addressed. This includes information about the economic impact of patents and the significance of patents for economical development of countries.

Concerns about trivial patents can be avoided by a strict application of the requirements for patentability but do not justify the limitation of patentable subject matter. Harmonization will play a decisive role in this context as well on the level of substantive patent law as on the procedural level among the patent offices.

The project Q178 will continue for the time being as a Special Committee. The next steps will depend mainly on the outcome of the parallel survey among the addressees outside the Association. However, the results achieved from the Group reports will serve as a good additional source of information and arguments for the work of other Committees, such as Q132 and Q170.