

Standing Committee on the Law of Patents

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PATENTS AND TRANSFER OF TECHNOLOGY: FURTHER PRACTICAL EXAMPLES AND EXPERIENCES

Document prepared by the Secretariat

INTRODUCTION

1. At its twentieth session held from January 27 to 31, 2014 in Geneva, the Standing Committee on the Law of Patents (SCP) agreed that the Secretariat would collect further practical examples and experiences on patent-related incentives and impediments to transfer of technology from members and observers of the SCP, in particular, from least developed countries, taking into account the dimension of absorptive capacity in technology transfer (see paragraph 20.2(5)(i) of document SCP/20/12).
2. Pursuant to the above decision, the Secretariat invited, through Notes C.8342, 8343 and 8344, members and observers of the SCP to submit their practical examples and experiences on the above. The following Member States, an intergovernmental organization and a non-governmental organization provided further information on transfer of technology: Bolivia, Chile, China, Costa Rica, Georgia, Germany, Hungary, Lithuania, Serbia, Slovakia, Spain, United Kingdom, United States of America, Eurasian Patent Office (EAPO) and Third World Network (TWN).
3. Since the submissions in their entirety are available on the SCP electronic forum¹, this document summarizes the information received from the above members and observers of the SCP. Least developed countries are particularly invited to share their practical examples and experiences at the twenty-first session of the SCP, as none submitted information regarding their examples and experiences.

¹ http://www.wipo.int/scp/en/meetings/session_21/comments_received.html.

4. The first part of the document addresses incentives to transfer of technology and the second part pertains to impediments to transfer of technology. However, as the submission by Costa Rica (see paragraph 27) suggested, they may be inherently related, since certain elements of the patent system that have obstructed technology transfer may become, after proper review and improvement, elements that have positive impacts on the transfer of technology.

PATENT-RELATED INCENTIVES TO TRANSFER OF TECHNOLOGY

General Mechanism of the Patent System and Incentives to Transfer of Technology

5. The submission by Germany explained how patent law promotes transfer of technology despite the exclusive effect of patent rights. A concrete legal position assigned to a patentee allows a regulated knowledge transfer. A patentee does not have to fear that a potential contracting partner would use the patented technological knowledge either during licensing negotiations prior to the conclusion of the contract or even if no contract is eventually concluded. The patent system therefore stimulates contract negotiations. The patent system also facilitates the concrete exploitation of patented inventions by another person through allowing the patentee to grant others the rights to use an invention. Modern technologies are converted into marketable goods and transferable objects in legal transactions by the patent system.

6. Furthermore, the possibility to commercially exploit products by granting licenses constitutes an incentive for the development of new technologies, particularly for those that have no intention or are not able to market their inventions themselves. In such cases, the transfer of technology is the intended aim of research from the beginning. The possibility to license or assign patents also provides an incentive to a patentee, which markets its product in a certain region, to transfer the technology to countries in which it has no intention to market the invention itself.

7. Only an adequately reliable and calculable commercial profit will initially prompt an inventor to bear high development costs. This profit can only be ensured if the transfer of technological knowledge, too, is regulated in an attractive and reliable form in the patent system.

Practical Examples and Experiences

Transfer of Technology from Research to Business

8. The Center for Technology Transfer in the University of Belgrade, Serbia, has secured invention disclosures from researchers, filed patent applications, negotiated licenses, created spin-off companies and managed business incubation and science park programs. It has also worked on matchmaking between the University and industry through organizing events and establishing databases.

9. The organization of technology transfer-related initiatives in Hungary has mainly taken a bottom-up approach. The Forum for the Technology Transfer in the Higher Education is a loose alliance of Technology Transfer Offices (TTOs) in Hungary. It has shared best practices and adopted recommendations addressed to non-members or the government.

10. Recognizing the importance of providing support to the transfer of knowledge and technology between universities and business, the United Kingdom Intellectual Property Office (UKIPO) has carried out a number of activities. For example, the Lambert Toolkit² was

² <http://www.ipo.gov.uk/whyuse/research/lambert.htm>.

launched in 2005 to help collaborating parties to understand and deal with issues relating to the ownership and exploitation of IP rights generated in collaboration between academia and business. The UKIPO has worked to modernize the Toolkit. Further, in 2011, the UKIPO published an updated version of the Guide to Intellectual Asset Management.³ The Guide aims to help senior managers in universities set strategies to optimize the benefits from the intellectual property created by their staff and students. It assists in the generation of a strategic blend of approaches to IP specific to each individual institution's strength and mission. In addition, the UKIPO developed, together with partner organizations, tools that assist cross-border collaboration between academia and business, such as the UK-Korea IP Toolkit⁴, Indo-UK Research Collaboration Toolkit⁵ and UK-China Technology Transfer – IP Commercialization Best Practice. The UKIPO has also held a "Fast Forward" competition which encourages universities to work with businesses and local communities to develop innovative knowledge transfer practices that set best practice for the management of IP in collaborative relationships.⁶ The competition has funded various projects, including Easy Access IP model developed by the University of Glasgow.

11. In Spain, the best known examples of patents as incentive to technology transfer are cases where research outcomes in universities or public research centers institutions were protected by patents, based on which a company was created ("spin-off").

12. The Agency for Science, Innovation and Technology (MITA) of Lithuania has implemented several technology transfer projects. For example, "Technostart" encourages the formation of start-ups by diminishing their initial costs and helping them to penetrate local and foreign markets. Another project "Inoveks" promotes the foundation and development of technology-based enterprises by helping students, doctoral candidates and young researchers to generate and crystalize business ideas and create prototypes of products. Further, in order to promote technology transfer from research institutions to business, MITA launched an initiative that provides funding for the establishment of spin-off companies.

Creating opportunities for Knowledge Sharing and Supporting Business

13. A number of examples and tools that facilitate matchmaking between technology suppliers and users were found in the submissions of China, Germany, Georgia, Lithuania and Slovakia. Section 23 of the German Patent Act provides for an option for applicants to make a binding offer to grant a license on reasonable conditions to anyone ("declaration of willingness to license"). If such a declaration is made, the annual fees will be reduced by half. Patent owners may also make a declaration showing their interest in licensing the invention, which can be withdrawn any time and has no effect on the annual fee ("declaration of being interested in licensing"). Similarly, the Industrial Property Office of the Slovak Republic has published a list of patent license offers on its website.

14. Coordinated by the Lithuanian Innovation Center, the Enterprise Europe Network (EEN) has assisted Lithuanian patent owners in finding partners for adaptation and implementation of their inventions. The Center has also carried out other projects focused on training of technology transfer specialists and building their network. In Georgia, it was found that even though business is in need of innovation and new solutions to resolve problems, the lack of understanding on the importance of local R&D persisted. There was no trust in local knowledge, local institutions and their capacity, and no communications between business and academia. Therefore, the Technology Transfer Center of Georgia (TTCG) started a matchmaking exercise between businesses and researchers in which it drafts business plans and organizes meetings

³ <http://www.ipo.gov.uk/ipasset-management.pdf>.

⁴ <http://www.ipo.gov.uk/research-euroip.htm>.

⁵ <http://www.ipo.gov.uk/government/publications/intellectual-property-toolkit>.

⁶ <http://www.ipo.gov.uk/whyuse/research/fastforward.htm#>.

with the business sector. The State Intellectual Property Office (SIPO) of China has carried out the Patent Exhibition and Trading Platform programs to serve the transfer and commercialization of technology. 41 Patented Technology Exhibition and Trading Centers have provided permanent exhibition and trade sites to suppliers and users of patented technology, especially to individual inventors and small and medium-sized enterprises (SMEs). Further, more than a dozen technology fairs are held annually across China to promote dissemination, protection and transfer of IPRs as well as to provide a service platform for the transfer of patented technology.

15. Some Member States have provided financial support to local inventors for obtaining patents. The Ministry of Economy of Lithuania has provided financial support for business and research organizations to obtain patents and industrial designs at the European and international levels. Likewise, the Innovation and Technology Commission with Hong Kong Productivity Council has administered a local funding scheme, which aims at assisting local companies and individuals with applying for patents and capitalizing their intellectual work through patent registration.

16. The National Innovation Office of Hungary has issued calls for tenders for technology incubators in order to provide systematic mentoring to the selected start-ups so that they would become suitable to enter the international markets and attract venture capital. In order to assist SMEs, the Industrial Property Office of the Slovak Republic has performed IP pre-diagnostics.

17. The government of Argentina has provided tax incentives in the form of reductions in income tax rate for international transactions carried out with a view to assigning or licensing industrial property rights.

Using Patent Information to Respond to Local Needs

18. The TTCG, as the Innovation and Technology Transfer Department of the Georgian patent office, reviewed the national patent database, and reclassified the data according to various parameters (e.g., a patent status, the nature of technology etc.). Abstracts have been translated in English, and uploaded on the website and Facebook for promotion purposes.

19. The SIPO launched the patent navigation pilot project in April 2013, which is based on the utilization of patent information resources and patent analysis. It aims at fostering an industry patent market system and leading and supporting the technological development of industries.

Others

20. The National Institute of Industrial Property (INAPI) of Chile has used a tool, “*INAPI Proyecta*”⁷, which reports success stories regarding technology transfer and patents.

21. The EAPO stated in its submission that licensing contracts with respect to Eurasian patents shall be registered in accordance with the laws of the relevant Contracting States. Thereafter, such information is to be recorded in the Register of Eurasian Patents and published in the Gazette of the EAPO.

22. The submission by the United States of America provided updated information regarding the Patents for Humanity Program⁸ carried out by the United States Patent and Trademark Office (USPTO). It will be continued as an annual event. Further, the submission referred to

⁷ <http://www.inapiprojecta.cl/609/w3-propertyvalue-2473.html>.

⁸ <http://www.uspto.gov/patentsforhumanity>.

the Report on the Implementation of Article 66.2 of the TRIPS Agreement, an annual report to the World Trade Organization (WTO), on incentives to technology transfer.⁹

PATENT-RELATED IMPEDIMENTS TO TRANSFER OF TECHNOLOGY

General Mechanisms of the Patent System and Impediments to Transfer of Technology

23. The TWN provided information on general literature, which addressed patent-related impediments to technology transfer, among others. Kim (2002)¹⁰ showed that IPR protection would hinder, rather than facilitate, technology transfer to potential recipients in the early stage of industrialization. Only after countries have accumulated sufficient capabilities with technology infrastructure to undertake creative imitation in the later stage, IPRs become an important element in technology transfer.

24. Kumer (2001)¹¹ analyzed the determinants of location of overseas R&D activities of US and Japanese multinational firms. Large domestic market, the abundance of low cost R&D manpower, and the scale of national technological efforts favor the location of overseas R&D in a country. Lack of adequate patent protection or restrictive trade regime does not affect the attractiveness of a country otherwise well-suited for R&D activity.

25. Nicolson (2002)¹² noted that open-economy endogenous growth model underpinned by IP protection suggest a dynamic shift towards further concentration of R&D in developed countries. While production of goods developed as an outcome of R&D activities in developed countries may shift to developing countries through the actions of multinationals, empirical evidence indicates that such technology transfer would not likely lead to benefits such as productivity growth in the host country.

26. Glass¹³ found that IP protection could succeed in attracting foreign direct investment (FDI) by limiting the degree that host firms may legally make use of technology spillovers. However, the FDI occurs in industries that generate the smallest benefits for the host country: industries with smaller technology gaps, smaller spillovers through FDI relative to exports, smaller absorption, fewer host rivals and larger cost reduction for multinationals.

Practical Examples and Experiences

27. The Costa Rican Patent Office shared the following comments it received from patent system users with regard to patent-related incentives and impediments to transfer of technology:

- Article 4 of the Law on Patents, which provides that an employee inventor shall share 50% of the right to a patent with his employer, discourages companies from investing in innovation in Costa Rica, as the Law forces them to treat employees as partners;

⁹ The most recent report is IP/C/W/594/Add.6.

¹⁰ Kim, L., "Technology Transfer and Intellectual Property Rights: Lessons from Korea's Experience", UNCTAD/ICTSD Working Paper (Geneva: UNCTAD/ICTSD), 2002.

¹¹ Kumar, N., "Determinants of Location of Overseas R&D Activity of Multinational Enterprises: The Case of US and Japanese Corporations", *Research Policy*, 30, pp. 159-174 (2001).

¹² Michael W. Nicholson, Federal Trade Commission, Intellectual Property Rights and International Technology Diffusion, Paper prepared for Responding to "Responding to Globalization" conference at Boulder, CO, 2002.

¹³ Amy Jocelyn Glass, Intellectual Property Policy and International Technology Diffusion, Department of Economics, Texas A&M University, College Station.

- Certain universities apply a rule whereby IP belongs to the university if it is the university that drafts the patent. Such rule is excessive and dissuades innovators from working with universities;
- As regards the SME Support Program (PROPYME) funds, an hourly rate is charged in the case of IP, despite the existence of a decree on tariffs that sets out minimum amounts for charges;
- Most of the existing funds are not designed to finance IP processes. Restrictions were introduced in this regard this year under PROPYME;
- The Patent Office must clearly inform users that they cannot draft patents on their own and that applicants must seek out a patent agent with the relevant training. Many inventions are lost in this way. There are no recognized agents and such a requirement cannot therefore be made. Recently, the parties concerned were invited to add themselves to a database of patent agents and provide the Patent Office with their contact details, so that such information could be made available to users on the National Registry website;
- Many national inventions consist of methods of business and games, which, unfortunately, are excluded from patentability in Costa Rica. Work should therefore be carried out to look into the possibility of introducing legislative amendments in that regard;
- The national patent system does not provide for provisional patents.

28. The submission by the TWN also contained selected cases and experiences involving patent-related impediments to transfer of technology in the area of environmentally sound technologies, agriculture and biotechnology, pharmaceutical/medical technologies and other technologies.

29. Many examples of patent-related impediments submitted by the TWN relate to voluntary licenses. The Energy and Resources Institute (TERI) (2009)¹⁴ looked into transfer of climate change-related technology in five Asian countries, and cited the case of the Chinese Yantai Integrated Coal Gasification Combined Cycle (IGCC) demonstration power plants, in which Chinese companies failed to get technology from foreign companies “due to high cost and reluctances to transfer the key technologies on the part of patent holders”. After prolonged negotiations, the project was stopped. The study also referred to a case where a Malaysian company Solartif had managed to get access to foreign technology only on condition of buying machines from the technology holder. Similarly, a study prepared by the Korean Trade Promotion Agency¹⁵ presents, in particular, the experience of Korean producers with respect to ozone-depleting substances, which showed that high royalty rates and unfavorable conditions attached to licensing agreements.

30. Other examples found in the TWN submission are the following:

- Wei (2011)¹⁶ highlighted IP-related challenges faced by Chinese firms in the field of wind energy, which include the need to buy a core technology from foreign firms, higher

¹⁴ The Energy and Resources Institute (TERI) Project Report No. 2008RS09, Emerging Asia contribution on issues of technology for Copenhagen, New Delhi, 2009.

¹⁵ Korean Trade Promotion Agency, “The Republic Of Korea And The Montreal Protocol”, in Veena Jha and Ulrich Hoffmann (Eds.), Achieving Objectives of Multilateral Environmental Agreements: a Package of Trade Measures and Positive Measures. Elucidated by Results of Developing Country Case Studies, UNCTAD/ITCD/ TED/6, Geneva.

¹⁶ Zhuang, Wei, “Intellectual property rights and transfer of clean energy technologies”, Int. J. Public Law and Policy, Vol.1, No. 4, 2011.

royalty fees applicable to final products for exportation and difficulty in obtaining the most advanced technology and acquiring genuine technological capabilities.

- Watal (2001)¹⁷ reported a case of an Indian company seeking access to an ozone depleting substance. The patentee proposed that the Indian firm either allows the supplier to take majority ownership in a joint venture to be set up, or agrees to export restrictions on the substance produced in India.
- Hatchison (2006)¹⁸ reported that, according to firms and R&D institutions from the Republic of Korea, there were cases where the private firms and public institutions of industrialized countries had refused to license environmentally sound technologies (ESTs). It concluded that fear of competition led to refusal by certain patent holders to license technologies to firms in some developing countries. Barton (2007)¹⁹ also found that in certain climate change-related technologies, existing industrial leaders were hesitant to share their technology for fear of creating competition.
- Ockwell (2008)²⁰ looked at the main barriers that India faced in the transfer of Light Emitting Diode (LED) technology, and concluded that as each process involved in manufacturing LED was patented, the cost of investing in both chip manufacturing and resolving IPR issues was substantially high compared to importing the chips.

31. In the field of agriculture and biotechnology, the submission by the TWN mentioned two papers: one relates to the US policy in this area and another concerns seed patents. With respect to pharmaceutical and medical technologies, the submission referred to the decision of the Italian Competition Authority, dated March 21, 2007, that the Merck Group would be obliged to grant free licenses to allow the manufacture and sale of the active ingredient Finasteride in Italy. The case was brought to the Authority following Merck's refusal to give certain companies licenses to produce ingredients of its medicines so that they could sell them in countries in which no relevant patent existed. The submission refers to two other cases where the Italian Competition Authority found that a patentee was abusing its dominant position by refusing to grant to third parties a license to produce the patented active ingredient to be exported for the manufacture of generic pharmaceuticals in the EU member states in which the product was not covered by patent.

32. The TWN submission also provided some examples relating to government use and compulsory licenses as measures taken by countries to address the issue of the abuse of the dominant position. It indicated, among others, the cases in Thailand, i.e., a five-year governmental use authorization issued in 2006 for the importation and manufacturing of Efavirenz used for HIV/AIDS treatment, compulsory licenses on patents for another AIDS medicine, one heart disease medicine and four cancer medicines, and the Efavirenz compulsory license case in Brazil. According to the presentation by an official from the Brazilian Ministry of Health²¹, due to lack of further technical information, Farmanguinhos (a pharmaceutical

¹⁷ Jayashree Watal, "The issue of technology transfer in the context of the Montreal Protocol: case study of India", in Veena Jha and Ulrich Hoffmann (Eds.), *Achieving Objectives of Multilateral Environmental Agreements: a Package of Trade Measures and Positive Measures. Elucidated by Results of Developing Country Case Studies*, 2001, UNCTAD/ITCD/ TED/6, Geneva.

¹⁸ Hutchison, Cameron J., *Does TRIPS Facilitate or Impede Climate Change Technology Transfer into Developing Countries?*, University of Ottawa Law & Technology Journal, Vol. 3, pp. 517-537, 2006.

¹⁹ Barton, John H., "Intellectual Property and Access to Clean Energy Technologies in Developing Countries: An Analysis of Solar Photovoltaic, Biofuels and Wind Technologies". *ICTSD Trade and Sustainable Energy Series Issue Paper No. 2.*, 2007, Geneva, Switzerland: International Centre for Trade and Sustainable Development.

²⁰ Ockwell, David, *UK-India Collaboration to Overcome Barriers to the Transfer of Low Carbon Energy Technology: Phase 2: Intellectual property rights and low carbon technology transfer to developing countries – a review of the evidence to date*, 2008, Sussex Energy Group, Freeman Centre, University of Sussex, Brighton; TERI India Habitat Centre; Institute of Development Studies, University of Sussex, UK.

²¹ <http://www.accesstopharmaceuticals.org/case-studies-in-global-health/efavirenz-brazil/>.

manufacturer that is part of the Oswaldo Cruz Foundation) used the patent specification for the reproduction process. The disclosure of the patented invention was found to be insufficient and did not enable it to replicate a generic form of the medicine. Farmanguinhos had to perform its own research activities in order to reverse engineer the product and to import small quantities of Efavirenz from India.

33. The submission by the TWN stated that while voluntary licenses were the preferred method by originator pharmaceutical companies to expand operations with generic manufacturers and to sell medicines, the lack of transparency with regard to the contents of voluntary licenses and the restrictive provisions included in such licenses hinder access to and use of the patented technologies. A worrying trend in voluntary licenses in the pharmaceutical sector is that they generally tend to be for the benefit of least developed countries and sub-Saharan African countries and exclude middle income countries, as seen in voluntary licenses negotiated under the Medicines Patent Pool.

34. Another case described in the submission by the TWN was the Ericsson – Micromax case brought before the Competition Commission of India. A handset maker, Micromax, had complained that Ericsson had been demanding an unfair, discriminatory and exorbitant royalty for its standard essential patents (SEPs), which should have been licensed on the FRAND (fair, reasonable and non-discriminatory) terms. In November 2013, the CCI ordered a thorough investigation of the case.

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