博士論文

Technology Transfer through Licensing for Developing Countries

（途上国のための技術移転と技術ライセンシング）

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Abstract

The importance of technology transfer for sustainable development has been emphasized in numerous international fora. According to Article 7 of the TRIPS Agreement, IP protection should contribute to the transfer and dissemination of technology, among other policy goals. The current technology gap between the world's nations and regions prompts us to think about what we should do in order to support the dissemination of technologies that can optimize the industrial, economic, societal and human development of developing countries and improve the lives of the less privileged. This is not only for the benefit of developing countries, but also for developed countries: In a globalized world, societal issues emerge on a global scale, and environmental issues have always been of a global nature.

This research focuses on technology licensing as a means of technology transfer; and a licensing contract is a tool to craft a licensor-licensee relationship that both reflects the realities of the parties and serves the best interest of the parties. Licensing deals necessarily create win-win situations – otherwise the parties would not enter into such contractual relationships, absent coercion. This seemingly obvious fact, when the discussion is between entities in developed countries, gets suddenly "forgotten" when licensing deals involve developing countries. Discussions all too often become binary, being about either licensor dominance or the pro bono donation of technology. These are extremely important aspects of the discussions to which this dissertation wishes to contribute; however, the core, the author believes, of the issue of technology licensing is how best to create win-win relationships.

This research first explains what a license is – the definition and classification are elaborated in Chapter 2. The chapter also provides an analysis of the suitability of the various forms of licensing agreements for technology licensing, for technology dissemination and for industrial development.

Chapter 3 explores the relationship between the licensor and the licensee, occasionally involving third parties, created by licensing. It does so by elaborating the individual clauses common in licensing agreements and analyzing the likely background when introducing particular clauses and the likely outcome of including such clauses. Although the analysis is often applicable to parties to licensing agreements in general,

special attention is paid to the developmental needs of licensees in developing countries.

Based on the descriptions and analysis provided in the previous two chapters, Chapter 4 lists, describes and compares ten creative licensing schemes aimed at dispersing technology that have emerged since the 1990s. Some of the schemes were unsuccessful in terms of the dissemination of technology due to limitations originating in the design of the licensing scheme or else in external factors. However, other schemes adequately captured the needs of both the licensor and licensees and were successful.

Several trends were revealed in the analyses of the aforementioned ten cases. Firstly, package licensing of patents and trade secrets is becoming increasingly common as parties and facilitators of international technology licensing schemes become aware of the limitations of pure patent licenses and are therefore keener to reflect the realities of developing countries. As a further step, an element of open innovation, involving developing countries as research partners, is added into the newer platform schemes.

Secondly, creative licensing schemes aimed at the dispersion of technology in developing countries are becoming more diversified in terms of fields of technology. In relation to the second trend, reflecting the change in the subject matter of licenses from patents to know-how and the diversification of the fields of technology, licensors are requesting increased commitment from the licensees, and vice versa. Royalty-free licenses are also seen, but other kinds of licenses may require relatively small payments. For licensees without financial means, some platforms connect licensees with funding institutions.

Lastly, as one can see from the utilization of the intellectual property system, the overall attitude towards IP has seen a gradual shift in order to enhance price differentiation. Price differentiation between developed country markets, developing country markets and least-developed country markets has become more common. This enables licensees to profit from sales in developed countries while providing affordable licenses for developing countries. Patents were once seen more as an obstacle to technology transfer, so the focus of efforts was on removing obstacles created (allegedly) by patents. In newer schemes, IP has been used to divide the global market into price-zones and to create a symbiotic relationship between business for profits and pro bono activities. This paradigm shift shows us the possibility of IP playing a much more positive role in accelerating

technology transfer.

Despite recent positive trends, some issues remain unresolved. First of all, package licenses consisting of patents and know-how are not easy for the provider, due to the risk of trade secret leakage and the high cost. Secondly, the national legislations in the jurisdictions of some developing countries are highly restrictive, as elaborated in Chapter 5, and do not allow the flexibility necessary to arrange a licensing scheme - not even when the intention of the licensor is to disseminate technology to improve the well-being of the citizens of the country. Lastly, limitations arise from the very fact that technology transfer is a means of transferring existing technology: much of the technology needed to solve the problems of the South does not exist yet. For that reason, a shift towards more joint research is desirable.

In order to describe the regulations that shape licensors' and licensees' actions, Chapter 5 looks into international and national technology licensing regulations. The most important treaty regarding technology transfer is the TRIPS Agreement, which grants discretion to its member states in setting their own technology licensing regulations. National governments have utilized this discretion and have been enforcing their own regulations. This research has focused on Japan, the European Union, China and Ghana, and has investigated their licensing regulations. Licensing regulations in developed countries are often competition law-based, whereas those of developing countries are created as individual regulations that deal exclusively with international technology transfer contracts and are independent of competition law. Some rules are commonly found in both developed and developing countries but there are stricter rules, in general, in developing countries.

Japan and China have experienced a similar history of technology transfer regulation, with the rules being loosened up as their technological and industrial capabilities improve and a gradual shift to competition-based regulation. Ghana has yet to loosen up its technology licensing regulations which are stricter than in the other target countries of this research.

Developing countries have good reason to control international technology transfer, as the companies involved as licensees often have little bargaining power. However, merely restricting licensing is not a strategy that could lead to the development

of a nation, as restrictions would scare away potential technology providers. Foreign technology holders could well be a “best friend” of national development, as long as they do not abuse their power. This research has revealed that, in some cases, even creative licensing schemes which are intended to disseminate technology in developing countries often contain illegal clauses that are in breach of current regulations in developing countries: overly strict clauses can impede technology transfer. More flexibility based on a case-by-case analyses should be allowed for licenses that benefit the dissemination of technology.

Apart from voluntary licensing regulations, some countries provide a license of right system, which enables patent holders to register their patents at the patent office (or other administrative institutions) when the patent holder wishes to non-discriminatorily license their technology out to third parties. In order to incentivize such registration, some jurisdictions grant a discount of patent maintenance fees. This is an effective way of enhancing the dissemination of technology by disclosing the will of the patent holder to grant a license, and minimizes the costs for both parties when disputes arise, as disputes are then subject to swift and more affordable administrative trials.

This research has shown that a compulsory licensing system can serve as an emergency measure and as a mechanism to push patent holders to grant voluntary licenses. Some developing countries, though, are also cognizant of the limited role that compulsory licensing could play in their development and are reserved in granting them.

Exhaustion principles also influence private international technology transfer. In order to increase technology transfer to developing countries, an environment that allows price differentiation and prevents parallel importation of licensed products is necessary. National exhaustion works in favor of this. This research has revealed that there are some discrepancies between foreign national regulations and the modified national exhaustion rules that the Japanese Supreme Court decision adopted, which do not adequately protect Japanese patent holders when they express interest in not exhausting their rights upon sales abroad. In order to avoid such unexpected “unprotection”, the determination of exhaustion rules should, therefore, always take into account foreign legislations.

As a conclusion, this paper proposes best practices for licensing agreements in the private sector, and legislations and policies that support the private actors. In the

private realm, this research has uncovered some best practices, such as package technology transfer, increased commitment of parties, and utilization of IP as a tool to differentiate prices and control the distribution of goods for humanitarian purposes. It is the role of national and international legislations to support and encourage such practices, so that the IP system can rightly serve one of its functions, namely that of encouraging the diffusion of technology.

Current international law, which allows the discretion of national government in setting their own licensing regulations, serves individual countries' needs in an effective manner. Developing countries are using this flexibility, but various revisions could be made in order to strike the right balance between encouraging technology transfer and prevent the exploitation of local companies by foreign companies. Administrative institutions in charge of examining licensing contracts could also be allowed some discretion to allow flexible application of the law when the contract is beneficial for the development of the country, granted that there are institutions capable of doing so. Additional measures to encourage technology licensing, such as the introduction of a license of right system, are also advisable. Although compulsory licensing is not the most effective method of technology transfer, having the system available for emergency purposes and to push recalcitrant patent holders to conclude voluntary licensing agreements is necessary. When setting exhaustion principles, the need for and the benefits of price differentiation, and the implications for technology transfer, should all be taken into account.

Joint efforts by private entities, governments and international organizations should therefore be made in order to increase the supply and flow of technology to, within and between developing countries. This needs to be done by legislations, regulations and incentive mechanisms as well as by coordinated policy initiatives at both national and international levels.

Technology transfer through licensing for developing countries

Chapter 1. Introduction

1.1 The background and purpose of the study

It has been 43 years since Donella H Meadows et al., in "The Limits to Growth" pointed out the likelihood that there are limits to the development of mankind stemming from limitations in food supply, non-renewable resources, pollution absorption, and the exponential nature of human population growth and pollution[1]. Although technology was treated as an important partial solution to the problems stated in the above report, the limitations[2], and the side effects[3] triggered by technological advancement, were emphasized, in fear that technological optimism would prevail over their warnings to mankind.

It seems clear that technology is not the solution to all problems, and possibly not even a complete solution to a single one of them. Societal issues are complex and the methods of addressing the problem often need to be multidimensional. However, technological developments and the diffusion thereof are still important factors if we are to push the limits of growth and provide more space for growth. Even in the skeptical "The Limits to Growth" it is stated that "[o]ver the past three hundred years, mankind has compiled an impressive record of pushing back the apparent limits to population and economic growth by a series of spectacular technological advances," and "many of the technological developments … will be absolutely vital to the future of human

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[1] DONELLA H MEADOWS ET AL., THE LIMITS TO GROWTH: A REPORT FOR THE CLUB OF ROME'S PROJECT ON THE PREDICAMENT OF MANKIND (Universe Books 1974).

[2] *See supra* note 1 149

[3] *See supra* note 1 146-, *see also*, THE JAPANESE EXPERIENCE IN TECHNOLOGY: FROM TRANSFER TO SELF-RELIANCE (Takeshi Hayashi ed., United Nations University 1990). Part 2 4. also points out this problem, but suggests that despite the limitations one must rely on the solutions. "…minor solutions, limited as they are, will surely generate new problems. We know that we may need to be satisfied with minor solutions to problems that can be anticipated when a question is raised, and we may even need to regard such solutions as final."

society if they are combined with deliberate checks on growth"[4].

Examples in this field are ample - the invention of the automobile solved many of the urban problems caused by horse carriages, such as noise, high accident rates, traffic jams, manure pollution of cities, and even greenhouse gas emissions.[5] Nowadays automobiles are considered to be amongst the main polluters of the world so solutions such as solar cars and hybrid cars are being invented (which may in turn result in other environmental issues).

Efforts to learn how to live within the limits to growth may also be important, especially for the world's wealthiest nations, but for most countries in the world, growth is not only something whereby people can enjoy more comfort and luxury – it is an urgent need in order to ensure people's survival. The endeavor of trying to control one side effect of technology with a new technology, only to create yet another harmful side effect, is likely to be a seemingly endless yet necessary process, not only in order to ensure a certain minimum standard of life for all of us, but to ensure the very survival of mankind.

The importance of technology transfer has been stated on many occasions, one important example being Article 7 of the TRIPS Agreement.[6] Here, the "transfer and dissemination of technology" is listed as one of the aims of IP protection and enforcement. Reflecting this significance, international and national efforts have been made to overcome the lack of technology in developing countries.

However, we have still to fully address the issue. There are legislative obstacles as well as other obstacles to technology transfer, including underdeveloped

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[4] *See supra* note 1 154

[5] STEVEN D. LEVITT AND STEPHEN J. DUBNER, FREAKONOMICS: A ROGUE ECONOMIST EXPLORES THE HIDDEN SIDE OF EVERYTHING (Penguin Books 2006). 8-12

[6] Agreement on Trade-Related Aspects of Intellectual Property Rights (Annex 1C of the Marrakesh Agreement Establishing the World Trade Organization, 1995) art. 7, Apr. 15, 1994 (hereinafter "TRIPS Agreement" or "TRIPS") "The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations."

infrastructure, insufficient funding and other resources, a lack of technological and legal ability among potential licensees, and parties' unwillingness to license.

Among all the obstacles, one particular difficulty policy makers encounter is that a majority of the technology providers are private for-profit entities which can decide whether they would like to provide the technology to a third party at their own discretion. While private enterprises may share a concern for the technology gap and are in recent years increasingly focused on corporate social responsibility, they remain for-profit entities. Their primary responsibility is towards shareholders and they have employees who rely on the company for their bread and butter. They would, therefore, most likely not go so far as to devote a large part of their resources for developing countries without generating income, or to prioritize contribution to the global society rather than their income. Consequently, a symbiotic relationship between their income-generating business and a contribution to the diffusion of technology is necessary for the active participation of private entities in the endeavor to transfer technology.

A key to creating this symbiotic relationship is IP protection. IP protection is crucial in order for a technology transfer project to be profitable. Even if an enterprise does not aim to profit directly from the project, adequate measures must be taken in order to contain the transferred technology to the designated recipient and relevant products in the designated jurisdiction, as otherwise the transfer may damage the core business and the main market. Also, for the recipient of the technology, adequate IP protection for the transferred technology is necessary in order to secure a market in order to recoup the investment in obtaining, learning and modifying the technology, and it is desirable to make the receiving country a favorable venue for foreign investment.

Reflecting on these societal realities, this research aims at addressing the issue of a lack of technology transfer to the South from the perspective of intellectual property law and technology transfer regulations which could be an obstacle or a supporting force, depending on how well they are formulated.

This dissertation examines national and international regulatory problems that hinder technology transfer to developing countries based on private practices. As a conclusion, better legislations, policies and best practices are proposed. In short, this dissertation attempts to reveal how law and policy can promote technology transfer

from more developed countries to developing countries, especially through technology licensing.

1.2 Research question

In order to answer the question how legislations, regulations and policies both in the national and international level should be formulated in order to enhance technology transfer, this dissertation first looks into what a licensing agreement is (Chapter 2), how licensing agreements could be classified (Chapter 2), what kind of legal relationships are established through licensing contracts (Chapter 3), what licensing terms reflect and what they should reflect (Chapter 3), what implications the terms may have on licensing between developed and developing country enterprises (Chapter 3), and what the leading examples of creative licensing schemes are (Chapter 4) and what the general trend of licensing schemes are (Chapter 4).

After a thorough examination of licensing practices in chapters 2 to 4, this dissertation examines what current international and national regulations concerning licensing exist and analyses the effects on the practice of private parties (Chapter 5). Finally, legislative and policy suggestions on licensing-related laws and policies as a tool to facilitate and enhance technology transfer is made, and best practices of private enterprises are proposed, based on the findings of the research (Chapter 6).

1.3 The scope of the study and methodology

To answer the aforementioned research questions, this dissertation first focuses on licensing practices for patents and trade secrets, as well as cases of creative technology licensing schemes in a few key areas of technology. Regarding licensing practices, classifications of different licensing schemes and a detailed analysis of common clauses found in technology licensing agreements and the implications thereof are provided.

The above analyses are followed by ten case studies of creative licensing schemes. Five of the cases aim at enhancing the dispersion of technology in general, while the others specifically target developing countries. As to the areas of technology covered by the example cases, this study focuses on telecommunications technology, biotechnology, pharmaceuticals, and “green” technology. The reasons for the choices of

industries are as follows.

Firstly, the differences between practices in each area were considered. In the telecommunications field, private licensing practice has been extensively developed, and the value of the patent as the subject matter of licenses is in general much lower than in biotechnology and pharmaceuticals. It is therefore useful to study the differences, and understand why the licensing practices in the field of telecommunications have not been adequately applied to pharmaceuticals or to biotechnology in the past, and what kind of conditions are necessary for the application of creative licensing schemes to other fields.

Secondly, the importance of the technological area for development was considered. Biotech and pharmaceutical IP have always been the focus of heated debate on access to technology, and a lot of effort has been made to improve access to these technologies that make a crucial difference in moments of the life and death of a human being.

Telecommunications technology has greatly altered the developmental process in developing countries, and the potential to achieve a higher standard of living in developing countries at less cost is huge. For example, developing countries are jumping the stage of landline phones and going directly to mobile phones with access to the Internet. The Internet nowadays is not only a tool for convenience, but is also serving as a substitute for physical branches of a bank or as a tool for higher quality education

Green technology refers to technologies that "protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes[7]". This is a broad concept: green technologies can be telecommunications technologies, automobile technologies, waste management technologies, or biological technologies, as long as the process or the end product has the effect of increasing energy efficiency, reducing pollution, or any other positive effect on the environment. This is the area where a lot of scholars have been

[7] United Nations Conference on Environment & Development, Rio Declaration on Environment and Development (Agenda 21) 34.1, Jun. 3-14 1992

discussing possible ways of facilitating technology transfer, especially because the developed world often demands that developing countries develop in an environmentally sound manner. The "greener" development of developing countries benefits not only developing countries themselves but also developed countries, as the negative externalities of the development of one country on the environment cannot be contained within its own territory.

The second half of this study focuses on licensing laws and relevant policies at national and international levels, and how they support or obstruct the private efforts of licensors and licensees. Licensing related regulations can be found in patent laws, intellectual property laws, and antimonopoly laws or can be a separate regulation.

On the national and regional levels, examples of policies are taken from Japan, Europe, China and Ghana. Japan has been selected because of its status as a former developing country that succeeded in becoming a member of the developed world. The EU was selected as a target region for comparison with other developed countries and regions.

The former two countries are examples of developing countries which have shown an increasing interest in strengthening IP protection in recent years. The reason for the choice of these countries is that they are diversified in terms of levels of economic and technological development.

Although China and Ghana both acknowledge themselves to be "developing countries", they are at very different stages of economic and technological development.

Concerning economic development, China is a nation with the second largest GDP in the world, despite its being a developing country. On the other hand, Ghana ranks 97th in terms of GDP. [8] The GDP per capita in China is more than five times

[8] The World Bank Group, *GDP (current US$)*, http://data.worldbank.org/indicator/NY.GDP.MKTP.CD. (last visited Jul. 28, 2016). The population of China is 1,371,220.00, whereas that of Ghana is 27,409.89. *See* The World Bank Group, *Population, total*, http://data.worldbank.org/indicator/SP.POP.TOTL. (last visited Jul. 28, 2016).

higher than that of Ghana. [9]

China and Ghana are also at different levels with regard to technological advancement. According to the Technology Achievement Index (TAI) (discussed in section 1.4.6 below), China ranks 54th and Ghana ranks 85th among 91 countries, being ranked at the middle and at the bottom of the scale. More recent data is available for the Global Innovation Index (also discussed in 1.4.6. below), and one can see that the two countries are located in the upper middle of the scale (25/128) and at the bottom (102/128).[10]

Reflecting the gap in economic and technological development, the level of sophistication of IP policies differs greatly between the two countries. China is increasingly becoming an "IP giant", being the third largest user of the Patent Cooperation Treaty system in 2014.[11] Ghana on the other hand is still struggling for lack of qualified patent examiners, and very few patents are filed there.

In selecting the target countries, consideration was given to political and economic stability, as technology-related IP law can function properly only in a reasonably peaceful nation with a modicum of technology related industry. Therefore, although IP and development in the least developed countries are an important issue, this study did not focus on the least developed countries.

In the international realm, after a failed attempt to create the draft International Code on the Transfer of Technology (hereinafter "ToT code"), not much has been achieved in the form of legislation, apart from the few licensing-related articles in the TRIPS Agreement that grants discretion to individual member states to set their own regulations. However, many licensing schemes has been created by United Nations organizations, and private enterprises have also done a great deal to bridge the

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[9] The World Bank Group, *GDP per capita (current US$)*, http://data.worldbank.org/indicator/NY.GDP.PCAP.CD. (last visited Jul. 28, 2016).

[10] CORNELL UNIVERSITY ET AL., THE GLOBAL INNOVATION INDEX 2016 WINNING WITH GLOBAL INNOVATION (Soumitra Dutta et al. eds., 2016).

[11] World Intellectual Property Organization, *US and China Drive international patent filing growth in record-setting year*, http://www.wipo.int/pressroom/en/articles/2014/article_0002.html. (last visited Dec. 29, 2016).

technology gap between developed and developing countries. These initiatives are included in the subject of this dissertation.

In order to answer the research questions stated in 1.2, this research relied on a review of the literature, including national legislations, regulations and treaties, as well as prior literature by scholars and practitioners in relevant fields. This research is also based on interviews with legislators, government policy makers, officers in international organizations and practitioners, conducted mainly in China, Ghana, Europe and the United States of America.

1.4 The novelty of the study

The novelty of this research lies firstly in its viewpoint that, through technology licensing to developing countries, the private parties involved should be able to create a win-win relationship. Although licensing between more or less "equal" partners is often perceived as a win-win solution to a business issue, technology transfer and licensing to developing countries, traditionally, were more likely to be viewed as a part of development aid or a part of corporate social responsibility. The problem of licensor dominance is also strengthened to an extent beyond that which is necessary in terms of antitrust regulations. This research maintains a different attitude. When one remembers the origins of the patent system in Venice, the emphasis then was placed on sharing rather than keeping inventions secret. Licensing is a means to realize such sharing. It is not inevitable that licensing technology to a developing country would necessarily lead to licensor dominance, nor that licensors would be unable to gain any profits therefrom. This research therefore attempted to provide a key to successful technology transfer that benefits development but can still be profitable overall for the licensor as well.

In evaluating the licensing regulations of target countries, especially those of developing countries, this research provided a framework for evaluation based on a comprehensive list of all the common clauses of technology transfer agreements seen in private practice. Prior research focused on individual countries or international agreements rather than a comparison thereof, and so did not provide any criteria for comparison.

Furthermore, in analyzing the cases of collective licensing and focusing on the clauses and the legal framework, this research has revealed a historical trend of evolution

of licensing agreements intended to aid development that was not previously recognized. This understanding of the trend should be useful when formulating new collective technology licensing platforms for developing countries that can also secure a fair profit on the part of the inventors.

Rigorous fieldwork was conducted in order to support these studies. The research in China and Ghana added new information to existing literature. In China, there were some lack of clarity in the local government interpretations of laws that were not explained in existing literature. The lack of clarity was remedied by interviewing local patent attorneys and government officials. Literature on Ghanaian patent law was scarce and often outdated. This research is one of the very few treatises that focuses on Ghanaian patent law and provides insight into how the law is actually applied. The information was obtained from national government officials and legislators.

1.5 Terminology

1.5.1 Technology

Technology is "scientific knowledge deliberately and purposefully used for production, distribution, consumption, and utilization of goods, services, and information"[12], accompanied by the "organizational capacity to convert the relevant productive inputs into the finished item or service", in other words expertise and non-technical know-how[13].

A broad range of knowledge could fall under the definition of the word technology - historically, the use of fire as a tool for cooking or heating, or making pots out of clay were the cutting edge of the technology of the time. Nowadays, we have far more complex technologies.

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[12] THE JAPANESE EXPERIENCE IN TECHNOLOGY: FROM TRANSFER TO SELF-RELIANCE (Takeshi Hayashi ed., United Nations University 1990).Part 1.3

[13] UNITED NATIONS CONFERENCE FOR TRADE AND DEVELOPMENT (UNCTAD), TRANSFER OF TECHNOLOGY (United Nations Conference for Trade and Development Internet Edition ed. 2001) 5-6. *Supra* note 12 mentions only scientific knowledge as a part of the definition, but places the management skills and information as a factor influencing the transfer. The UNCTAD report states the term "technology" includes non-technical knowledge.

Modern technology relies on and is influenced by five components (The five Ms) plus monetary aspects, which are controlled and integrated by information. [14]

a) Raw materials and resources (including energy): M1

b) Machines and equipment: M2

c) Manpower (engineers and skilled workers): M3

d) Management (technology management and management technology): M4

e) Markets for technology and its products: M5

The availability of the "M"s differs from one country (or region) to another; thus, the direction of advancements in technology varies depending on the geographical location of the developer. This is one of the important reasons why technology transfer to areas of the world without previous access to technology has a positive influence on the variety of technologies available in the world.

The development or adoption of technology are dependent on the local implementation conditions.[15] Some societies do not have the preconditions for the use of a certain technology. For example, when the city of Tokyo tried to introduce brick buildings, which were superior in terms of preventing large-scale fires, instead of the traditional wood and paper buildings, the plan was not accepted by the citizens because of the hot and humid climate and frequent earthquakes.[16] Tokyo now has numerous reinforced concrete-built buildings. The fact that the city was devastated by the Great Kanto Earthquake of 1923, which caused widespread fires, and by the bombings during the Second World War because paper-and-wood-built cities too easily caught fire, pushed the government to reconstruct the city to be more fire-resistant.[17]

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[14] *See supra* note 12

[15] *See supra* note 12

[16] *See supra* note 12 Part 2. 5

[17] The government initiated a "city fireproof movement" and encouraged the building of reinforced concrete-built houses instead of wooden ones. *See* SHIMPEI OTSUKA & MITSUO OHKAWA, *Sengo no Kōteki Jyūtaku Kyōkyū ni yoru Funenka Jyūtaku 1950nendai no Toshi Funenka Undō wo Haikei to Shite (戦後の公的住宅供給による不燃化住宅1950 年代の都市不燃化運動を背景として)*, *in* HEISEI 23NENDO NIHON DAIGAKU RIKŌ GAKUBU

This was made possible technologically by the dissemination of the use of air conditioning and related technologies, and better earthquake-resistance of housing and other buildings. The earlier introduction had failed because of premature local conditions, whereas the latter introduction succeeded due to the changed local conditions.

From this example, one can see that, unlike scientific knowledge, which is universal, the invention or adoption of technology is conditioned by "geographical, social, cultural, and historical factors". Through the intermediation of these factors, scientific knowledge becomes a technology.[18]

1.5.2 Intellectual property

Intellectual property rights are rights concerning creations of the mind.[19] These creations can be classified into two categories – industrial property rights and copyrights.[20] Industrial property rights are rights concerning inventions, trademarks, industrial designs and geographical locations. Copyrights traditionally cover literary and artistic works, but in the modern world also cover technological inventions in the form of copyrights for software.

This dissertation mainly focuses on intellectual property rights regarding technological inventions, such as patents (including utility models) and trade secrets. Patents are exclusive rights granted by the government, in return for the disclosure of the technical details of the invention.

The issue of patents and developing countries are discussed intensively in international fora. On the other hand, trade secrets are also a common form of intellectual property, especially in developing countries where patent related services are not readily accessible. The transfer of trade secrets plays a crucial role in the success of technology

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GAKUJYUTSU KŌENKAI RONBUN SHŪ (平成 23 年度　日本大学理工学部　学術講演会論文集) 619–620 (2011).

[18] *See supra* note 12

[19] WORLD INTELLECTUAL PROPERTY ORGANIZATION, WHAT IS INTELLECTUAL PROPERTY? http://www.wipo.int/edocs/pubdocs/en/intproperty/450/wipo_pub_450.pdf. 2

[20] *See supra* note 19

transfer to developing countries, however it usually gets less attention than patents.[21] This dissertation places equal importance on the two forms of IP.

1.5.3 Technology transfer

Technology transfer is an equivocal term. Although it may refer to the commercialization of inventions made in the academic sector, such as in universities or research institutes in some contexts, this dissertation takes a broader approach of including all processes "by which commercial technology is disseminated"[22].

Technology transfer takes the form of a transaction, which involves communication by the transferor to the transferee of the information necessary to enable the transferee to implement the technology[23], or permission granted by the transferor to the transferee, by licensing or assignment, to implement the technology.

In defining technology transfer, this dissertation adopts the definition of the draft International Code on the Transfer of Technology (ToT code)[24].

(a) The assignment, sale and licensing of all forms of industrial property, except for trade marks, service marks and trade names when they are not part of transfer of technology transactions;

(b) The provision of know-how and technical expertise in the form of feasibility studies, plans, diagrams, models, instructions, guides, formulae, basic or detailed engineering designs, specifications and equipment for training, services involving technical advisory and managerial personnel, and personnel training;

(c) The provision of technological knowledge necessary for the installation, operation and functioning of plant and equipment, and turnkey projects;

(d) The provision of technological knowledge necessary to acquire, install and use machinery, equipment, intermediate goods and/or raw materials which have been

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[21] James Pooley, *Trade secrets: The other IP right*, WORLD INTELLECTUAL PROPERTY ORGANIZATION, http://www.wipo.int/wipo_magazine/en/2013/03/article_0001.html. (last visited Jul. 29, 2016).

[22] *See supra* note 13 6

[23] *See supra* note 13 6

[24] Draft International Code of Conduct on the Transfer of Technology (1985 version) 1.2

acquired by purchase, lease or other means;

(e) The provision of technological contents of industrial and technical co-operation arrangements.

Note that the mere sale of goods that embodies the technology is not considered to be technology transfer under the ToT code, and it will not be in this dissertation, either. The draft ToT code does not include non-commercial technology transactions as a target[25], as the main issue the code was intended to resolve was the restrictive clauses in private for-profit technology transfer agreements, such as export prohibitions and grant-back clauses[26]. However, nowadays, 30 years after the code was drafted, the line between commercial and non-commercial technology transfer is blurred due to the emergence of international public-private partnership initiatives and (partially) pro bono activities undertaken by for-profit entities. A modern approach to technology transfer to a developing country often involves a combination of non-commercial aspects and commercial aspects. This dissertation therefore includes non-commercial transactions within the scope of the reported research.

1.5.4 Licensing

The term "licensing" generally refers to "the process of giving or getting permission to have, produce, or use something that another person or company has created or owns."[27] Similarly, technology licensing can be defined as a permission granted, or know-how provided by the owner of the intellectual property right (or a third party entitled to provide the permission), to another to use the IP in accordance with agreed terms and conditions, for a defined purpose, in a defined territory, and for an agreed period of time.[28] The definition of licensing in this paper is not limited to the act

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[25] *See supra* note 13 7

[26] Ton J. M. Zuijfwijk, *The UNCTAD Code of Conduct on the Transfer of Technology*, Vol.24 MCGILL LAW JOURNAL 563 (1978). 563

[27] Cambridge Dictionary, LICENSING (Cambridge University Press 2016) http://dictionary.cambridge.org/dictionary/english/licensing.

[28] Modified by the author based on PIERRON IVONNE, EXCHANGING VALUE - NEGOTIATING TECHNOLOGY LICENSING AGREEMENTS: A TRAINING MANUAL (World Intellectual Property

of providing permission, but includes the act of enabling others to implement the technology, because the latter has great importance with regard to technology transfer to developing countries. The concept of technology licensing is discussed further in Chapter 2

1.5.5 Developing countries

There are no generally accepted criteria for classifying a country according to its level of development. The United Nations Statistics Bureau provides a list of developed, developing and least developed countries[29], but the list does not include former USSR countries for example, and is far from complete. Nevertheless, for convenience, this paper adopts the definition in the aforementioned list.

Two of the target countries, Ghana and China are developing countries, but are not among the least developed countries according to the list. Although they are both placed in the same category, the GDPs per capita differs greatly– in 2015, the GDP per capita of China was 7,924.7 USD while that of Ghana was 1,381.4 USD. (That of Japan was 32,477.2.)[30] . The difference in GDPs is even larger – China, with its huge population, ranks 2nd in the world with a total of 10,866,444.00 million USD while Ghana, with a population of around one fiftieth of that of China, ranks 97th with a total of 37,864.37 million USD.[31]

Organization 2005) 14 The original states the definition as a "permission granted by the owner of the intellectual property right to another to use it on agreed terms and conditions, for a defined purpose, in a defined territory and for an agreed period of time."

[29]United Nations, *United Nations statistics division- standard country and area codes classifications (M49)*, http://unstats.un.org/unsd/methods/m49/m49regin.htm#developed. (last visited Jul. 28, 2016).

[30] The World Bank Group, *GDP per capita (current US$)*, http://data.worldbank.org/indicator/NY.GDP.PCAP.CD. (last visited Jul. 28, 2016).

[31] The World Bank Group, *GDP (current US$)*, http://data.worldbank.org/indicator/NY.GDP.MKTP.CD. (last visited Jul. 28, 2016).
The population of China is 1,371,220.00, whereas that of Ghana is 27,409.89. *See* The World Bank Group, *Population, total*, http://data.worldbank.org/indicator/SP.POP.TOTL. (last visited Jul. 28, 2016).

1.5.6 Development

The definition of the term "development", which is used frequently in many contexts, is highly controversial. Tatyana P Soubbotina and Katherine A Sheram discuss the term in detail in "Beyond Economic Growth".[32] They state that development is not merely about economic wealth but is also about the allocation of resources and the effect of the production and consumption on the environment[33]. In order to measure levels of development, it is therefore necessary to identify the aspect on which one wishes to focus.

The term "human development", which could be taken as an example of one measure of development, focuses on the improvement of the lives people lead. It emphasizes the improvement of two aspects of the lives of people: the opportunities people have to develop and use their skills, and to live their lives according to their own choice.[34] Income growth enables and aids human development, but it does not guarantee human development.[35]

This dissertation is mainly focused on technological advancement. However, the importance of human development is not disregarded. Technological advancement nowadays is not only about industry, but is also about improving the quality of life and enabling all human beings to achieve their full potential.

For example, telecommunications technology enabled many people to have their own bank account for the first time in their lives, thanks to mobile phone banking.[36]. Considering that the banking system provides security of personal wealth[37] and is a

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[32] TATYANA P SOUBBOTINA & KATHERINE A SHERAM, BEYOND ECONOMIC GROWTH: MEETING THE CHALLENGES OF GLOBAL DEVELOPMENT (World Bank Publications 2000).

[33] *See supra* 32 7

[34] UNDP, *About Human Development*, http://hdr.undp.org/en/humandev. (last visited Jul. 28, 2016).

[35] *See supra* note 34

[36] GAUTAM IVATURY & MARK PICKENS, MOBILE PHONE BANKING AND LOW-INCOME CUSTOMERS EVIDENCE FROM SOUTH AFRICA (Consultative Group to Assist the Poor/The World Bank and United Nations Foundation 2006).

[37] If one's cash is stolen or is otherwise lost, it will not come back, but when adequately

prerequisite for modern business and financial activities such as starting a business, taking out a loan, buying insurance, or transferring money to one's dependents, technology certainly contributes to giving more opportunities and freedom of choice for to underprivileged people.

An important index of technological achievement of a country is the Technology Achievement Index (TAI). The TAI was set out by the United Nations Development Programme (UNDP) Human Development Report in 2001 as a way to measure the stage of technological development of a country. It measures "how well a country is creating and diffusing technology and building a human skill base", focusing on "how well the country as a whole is participating in creating and using technology".[38] The targeted developing countries of this dissertation, China and Ghana, have been improving in terms of TAI in the period from 2001 to 2009: China improved from 0.299 to 0.334 and Ghana from 0.139 to 0.169.[39]

An alternative index is the Global Innovation Index, which was set out by the World Intellectual Property Organization (WIPO), Cornell University and INSEAD in 2008.[40] It is aimed at measuring the richness of innovation in society[41] and displays the dispersion of innovation around the world[42]. It is calculated by averaging the Innovation

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reported a loss of a bankcard would normally lead only to inconvenience and not loss of the whole value deposited in the bank account.

[38] UNITED NATIONS DEVELOPMENT PROGRAMME, HUMAN DEVELOPMENT REPORT: MAKING NEW TECHNOLOGIES WORK FOR HUMAN DEVELOPMENT: 2001: TECHNOLOGY REVOLUTION FOR HUMAN DEVELOPMENT IN A NEW ERA (Oxford University Press, 1990-2001) 46

[39] The data of 2001 comes from *supra* note 38 48-49. The data of 2009 comes from Anthony Nasir et al., *Technology achievement index 2009: Ranking and comparative study of nations*, 87 SCIENTOMETRICS 41–62 (2010) 48, 50

[40] For more information, *see* Cornell University et al., *GII*, https://www.globalinnovationindex.org/content/page/GII-Home. (last visited Jul. 28, 2016).

[41] CORNELL UNIVERSITY ET AL., THE GLOBAL INNOVATION INDEX 2013 THE LOCAL DYNAMICS OF INNOVATION (Soumitra Dutta et al. eds., 2013) 37

[42] *See supra* note 41 7

Input Sub-Index and the Innovation Output Sub- Index.[43] The Innovation Input Sub-Index consists of 5 elements - institutions, human capital and research, infrastructure, market sophistication and business sophistication. The Innovation Output Sub-Index, on the other hand consists of knowledge and technology outputs and creative outputs.[44]

Compared to TAI, this provides a detailed insight of innovative activities in a country, but provides less information with regard to the availability of technology to the general public. Of 141 countries, China has a score of 47.47 and ranks 29th, while Ghana has a score of 28.04 and ranks 108th. [45] Both countries outperform their peers with a similar level of economic development.[46]

Term "development", when it is used in this paper, refers to all technological, industrial, economic and human developments, although the main focus is on technological advancements.

1.6 The interrelation between the concepts

1.6.1 Importance of technology to development

Very few people question the importance of technology to development. Although for many it may be true that "[d]evelopment and technology enjoy an uneasy relationship"[47], a vast majority of professionals and people generally agree that technology, be it primitive or cutting-edge, is crucial to improving the socio-economic standards of a population[48]. Technology can be "used to empower people, allowing

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[43] *See supra* note 41 6

[44] *See supra* note 41 7

[45] CORNELL UNIVERSITY ET AL., THE GLOBAL INNOVATION INDEX 2015: EFFECTIVE INNOVATION POLICIES FOR DEVELOPMENT, (Soumitra Dutta et al. eds., 2015) xxxi

[46] *See supra* note 45 xix

[47] *See supra* note 38 iii

[48] ANDRES GUADAMUZ, TECHNOLOGY TRANSFER, OPEN LICENSING AND DEVELOPING COUNTRIES (LAP Lambert Academic Publishing 2010) 9 "It could be theorised that a society with technological advantages will have easier and cheaper ways to attempt to address many of the causes of poverty and underdevelopment." *See* also *supra* note 38 iii "While it is undeniable that many of the high-tech marvels that dazzle the rich North are inappropriate for the poor South, it is also true that research and development addressing specific problems facing poor people – from combating disease to developing distance

them to harness technology to expand the choices in their daily lives".[49] Thus, technological development has the potential to invoke not only economic development, but also human development.

1.6.2 The technology gap

Unfortunately, as with many other important factors in development, technology is an unevenly distributed resource.[50] Many developing countries today suffer from technological dependence, long after political independence has been achieved. As the Angolan Secretary of State for Information Technology, Pedro Sebastião Teta, stated in 2014, after 39 years of political independence an "[a]nthem and flag are not enough, the country must acquire the economic and technological sovereignty"[51].

According to the aforementioned UNDP report,[52] the country with the highest TAI was Finland, followed by the United States and Sweden. All three countries have a TAI score of over 0.7. On the other hand, the lowest three in the ranking, Tanzania, Sudan and Mozambique, have scores of 0.08 or less. Patents granted to residents were 994 per million people in Japan, whereas many countries had one patent or fewer[53].

The technology gap itself has already been recognized and discussed in the United Nations in the 1960s, and since then much efforts have been expended on trying to solve the problem, as discussed in the following section of this dissertation. However, efforts have not always been successful[54], as can be seen from the scores of the TAI

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education – have proved time and again how technology can be not just a reward of successful development but a critical tool for achieving it."

[49] *See supra* note 48 (UNDP 2001) iii

[50] *See supra* note 48 (Guadamuz 2010) 9 *See* also, *supra* 38 46

[51] Agência Angola Press, *Angola struggles for technological independence*, AGÊNCIA ANGOLA PRESS (Nov. 06 2014, 4:10 PM) http://m.portalangop.co.ao/angola/en_us/noticias/economia/2014/10/45/Angola-struggles-for-technological-independence,d0ee70c7-79ee-402e-8e33-59aca7583be1.html. (last visited Jul. 28, 2016).

[52] *See supra* 38 48-49

[53] *See supra* 38 48-49

[54] *See supra* 38 47

index above.

1.6.3 Enhancing technical capabilities in developing countries

In order to bridge the technology gap, the technical capabilities of developing countries should be enhanced. Although the state in which many developing countries are currently mired and from which they need to be extracted is referred to as "technological dependence", the antonym of "technological dependence" nowadays is, interestingly, not "technological independence"[55], despite the common usage of the term. In the modern world, in most industries, even the biggest companies are dependent on other companies' technologies, and in most fields no single nation has every world leader under their jurisdiction. Enterprises and nations, worldwide, are becoming increasingly interdependent through trade and commerce, and this globalization applies also to technology. The world's major producers of innovation are interdependent, and if developing countries are to follow their path, their goal should actually be "technological interdependence"[56].

According to "Technology in Theory" (Hayashi, 1990)[57], the path from technological dependence to "self-reliance" is described as follows:

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[55] TECHNOLOGICAL INDEPENDENCE: THE ASIAN EXPERIENCE: THE ASIAN EXPERIENCE (Saneh Chamarik & Susantha Goonatillake eds., United Nations University 1994). The term "self reliance" was used, but nowadays, more than 20 years after the publication, with more machines requiring interoperability, this term, too, is no longer applicable in many the technological fields.

[56] This idea was suggested to the author by Dr. Bertram Huber, Principal of IP Seva and former Senior Vice President of Robert Bosch GmbH, during an interview conducted in July 2015.

[57] *See supra* note 12. *See also*, Albert G. Z. Hu et al., *R&D and technology transfer: Firm-level evidence from Chinese industry*, WILLIAM DAVIDSON INSTITUTE WORKING PAPER n.582 (2003). "In each of these economies, technologically lagging firms have learned to innovate by first imitating technologies created in developed economies. …Overtime, with the establishment of formal R&D operations, many firms are making the transition from imitation to innovation…."

a) Acquisition of operational techniques (operations)
b) Maintenance of new machines and equipment (maintenance)
c) Repairs and minor modifications of foreign technologies and equipment, both in a system and in operations (repairs and modifications)
d) Designing and planning (original design and creation of a system)
e) Domestic manufacturing (self-reliance in technology)

While being a latecomer in a certain technology is definitely a disadvantage in the international market, where the competition is fierce, late comers can also enjoy some advantages – they have saved the time, money and energy that had to be expended on each step.[58] Post-war Japanese steel manufacturers had an advantage over their competitors in developed countries because "steel manufacturers throughout the world were competing to enlarge the scope of production, and each country was developing components of technology with little regard for what other countries were doing", whereas the Japanese steel manufacturers "were observant and could collect data on these various component technologies and integrate them into a single system" and could quickly and successfully catch up with the most advanced technology in the world[59].

As a late starter, a country must choose some sectors that meets its development needs and in which the country (or region) has a competitive advantage, as it is not possible to reach a technologically advanced state in every field of technology, at least not simultaneously[60].

In order to enhance the technical capabilities of developing countries, technology transfer is often the first step. In the aforementioned steps to technological self-dependence, the first step mentioned is the acquisition of operational techniques.

Technology transfer from developed to developing countries has been attracting a lot of attention from scholars and practitioners continuously, especially with regard to socio-economic development. Technology transfer has been seen as a multi-purpose

[58] *See supra* note 12
[59] *See supra* note 12 Part 1.
[60] *See supra* note 12

tool that provides developing countries with goods which embody the technology, that accelerates economic development, that realizes environmentally sound development, and that enables developing countries to become technologically independent and even succeed as exporters of technology.

However, despite the high expectations and enormous efforts of the international community over more than half a century, there is still not enough technology, nor even goods which embody technology, let alone innovations, in the third world. Some countries have morphed into industrialized, economically developed countries by utilizing technology, but others are still unable to realize their full potential.

Technology transfer often has a spillover effect – once it is implanted, it subsequently generates more inventions. Nevertheless, this is not the case when a technological "enclave" is created by keeping the technology within a transnational corporation[61].

When the provider and recipient of the technology are located in different countries, but the recipient is merely a subsidiary of a provider who wishes to keep the technology to itself, the spillover cannot occur (unless the IP rights for the transferred technology are infringed).

The characteristics of the transferred technology are also crucial – for example, if an ecologically unsound technology is transferred, it is likely that it will have the spillover effect of generating related, ecologically unsound technological inventions[62]. It is therefore preferable to transfer technologies that are beneficial for the environment or that help in the pursuit of other national, regional or global priorities.

1.6.4 The various factors that hinder technology transfer to developing countries

Despite its importance in development, insufficient technology is transferred to developing countries. Previous investigations and the author's fieldwork suggest the following possible reasons.

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[61] *See supra* note 12

[62] Antoine Dechezleprêtre et al., *Knowledge Spillovers from clean and dirty technologies*, No 1300 CEP DISCUSSION PAPER (2014).

1.6.4.1 The patent system

The first hypothesis that comes to mind is that the intellectual property system is to blame. The patent system and the infiltration of technologies to less developed areas of the world are often seen as conflicting. This perception can be observed from the endless heated debate between the developed and developing world on whether or not to restrict patent rights in order to promote the health and wellbeing of the public in the developed world.

However, the patent system was and is not intended to prevent the infiltration of technology. On the contrary, it was developed as an "antidote to trade secrets"[63], providing an incentive to disclose by protecting the technology from copying and assuring compensation when licensed out. The exclusivity is limited to a certain period, and after that term has expired, the knowledge belongs to the public domain[64]. The raison d'etre of the patent system is to infiltrate technology, and to encourage human beings to assemble their knowledge and bring humanity to a better tomorrow, rather than keeping the fruit of their efforts to themselves and forcing competitors to make similar parallel inventions.

Evidence suggests that patents are not the major hindrance of technology transfer in all areas of technology. In areas such as biotechnology and pharmaceutical technology, patenting is done with great intensity, often covering many developing countries. In other areas, inventions are seldom patented in developing countries. In other areas, inventions are seldom patented in developing countries. A study by the European Patent Office

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[63] MARTIN J. ADELMAN ET AL., PATENT LAW IN A NUTSHELL (West Academic Press 2nd ed. 2012) 5

[64] Due to the rapid development of technology in the modern world, in many fields a technological invention can quickly become obsolete, sometimes well before the patent expires. In such a case, the patent would cover the lifetime of the technology, and the knowledge surrendered to the public domain after the expiration of the patent could be useless by then. Nevertheless, the patent system can still be useful: initially cutting-edge technology, which is necessarily disclosed in the patent, becomes available immediately for beneficial advancements of the disclosed technology. The patent is therefore potentially very useful for the public even though it may not actually expire for many years."

revealed that only 1% of the world's clean energy technology related patent applications from 1980 to 2009 have been filed in Africa.[65]

Since patents are territorial, inventions that are not patented in a country can be used freely throughout the respective country. One could even argue that the patent system potentially encourages the free use of technology when compared with keeping the invention as a trade secret, because the patent system requires disclosure of the invention. All the patent documents are available to the general public including foreigners. Therefore, theoretically, the disclosure in a foreign jurisdiction without protection in the jurisdiction only assists in the dissemination of the technology, since the proprietor of the technology cannot enforce its right in a country in which the patent is not registered.

1.6.4.2 Priority of other concerns

There are situations where technology licensing cannot work at all: In countries (or regions) which suffer from extreme poverty throughout the nation, or are in a state of civil war, or suffer other circumstances which prevent them from conducting normal legislative and administrative activities. Although these are important reasons why technology is unavailable in many parts of the world, resolving such issues is beyond the scope of this dissertation.

1.6.4.3 Unwilling licensors

The unwillingness of patent holders to license out their technology is not only seen where there are potential technology suppliers in developed regions and consumers in less developed regions. It is also common for prospective licensees in a developed region to be denied a license because the license would destroy the monopoly or decrease the competitiveness of the licensor in the marketplace. The prospective licensor and licensee are often competitors in the marketplace, which makes it very difficult for them to agree on the terms of licenses. This is a predictable effect of the patent system as, at least to some extent, it is intended to create monopolies during the term of patents in exchange for the disclosure of the details of inventions to the public.

A licensor will grant or deny a license to a potential licensee considering

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[65] EUROPEAN PATENT OFFICE, PATENTS AND CLEAN ENERGY TECHNOLOGIES IN AFRICA (2013) 7

multiple factors, such as the life cycle of the product and the potential lucrativeness of the market for the licensor. When the technology has a long life-cycle, for example in the case of pharmaceuticals, it is more valuable to the licensor and the patent system encourages inventors to enjoy their monopolies without any competitors for a long time. In contrast, when a product or technology has a shorter life-cycle, it motivates the patent proprietors to get the most out of the technology over the limited period of time, even if it nurtures competitors.[66]

When a specific market is considered lucrative for the licensor's own business and the company is able to enter the market itself, the company will be interested in either investing in a production facility or exporting products to the market rather than licensing out the invention.[67] In cases where companies lack local facilities for sales or further research and development for adaptation of the technology, the technology holder may be interested in involving a local company as a licensee. Some companies would also want a local identity for sales because the buyers of a product would prefer to do business with other domestic entities.[68] Tax systems also greatly influence the decisions of licensors.[69]

When the technology transfer involves enterprises developing countries as a licensee, technology holders could be more reluctant to provide their technology. Apart from the legal and legislative issues mentioned in 1.6.4.10 and 1.6.4.11, technology holders could also be reluctant because of added difficulty in confirming the identity and the financial ability of the transferee.[70]

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[66] WALTER ALEXANDER CHUDSON, INTERNATIONAL TRANSFER OF COMMERCIAL TECHNOLOGY TO DEVELOPING COUNTRIES (UNITAR research reports; no. 13 1971). 22

[67] *See supra* note 66 22

[68] *See supra* note 56

[69] UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, TAXATION AND TECHNOLOGY TRANSFER: KEY ISSUES: TRANSFER OF TECHNOLOGY FOR SUCCESSFUL INTEGRATION INTO THE GLOBAL ECONOMY 2005 (United Nations 2006).

[70] Interview with Mr. Naoto Kuji, Executive Managing Director of Japan Intellectual Property Association. (Nov. 2014)

1.6.4.4. Unwilling licensees

Sometimes, not only licensors but licensees are also unwilling to obtain a license. In some cases, a negative view that seeking transferable technology is "face-losing" and "propagating the image that their country is undeveloped", hinders technology transfer.[71] Apart from these "emotional" barriers, enterprises in developing countries also fear that the disclosure of the necessity for technology transfer would put them in a competitive disadvantage, because it would mean that their weakness is being disclosed to a competitor.[72]

1.6.4.5 Undeveloped infrastructure

Infrastructure that facilitates the use of technology is crucial as it is the foundation for the transfer of technology. Electricity is needed to use most modern machinery, but it is still not available in some parts of the world. Until recently, phones were usable only in those areas that a physical line could reach. Thanks to technological advancements in, for example, the fields of satellites, wireless technology, telecommunication and solar panels, the infrastructure needed to introduce technology has become simpler in certain areas; however, in other areas, more infrastructure is needed. In any case, infrastructure still remains as an important determining factor regarding the feasibility of transferring technology.

Infrastructure in the broader sense does not cover only tangible objects; there is also the labor force. In the early 1970s, Chudson (1971) pointed out that "the lack not only of local engineering skills but also of an "abundant and highly skilled industrial labor force able to read blueprints, set up tools and in other ways substitute human skills for machine capabilities" imposes a severe limit on absorption and adaptation of imported technology and contributes to a more capital intensive operation than is used in an industrialized country". Even when the transfer does occur, "[p]roduction techniques and equipment are usually adapted to the skills of the local labor supply, and market requirements. This can mean that the use of much smaller, less sophisticated equipment than would be considered economical" is appropriate in developed

[71] *See supra* note 70

[72] *See supra* note 70

countries.[73]

Chudson suggested that, in order to promote technology transfer, one must consider a package of technology, infrastructure building and capacity building based on training and education. Adaptations of technologies may also be necessary when the local conditions are premature. Although the report was published more than 45 years ago, it still holds true in the modern world.

Government institutions should take the lead in addressing infrastructural issues, as they are primarily responsible for infrastructure development. Technology seekers and providers, in concordance with the governments, should also bear a role in infrastructure building, especially infrastructure specific to the implementation of the transferred technology and human resources development.

1.6.4.6 Lack of technological ability

One of the most significant obstacles to technology transfer is a lack of technical ability on the part of the potential recipient of the technology.

Technological ability is needed not only when implementing technology, but also during the preparatory stage. Before technology can be transferred, the recipient must assess the technological needs, look for a suitable technological solution, contact potential suppliers, negotiate with the prospective partner and sign a licensing agreement. In order to identify the issues and address the technological needs, one needs to have a technical understanding of the situation and find a causal link between the problematic phenomenon and the cause. The determination of the suitability of technology also requires technological knowledge. A lack of technical skills poses a negative influence on the success of technology transfer in many stages throughout the process.

Therefore, merely permitting someone to use the technology is not enough – one needs to first bridge the gap in technological ability required to identify the needs, make a match and transfer the technology. This is one of the reasons why the IP system, despite providing ample technical information free of charge to potential users in jurisdictions

[73] This is not necessarily a bad thing, as it allows developing nations to enjoy the fruits of invention at a lower initial introductory cost, provided that the old technology does not have significant shortcomings or trigger serious side effects by comparison with the new technology.

without registered patents, often does not lead to the use of the freely available technology.

1.6.4.7 Lack of knowledge of available technology

The lack of knowledge of available technologies is also a major problem which hinders technology transfer to developing countries. Although patented technology is theoretically open and available to anyone, it is often very difficult for people in developing countries to identify a technology capable of solving the problems they face.

1.6.4.8 Differences in the implementation conditions of the technology

The second obstacle is differences in implementation conditions. The infrastructure, climate and human resources available for the implementation of technologies varies from country to country. The availability of roads, electricity and water is often a prerequisite for technology transfer. If the implementation conditions of the licensee differ greatly from those to which the licensor is accustomed, additional investment for building infrastructure or for the modification and adaptation of the technology may be necessary.

Despite initially being an obstacle, this gap can be converted into a strength once a technology has been transferred, as the modified technology can be exported to other countries with implementation conditions similar to those of the licensee.[74]

1.6.4.9 Lack of funding and purchasing power

Other obstacles to technology transfer and the infiltration of technology or necessary goods based on that technology, such as a lack of public funding or private purchasing power, are primarily problems of socio-economic development and public policy, outside the scope of patent law, but they could be partially mitigated by the effective use and modification of patent law in liaison with other policies.

For example, the reasons why access to medicines or medical treatment is often difficult in developing countries are usually that the purchasing power of households is too low, or the infrastructure within the country has not yet achieved the standard

[74] Interview with Prof. Xiaoli Chai, College of Environmental Science and Engineering, Tongji University (Jan. 2016)

necessary to distribute or use medicines or medical devices effectively.

This problem is exacerbated in some countries by low health insurance coverage, both public and private.[75] In China, out of pocket health expenditure (paid directly by the household) accounts for 32.0% of total health expenditure. In Ghana, where universal health insurance is available, the ratio was 26.8%. In Japan and Germany, the ratio was far lower, at 13.9% and 13.2%, respectively.[76] The ratio of out of pocket health expenditure was high in developing countries and low in developed countries. LDCs had an average of 46.4% out of pocket health expenditure ratio while OECD countries had on average 13.6%.

Public expenditure is also relatively low as a part of total expenditure on health in developing countries. The ratios of public health expenditure to all health expenditure in China and Ghana are 55.8% and 59.8%, respectively. In Japan and Germany, the ratios are 83.6% and 77.0%. LDCs have on average 40.6% public coverage and OECD countries on average 62.2%.[77]

This shows that private and public insurances and public expenditures fail to protect developing country households from overwhelming medical expenditures, despite the need because of their low purchasing power. The lack of adequate external support for healthcare related payments makes households particularly sensitive to the price of healthcare.

As seen above, it is mostly the economic conditions and the lack of ability of governments to pay for healthcare than the IP system that is hindering the availability of goods and services in these examples. Nevertheless, it does not mean that these

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[75] Pinelopi Koujianou Goldberg, *Alfred Marshall Lecture: Intellectual Property Rights Protection in Developing Countries: The Case of Pharmaceuticals*, Volume 8, Issue 2-3 JOURNAL OF THE EUROPEAN ECONOMIC ASSOCIATION (2010) 7-8

[76] The World Bank Group, *Out-of-pocket health expenditure (% of total expenditure on health)*, http://data.worldbank.org/indicator/SH.XPD.OOPC.TO.ZS?view=chart. (last visited Jul. 29, 2016)

[77] The World Bank Group, *Health expenditure, public (% of total health expenditure)*, http://data.worldbank.org/indicator/SH.XPD.PUBL?name_desc=false. (last visited Jul. 29, 2016).

problems do not warrant attention in the patent law debate as well. The standpoint of this dissertation is that IP is not the main obstacle to technology transfer or necessary goods, but a bigger role should be assumed by the IP system in making technology and goods available in the less developed parts of the world.

The major role the IP system should play in the future is the role of a key facilitator of technology transfer. Legislative and public policy suggestions in this regard are provided in the conclusion.

Although this is not the principal subject of this dissertation, it must be emphasized that efforts should also be made to prevent the abuse of IP rights. As with all other properties, IP should be used in a fair manner, and public and private schemes which incentivize (or in some cases, oblige) the use of private property for public purposes are necessary for the system to function properly.

1.6.4.10 Lack of legal knowledge

Another obstacle stems from the lack of legal knowledge. Negotiating a technology transfer agreement is itself a demanding task. Cannady (2013) advises that the parties spend 90 days preparing for negotiation, before the parties sit at the same table.[78] In some cases, it takes multinational entities 2 years to conclude a contract from the start of the licensing negotiation.[79] Of course, these entities have their own legal departments with experienced technicians, lawyers and patent experts.

However, for companies, particularly small and medium-sized enterprises (SMEs) in developing countries without prior experience of handling legal matters, especially of handling matters concerning IP and licensing laws, the negotiation and conclusion of a technology transfer agreement may not be possible without the support of external experts. In the worst-case scenario, the lack of knowledge of a technology recipient could be exploited and the recipient could be tricked into entering into an unfair contract. Therefore, legal support for licensees, especially for SMEs without much experience of licensing, is of crucial importance.

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[78] CYNTHIA CANNADY, TECHNOLOGY LICENSING AND DEVELOPMENT AGREEMENTS (Oxford University Press 2013) 88-

[79] Yuzuki Nagakoshi & Katsuya Tamai, *Licensing Organizations and the Formation of Patent Pools in the Age of Digital Broadcasting*, Sep.2015 GRUR INTERNATIONAL (2015).

The lack of legal knowledge also results in a lack of IP protection for local SMEs. In developing countries, IP protection especially within SMEs, is seen to be insufficient.[80] Legal knowledge and the ability to legally protect intellectual property are not necessary only to protect their own intellectual property, but also to encourage technology transfer.

When companies in the developed world engage in technology transfer, it is common practice to involve the legal department or consult an attorney.

To a legally trained person, some IP protection strategies employed by developing country enterprises, such as over reliance on trade secrets, may seem unreliable, so advice is likely to be given not to transfer technology unless it is certain that adequate measures have been taken to protect the licensor's IP.

1.6.4.11 Relevant legislations and enforcement

National legislations and regulations, such as technology export regulations and licensing regulations could also be an obstacle to technology licensing. National technology licensing regulations could regulate the subject matter of the license or the conditions of the licensing agreement.

As an example of subject matter regulation, most developed countries prohibit or restrict the export of technology which has a military use.[81] Technologies with both military and non-military uses could also be subject to restrictions for both purposes. Although export may be possible with a license, licensing can constitute an obstacle for

[80] Aba Sey et al., *The use of intellectual property protection by micro, small, and medium-scale enterprises: A case study of Ghana*, 21 ENTERPRISE DEVELOPMENT AND MICROFINANCE 67–83 (2010). 21 (1) points out the reasons for the low IP awareness as "the patent system being perceived as too costly and complex, patents not being considered relevant to such firms' line of business, difficulties in enforcing IP rights and risk of litigation."

[81] For example, Japan lists these restricted technologies in the attachment of the Foreign Exchange Order. The United States have the Commerce Control Index and The United Kingdom has the UK Strategic Export Control Lists for a similar purpose.

technology transfer.[82]

However, whether regulations should be loosened or not cannot be determined by considering only their effects on technology transfer, since the regulations are aimed at controlling the dispersion of knowledge which could be used to harm humanity. This is also in the interest of the potential recipient country of the technology, as it can prevent private unauthorized people from obtaining access to technologies that could harm their own people and country. Some flexibility to allow the export of technologies for non-military uses that are beneficial for humanity would be preferable, although whether the flexibility should be widened or narrowed is a question of national security and is beyond the scope of this dissertation.

Licensing regulations in developing countries are usually restrictive in terms of the conditions for licenses for the purpose of protecting domestic licensees. This is understandable considering the difference in bargaining power, but it may also result in inflexibility.

Restriction of grant-back clauses is an example of such licensing regulations. Grant back clauses of licensing agreements requiring licensees to grant back the rights of the subsequent invention to the original technology holder are clauses that are on the one hand a tool of licensor dominance but, on the other hand, could be useful for humanitarian purposes, as seen in the case studies in Chapter 4.[83] Despite being useful for the dispersion of the most up to date technology for humanitarian use, such clauses could be prohibited under the national law of some jurisdictions.

The inconsistencies between the legislations in the developed and developing world are also an issue for foreign companies that are considering transferring technology to developing countries. This is especially a problem for legislations with an international impact, such as those determining exhaustion principles.

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[82] *See* MA ZHONG ET AL., INTERNATIONAL COOPERATION FOR REDUCING GREENHOUSE GAS EMISSIONS FROM THEORY TO PRACTICE THROUGH TECHNOLOGY TRANSFER (1997) http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-RPT-reducgreen.pdf (last visited Jul. 29, 2016). 5

[83] Golden Rice Humanitarian Board, *Golden Rice Licensing Arrangements*, GOLDEN RICE PROJECT, http://www.goldenrice.org/Content1-Who/who4_IP.php. (last visited Jan. 13, 2017).

On the other hand, the delicate nature of technology transfer regulations is such that it reflects the stage of its development[84] and has to reflect the need for protection of local industries. The regulations should encourage both technology transfer and local industry protection at the same time.

One way of allowing these two conflicting policy goals to coexist could be to provide space for case-by-case consideration. This would allow more contractual freedom and therefore more possibilities for creative licensing schemes. The difficulty is that such flexibility could result in opaqueness in the decision making process and could therefore actually be an obstacle to technology transfer. A clear and simple, yet flexible, rule is necessary, although the two values of effective technology transfer regulations are not easily reconcilable.

The lack of judicial and administrative enforcement capability of governments is also a problem. Technology transfer can cause many problems, such as leakage of trade secrets and illegal copying of patented products. A licensor would be demotivated if it is unlikely that adequate measures would be taken by the relevant government authorities if their rights were to be infringed and were forced to compete with infringers.

1.6.4.12 Lack of collaboration between institutions

Lastly, the lack of collaboration between institutions and sectors is yet another obstacle. For example, in order to import technology from abroad, one needs to identify the needs and to identify the appropriate technology, then contact the potential partner and negotiate a licensing agreement. Before concluding the licensing agreement, one also has to make financial arrangements. It is also possible that one will need to work with the local government to establish social infrastructure. These procedures involve many actors, including multiple government institutions. The lack of collaboration between IP institutions in governments,[85] such as a patent office and development related institutions

[84] For example, Japan used to have a very restrictive licensing regulation but it gradually opened the market up as the country developed.

[85] *Supra* note 80, which points out the issue of IP offices being overly focused on "compliance with legal and procedural requirements rather than protection of MSMEs' IP".

is one of the reasons why the IP system is insufficiently exploited in the effort to enhance national development.

1.6.5 The intellectual property system and technology transfer

As indicated in 1.5.4.1, in recent years, the IP system has been seen as an obstacle to technology transfer, but the idea that the IP system is the major hindrance to technology transfer is not wholly correct.

It must be noted that, often during the ongoing debate on patents and the developing world, little consideration is given to the fact that the private property rights of proprietors are also rights which need to be respected:[86] The Universal Declaration of Human Rights Article 27[87] declares IP to be one of the human rights, that "every

[86] Patent rights are incorporeal property rights granted by the state based on the statutes, as an extension of the general property rights under civil law, which object is only things which are exclusively controllable. *See* RYU TAKABAYASHI, PATENT LAW FROM THE GROUND UP (Yuhikaku 3rd ed. 2008) 3. Property rights in general are considered to be one of the natural rights – rights which each individual naturally has. *See supra* note 63 10. It originally was intended to protect tangible objects such as real estate, but gradually expanded its coverage to intangible but still exclusively controllable things such as electricity. *See* Takabayashi (2008) 8. Especially in light of the expansion of the coverage of property rights, it is reasonable to argue that patent rights compose a part of natural rights. *See supra* note 63 10. However, considering that the invention protected by patent rights are in principle not exclusively controllable without the legal protection which patent laws provide, it is also possible to argue that patent rights are exclusive rights granted by the government for the purpose of developing industries, not as a part of the natural rights which individuals own by nature. *See* Takabayashi (2008) 8. Despite this discussion, it is the general consensus view that modern patent rights are not granted at a government's discretion but that all inventions entitled to a patent under relevant laws must be granted a patent upon application, except in cases where procedural requirements are not met. *See* Takabayashi (2008) 8 Even if patent rights are not natural rights, they must still be adequately protected in order to fulfil the purpose of the initial grant.

[87] United Nations General Assembly, The Universal Declaration of Human Rights, Dec. 10, 1948, General Assembly resolution 217(III) (1) Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.

individual and every organ of society … shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance".[88] The two rights – the rights of the consumer to obtain technology or necessary goods at a reasonable price, and the rights of patent owners, who invested their resources to solve technological problems we face and yet still agree to disclose the information – are at odds, and a delicate balance is what the modern patent system must aim to achieve. The solution should be balanced and beneficial to both parties.

In considering the ways to balance the needs of consumers and innovators, it must be reemphasized that neither inventors nor inventions are an obstacle to the solution, but are a key to the solutions which enable humanity to address its problems. The patent system is there to protect the legitimate rights of inventors, who have most often invested massive amounts of their resources in their inventions. In order to encourage inventors to make further progress in solving the problems we face today, any restriction of private rights should be the exception, not the general rule.

That said, there are indeed some imperfection in an IP system that does not emphasize sufficiently the sharing aspect. More legislative efforts should be made to meet the needs of developing countries for technology by removing obstacles, incentivizing and in some cases obliging the parties to transfer technology which would be beneficial for development.

1.6.6 Technology transfer through licensing

As seen above, technology transfer can be done in various ways, such as by assignment of the IP, allowance of the use of the IP, provision of know-how or technical expertise, or joint development. This dissertation focuses on licensing because of its suitability for technology recipients in developing countries and their development.

When a patent is sold instead of being licensed, the ownership of the right would

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(2) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

[88] United Nations General Assembly, The Universal Declaration of Human Rights, Dec. 10, 1948, General Assembly resolution 217(III) Preamble

move from one party to another. It is often a one-time transaction with few continuing obligations between the parties.[89]

Comparing the assignment of patents to a third party with licensing, in licensing, the licensor retains the proprietary rights but allows the licensee to implement the technology within the scope defined in the agreement. It enables the licensor to profit from the implementation by third parties which would otherwise have been impossible owing to geographical distance, manufacturing capacity, or differences in the field of application.[90]

With regard to the dissemination of technology, licensing has an advantage over mere sales of technology, as it normally involves cooperation between the licensor and the licensee, which tends to benefit the licensee as the technology recipient in the short run but, in the long run, could also benefit the licensor through collaborative development of the technology.[91] Licensing, with a suitably crafted scheme, can therefore bring benefits to both the licensor and the licensee by promoting collaboration.[92]

Licensing has an additional advantage, in that it can, in principle, be granted to an unlimited number of licensees (or in some cases, be obliged to be granted in a non-discriminatory manner), which should also lead to greater dissemination of the technology. It can also be used as a foundation for open innovation. For these reasons, this dissertation focuses on international technology transfer through licensing of IP rather assignment.

1.6.7 Legislations, policies and technology licensing

Technology licensing related legislations and policies typically have one of two aims: incentivizing technology transfer or regulating unfair business practices.

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[89] PIERRON IVONNE, EXCHANGING VALUE - NEGOTIATING TECHNOLOGY LICENSING AGREEMENTS: A TRAINING MANUAL (World Intellectual Property Organization 2005) 17

[90] *See supra* note 89 18

[91] *See supra* note 89 18

[92] *See supra* note 89 82

An incentive scheme for technology transfer plays a crucial role in enhancing technology transfer, as a majority of commercial technologies are owned by private companies and therefore technology transfer must be undertaken also by private parties.

In the EPO, only 6 % of all applications are submitted from universities or research institutes in 2014[93]. The top 10 applicants for EPO patents in 2014 were all private enterprises, and even among the top 100, only three, namely the Commissariat à l'énergie atomique et aux énergies alternatives (33nd place), Fraunhofer-Gesellschaft zur Förderung der Angewandten Forschung E.V. (55th place), l'Institut National de la Santé et de la Recherche Médicale (71st place), are research institutes[94].

Universities and research institutes, usually more public interest oriented than companies, often emphasize that the technologies they developed should be made available to the general public; however, the technologies they hold are often still far from application in the field. Therefore collaboration with universities can mean further collaborative work is necessary which requires the ability on the part of the licensee to adapt the technology to its specific needs, or the involvement of a third party.

Licensing between private entities therefore is, and should be, a major route for technology transfer to developing countries. The major incentive for private entities is to maximize profits, but other concerns such as a company image or meeting corporate social responsibilities may also be an incentive to license out technology. Furthermore, as the center of economic growth now lies in the developing world, many companies wish to enter the market to seek new business opportunities. It is therefore crucial that legislations or policies concerning technology transfer be used to seize this opportunity and further incentivize private enterprises to conduct technology transfer to developing countries.

Reflecting the unequal negotiating power of developed country licensors and developing country licensees, some regulation mechanism is necessary in order to control technology transfer.

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[93] European Patent Office, *European patent office receives record number of patent filings*, https://www.epo.org/news-issues/news/2015/20150226.html. (last visited Jul. 29, 2016).

[94] European Patent Office, *Statistics*, https://www.epo.org/about-us/annual-reports-statistics/statistics.html. (last visited Jul. 29, 2016).

As an agreement reflects the balance of negotiating power between negotiating parties, developing country governments fear that their own industries may give in to the pressure of foreign partners and sign an unfair contract. In order to prevent the abuse of freedom of contract, many developing countries have a specific list of prohibited clauses and mandatory clauses in their legislation or guidelines.

These two aspects of licensing related legislations and policies are not automatically symbiotic. Developed country enterprises would want freedom of contract, and excessively strict regulations would scare them away from licensing activities in a jurisdiction. On the other hand, if the regulations are too loose, there exists a real possibility that developed country entities, mainly licensees, would be exploited. A delicate balance between the two requirements should therefore be achieved.

1.7 Content of the dissertation

In the introduction, the background of the study was introduced and the research question posed. The scope of this study and the key concepts were defined, and the interrelationship between the concepts was explained. In the following chapters:

In Chapter 2, licensing agreements are defined, classified, and the implications of the types of licenses for developing country enterprises discussed in detail. Based on Chapter 2, Chapter 3 goes into the detail of the clauses in licensing agreements and discusses what the consequences of the clauses are and how they shape the parties' actions upon implementation of an agreement.

Chapter 4 introduces ten prominent examples of technology transfer schemes and explains their significance in relation to other similar platforms both inside and outside the fields of technology.

In Chapter 5, international and national licensing related regulations are described in detail in a comparative manner, and the effects on public entities that wish to engage in technology transfer are analyzed.

In Chapter 6, legislations and policy suggestions for public institutions, as well as best practices for private entities, are offered, based on all the aforementioned chapters, as the conclusion of this dissertation.

Chapter 2. Classification of Licensing Agreements and Implications to Developing Countries

2.1 Licensing

Licensing is primarily a "permission" for an act, but could also mean "enabling", depending on the context[95]. In the case of the licensing of a patented technology, the technology is already disclosed, but unauthorized use is prohibited by law. In this case, licensing means permission to take the otherwise prohibited action. In other cases, where the technology is protected as a trade secret, which means that it is unknown to the public, licensing would mean teaching and enabling the licensee to use the technology. It could also be that the license is a mixed license, where licensing would mean a permission to use the patented technology and also enable the use of surrounding technology, protected as a trade secret, which is necessary in order to implement the patented technology.

A patent licensing agreement, in essence, is an agreement not to sue against the licensee. Obtaining a license, however, does not mean that the right to use the technology is affirmed against all parties, as it does not automatically exempt the licensees from liabilities occurring from infringing third parties' rights.[96]

Licensing is primarily a private activity occurring as a part of a business strategy, aimed at achieving business goals. It is therefore important to understand what kind of

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[95] Heinz Goddar, *Licensing: Exclusive, Non-Exclusive, Sole, Minimums, Warranties - How to Avoid Pitfalls* (2015).

[96] CYNTHIA CANNADY, TECHNOLOGY LICENSING AND DEVELOPMENT AGREEMENTS (Oxford University Press 2013) 4. In China, indemnities for third-party liabilities are given to domestic licensees when the licensor is a foreign entity. *See* Zhonghua Renmin Gongheguo Jishu Jinchukou Guanli Tiaoli (中华人民共和国技术进出口管理条例)[Regulations of the People's Republic of China on Administration of Import and Export of Technologies] (2008) art. 24 …Where the receiving party to a technology import contract infringes another person's lawful rights and interests by using the technology supplied by the supplying party, the supplying party shall bear the liability therefore.

business objectives lie behind the forms of agreement, which will be discussed in this chapter, and behind individual clauses, which will be discussed in the next chapter.

As in every business activity, licensing practices have mainly developed autonomously in the private domain, while being influenced by policies and legislations. Given that licensing primarily involves private entities, the policies and legislations either order, prohibit, discourage or encourage private parties to act in ways that support certain policy goals. These legislations and policies are discussed in Chapter 5.

2.2 Classification of licenses and their implications

In order to understand licensing better, one must first understand what kind of licenses exist, and what are the legal and factual consequences of choosing a particular form of license, especially with respect to developing countries.

There are many ways of classifying the forms of licensing, based on different criteria, such as the number of parties and/or patents, royalty payments, the scope of the license, the will of the licensor, and the characteristics of technology which is to be transferred. One licensing agreement can be placed in multiple classes: For example a license can be a non-exclusive, collective license. Some classifications do not readily co-exist, for example a pool license is normally considered not to be symbiotic with an exclusive arrangement, as it would probably trigger anti-competition concerns.

The aim of this chapter is to describe the characteristics of each form with examples taken from actual practices, and to provide an understanding of the impacts of licensing schemes on the dispersion of technology to developing countries.

2.2.1 Classification based on the exclusivity of the license

Under this classification, the forms of licensing are differentiated by the scope of the rights granted to the licensee by the agreement. Note that all forms are territorial, which means that an “exclusive” license can be granted to multiple licensees, as long as they all operate in different countries. Also, exclusive licenses can be granted to multiple licensees for the same territory for different technological applications of the license.

2.2.1.1 Exclusive license

An exclusive license refers to a form of licensing where a licensee alone has the exclusive right to use the technology. Even the licensor is excluded from the use of the

technology.[97] It is different from assignment in that the ownership is retained by the licensor and the terms and scope of the license can be limited in terms of contract period, geographical area and field of use.[98]

An exclusive license is the broadest of the three forms of license, the other two forms being sole licensing and non-exclusive licensing. Apart from implementing the technology and sublicensing it to third parties[99], an exclusive licensee has the right to bring infringement proceedings to the court by itself.[100]

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[97] ROGER M. MILGRIM AND ERIC E. BENSEN, MILGRIM ON LICENSING (Release No.43, Matthew Bender, Mar. 2016). §15.08 15 - 89-90

[98] *See supra* note 97 §15.08 15 - 89

[99] In Japan, sublicensing is only allowed when the licensor consents to it. *See* TOKKYO HŌ [PATENT ACT] 1960 (hereinafter "Patent Act"), art. 77 (4) An exclusive licensee may establish a right of pledge or grant a non-exclusive license on his exclusive license to a third party only where the consent of the patentee is obtained. In Germany, an exclusive licensee has the right to grant sublicenses. *See* CHRISTOF KARL, *Germany*, *in* LICENSING (Bruno Floriani ed., Law Business Research Ltd 2014) 65

In the United States, there are no complete lists of elements of rights granted that would constitute "all substantial rights" that should be granted to the licensee in order for the licensee to be deemed "exclusive" in the sense that they have the standing to sue for infringement. *See* John C. Paul & D. Brian Kacedon, *Licensee who receives rights to sue, sublicense, and assign rights can sue for patent infringement without joining the patent owner*, FINNEGAN, http://www.finnegan.com/ja/resources/articles/articlesdetail.aspx?news=95b2a471-a4b5-4abe-a196-f700dd5adce7. (last visited Aug. 2, 2016).

In China, sublicensing is not allowed unless it is stated explicitly in the contract. *See* Zhonghua Renmin Gongheguo Zhuanlifa (中华人民共和国专利法) [Patent Law of the People's Republic of China] (As amended 2008, hereinafter "Patent Law") art. 12 Any unit or individual that intends to exploit the patent of another unit or individual shall conclude a contract with the patentee for permitted exploitation and pay the royalties. The permittee shall not have the right to allow any unit or individual not specified in the contract to exploit the said patent. *See* also KLUWER LAW INTERNATIONAL, CHINA INTELLECTUAL PROPERTY LAW GUIDE (Kluwer Law International 2005). 81-030

[100] In Japan and Germany, an exclusive licensee can bring infringement lawsuits and seek injunction by itself. *See* Oberlandesgericht Düsseldorf, Judgment of Sep. 24, 2015, Case

I-2 U 30/15 for Germany. The Oberlandesgericht Düsseldorf confirmed the standing to bring infringements to court for exclusive licensees and sole licensees.

See also Patent Act art. 100 (Japan) (1) A patentee or exclusive licensee may demand a person who infringes or is likely to infringe the patent right or exclusive license to stop or prevent such infringement. (2) In making a demand under the preceding paragraph, the patentee or exclusive licensee may demand measures necessary for the prevention of such infringement including the disposal of products constituting such act of infringement (including, in the case of a patented invention of a process of producing products, products produced by the act of infringement; the same shall apply in art. 102(1)) and the removal of facilities used for the act of infringement.

However, in the United States, the exclusivity of the license does not necessarily decide whether the licensor has the standing to sue. There are cases under which an exclusive licensee was denied the standing to bring an infringement case to court due to the limitation on the period of contract. Even if the licensor retains the right to practice itself, meaning that it is not an exclusive license in the aforementioned sense, the Court of Appeals for the Federal Circuit has decided that the licensee has the standing to sue. The reason for it was that, although the patentee retained some rights to the patent, the licensee has all the substantial rights. "A patentee that merely retains the right to practice the patent does not risk losing a substantial right if the claims are invalidated or the patent held unenforceable. The retained right to practice a patent is not the same as a retained right to exclude others from doing so." Luminara Worldwide, LLC v. Liown Electronics Co., No. 15-1671 (Fed. Cir. Feb. 29, 2016).

The decisive factor in U.S. case law is whether the licensee could be who has all the substantial rights to a patent. "While a licensee normally does not have standing to sue without joinder of the patentee, an exclusive license may be tantamount to an assignment for purposes of creating standing if it conveys to the licensee all substantial rights to the patent at issue…. To determine whether an agreement to transfer rights to a patent at issue amounts to an assignment or a license, we must ascertain the intention of the parties and examine the substance of what was granted … Chic's rights, however substantial in other respects, are unquestionably valid for only a limited period of time, ending no later than March 16, 2006…. As of March 16, 2006, Contour, absent an amendment of the agreement, will regain all of the rights under the '747 patent that it had previously transferred to Chic. It is thus the unquestioned owner of the patent, and, whatever rights Chic had up until 2006, it is clear that Chic never had all substantial rights to the patent, i.e., it never was the effective owner of the patent. " *See* Aspex Eyewear,

Since an exclusive license grants such a broad right, national laws often require

Inc. v. Miracle Optics, Inc., No. 04-1265 (Fed. Cir. Jan. 10, 2006). This decision was based on two policy considerations. The first was to "prevent multiple lawsuits on the same patent against the same accused infringer" raised by the licensee and the patent owner. The second was to "prevent a party with lesser rights from bringing a lawsuit that may put the licensed patent at risk of being held invalid or unenforceable in an action that did not involve the patentee."

In China, exclusive licensees are "eligible to institute infringement actions or administrative complaints against infringement actions". *See supra* note 99, Kluwer Law International (2005) 43-020

registration[101] or, at least, that it be in writing in order to be perfected.[102]

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[101] In Japan, the Patent Act requires that an exclusive license be registered, otherwise the agreement is void. *See* Patent Act art. 27 (1) The following matters shall be registered in the patent registry maintained in the Patent Office… (ii) the establishment, maintenance, transfer, modification, lapse or restriction on disposal, of an exclusive or non-exclusive license…. *See* also, art. 98 (1) The following matters must be registered to take effect:…. (ii) the grant, transfer (except for a transfer arising from general succession including inheritance), amendment, lapse (except for a lapse arising from a merger or a lapse of the patent right) or restriction on disposition of an exclusive license….

In Germany, §30 of PatG allows the registration of exclusive licenses, but does not make it a requirement. Registration would make it easier for the exclusive licensees to prove their eligibility as plaintiffs in lawsuits, but it is not a requirement in order to have standing.

§30 (1) The Patent Office shall maintain a Register in which shall be recorded the titles of patent applications, the files of which may be inspected by any person, and of granted patents, supplementary protection certificates (§16a) and the names and addresses of applicants or patentees and their representatives, possibly appointed under §25, or authorized parties for service, whereby it shall suffice to enter either one representative or one authorized party for service … (4) The Patent Office shall enter in the Register, at the request of the patentee or the licensee, the grant of an exclusive license on condition that the consent of the other party is proven. The request under the first sentence shall not be admissible as long as the willingness to license is declared (§ 23(1)). The entry shall be canceled upon request by the patentee or the licensee. The request for cancellation by the patentee shall require proof of the consent of the licensee designated in the entry or of the successor in title of said licensee.

In China, registration for all licenses is required by the Zhuanli Shishi Xuke Hetong Beian Banfa (专利实施许可合同备案办法)[Measures for the Record Filing of Patent Licensing Agreement] (SIPO Order, effective Aug. 1, 2011) art. 5 Parties to the licensing agreement shall file a record of their patent licensing agreement within three month from the effective date. (Translated by the author)

[102] For example, in the U.S., in order for an exclusive licensee to have the right to sue, the licensing agreement needs to be in writing, as the right to sue of the licensee exists only when the license is tantamount to an assignment, and 35 U.S.C. § 261 requires such assignments to be in writing. Enzo Apa & Son, Inc. v. Geapag A.G., 134 F.3d 1090, 1093 (Fed. Cir. 1998) "While we acknowledge that a license may be written, verbal, or implied,

Licensors would generally be cautious about granting an exclusive license because the rights it grants are so broad. It excludes the licensee from implementing the patent itself or letting others use the license. The commercial exploitation of the respective technology in the specified location and field become dependent solely on the licensee.

However, certain circumstances may justify or even necessitate a request for an exclusive license. One possible justification is that the licensee needs to make a substantial investment to commercialize the product. For example, the licensed technology may be insufficiently mature to be used for a product in the market,[103] or the technology may need to be adapted to the local implementation conditions. In these cases, licensees must further the development efforts themselves, which requires investment on the part of the licensee. Another example would be a case where the market for the product does not exist in the respective geographical region and the licensee needs to create the market.[104] Other cases may include technology which needs to go through a costly approval process before being allowed on the market, or massive investments in the manufacturing process may be necessary. [105]

In all these cases, the investment justifies the request for exclusivity and the right to bring infringers to court themselves. This is especially so when the result of the investment could be free-ridden (such as in the market creation example), the demand for

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if the license is to be considered a virtual assignment to assert standing, it must be in writing. The limited exception we have provided conferring standing on licensees is restricted to virtual assignees. As such, the licensing arrangement conferring such must, logically, resemble an assignment in both form and substance. Under the 35 U.S.C. § 261 (1994), "[a]pplications for patent, patents, or any interest therein, shall be assignable in law by an instrument in writing." If we were to expand the exception to include verbal licenses, the exception would swallow the rule. Parties would be free to engage in revisionist history, circumventing the certainty provided by the writing requirement of section 261 by claiming to be patentee by virtue of a verbal licensing arrangement."

[103] This example was taken from Prof. Heinz Goddar's lectures in Haifa University, May 5th, 2015.

[104] *See supra* note 103

[105] WORLD INTELLECTUAL PROPERTY ORGANIZATION. SUCCESSFUL TECHNOLOGY LICENSING (World Intellectual Property Organization 2015) 22

exclusivity and the independent standing to sue is high.

2.2.1.2 Non-exclusive license

Unlike the aforementioned exclusive license, a non-exclusive licensee only has the right to use the technology without any exclusivity. The licensor can grant as many licenses as it may wish, as well as implement the technology itself. The licensee does not have the standing to sue in case of patent infringement. A non-exclusive patent license is essentially an agreement that the patent holder will not sue the implementer of the technology.

2.2.1.3 Sole license

A sole license is a non-exclusive license with a contractual obligation between the licensor and the licensee not to license out technology to third parties. The licensors in such contracts retain their rights to implement the technology themselves absent an agreement that states otherwise. The parties could also add a clause that prohibits the licensor itself from implementing the technology. Unlike exclusive licenses, the registration thereof is not required in many important jurisdictions, unless the jurisdiction requires that all licenses be registered (such as in the case of China). Under sole licenses, the licensees are, in general, better protected against competitors by comparison with non-exclusive licensees. The level of protection varies from country to country.[106]

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[106] In Germany, a licensee has a standing to sue based on a sole license, similarly to exclusive licensees *See supra* note 99, Oberlandesgericht Düsseldorf, Judgment of Sep. 24, 2015, Case I-2 U 30/15

In Japan, a sole licensee only has the right to seek compensation but not injunction. The Japanese Patent Act art. 100 limits who can seek injunctive relief. "A patentee or exclusive licensee may demand a person who infringes or is likely to infringe the patent right or exclusive license to stop or prevent such infringement." However, no such clauses are available for determining who are entitled to seek damages. Judicial precedence (*See* "Hairbrush design rights case" Ōsaka Chihō Saibansho Dec. 20 1984 [Osaka Dist. Ct.] MUTAI ZAISANKEN KANKEI MINJI GYŌSEI SAIBAN REISHŪ 18 KAN 3 GŌ 803 aff'd, Ōsaka Kōtō Saibansho Jun. 20 1986 [Osaka High Ct.] MUTAI ZAISANKEN KANKEI MINJI GYŌSEI SAIBAN REISHŪ 18 KAN 2 GŌ 210) states that a) injunctive relief is not allowed because the nature of a sole license is a non-exclusive license with a contractual obligation on the part of the licensor not to grant further licenses (and in this case the licensor further agreed

2.2.2 Classification based on the characteristics of the technology transferred

2.2.2.1 Pure patent license

A pure patent license refers to a form of license where the licensor merely grants permission to use the technology the patent specifies, and no surrounding trade secret is provided to help to implement of the patented technology.[107] Since no support for implementation is provided by the licensor, the licensee must be able to understand the technology by reading the patent and use its own existing know-how to implement it.

Pure patent licensing agreements could therefore be implemented successfully between companies with similar technological capabilities, or the licensee is

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not to implement by itself), and a non-exclusive license only gives the licensee the right to implement the technology, without the right to exclusivity, and b) damages shall be granted to sole licensees in this case, as their exclusivity obtained by the non-implementation by other parties and the licensor is infringed by the third party implementer without legal rights. *See* also "Cimetidine Case" Tōkyō Chihō Saibansho Oct.12 1998, CHITEKI ZAISAN SAIBAN REISHŪ 30 KAN 4 GŌ 709, which decides that sole licensees without the non-implementation of the licensor can also seek damages.
In the United States, the standing to sue is determined based on who owns all the substantial rights, as stated in "Exclusive Licenses" section above.

In China, infringement litigations can be brought to court by either a patent holder or (an)other interested party(ies). *See* Patent Law art. 60. A sole licensee (排他被许可人) is considered to be an "interested party" and can bring IP related disputes to court, according to Zuigao Renmin Fayuan Guanyu Quanguo bufen Fayuan Zhishichanquan Shenpan Gongzuo Zuotanhui Jiyao (最高人民法院 关于全国部分法院知识产权审判工作座谈会纪要)[Summary of the Symposium of the People's Supreme Court Concerning IP Trials of Some Local Courts] 2(1) (effective Jul. 20 1998). Sole licensees can also seek preliminary injunction when the patent holder does not bring the infringement case to court, according to Zuigao Renmin Fayuan Guanyu dui Suqian Tingzhi Qinfan Zhuanliquan Xingwei Shiyong Falü Wenti de Ruogan Guiding(最高人民法院关于对诉前停止侵犯专利权行为适用法律问题的若干规定) [Several Provisions of the Supreme People's Court for the Application of Law to Pretrial Cessation of Infringement of Patent Right] (effective Jul. 1, 2001)

[107] *See supra* note 96 118

technologically superior to the licensor and, more or less, possesses the necessary surrounding technology which would enable it to implement the technology independent of the licensor.

Pure patent licensing is used to settle an infringement dispute (the infringers are implementing the technology by themselves already).[108] It is also often used in university-industry collaboration projects, where the university licensors do not have the know-how to implement the technology in the field.[109] Companies with a strong patent portfolio may wish to generate income through pure patent licensing.[110] Compulsory licensing often involves pure patent licensing, as it is merely a permission to use the technology without being sued.

On the other hand, this licensing arrangement is not suitable for licensees without the ability to implement and adapt the technology so that it is useful for their business. Patents are drafted so that the ordinary person skilled in the art could read, understand and implement.

This brings the question why one would need additional help from licensors when all the necessary information for implementation is provided in the patent document. Cannady presents the reasons for developing countries not being able to use their technology as the following: (a) Patent documents are written with the intention to set the boundaries between technology covered and not covered by the patent, but is not a "recipe for reproducing the invention"; (b) Surrounding know-how is often equally important to enable someone to reproduce the invention.[111]

Especially when the licensing is international, vast gaps in technological ability exist between different countries and individual implementers in companies, and some players in the field may not have the ability assumed to be possessed by "a person skilled in the art." This is where know-how licensing, discussed in the following section, comes

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[108] *See supra* note 107

[109] *See supra* note 107

[110] *See supra* note 107

[111] CYNTHIA CANNADY, ACCESS TO CLIMATE CHANGE TECHNOLOGY BY DEVELOPING COUNTRIES (International Centre for Trade and Sustainable Development (ICTSD) 2009). 5-6

into play.

Interestingly, despite its limitations, pure patent licensing has been proposed or actually attempted to be used as a tool for dispersing technology in developing countries, for example in the forms of compulsory licensing,[112] free licensing[113] or pool licensing[114].

However, considering the aforementioned limitations, it is crucial that these pure patent licensing tools be used in tandem with measures to facilitate implementation through technical assistance in order to encourage technology transfer. Pure licensing without support for implementation could help to increase the availability of goods that embody the technology but, in order to go one step further towards making the technology itself available, it is neither a sufficient nor an effective measure.[115]

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[112] For example, Zimbabwe granted a compulsory license for the governmental production, use and importation of antiretroviral drugs in 2002. The actual implementation of the technology was made possible due to the support of India. *See* James Packard Love, *Recent examples of the use of compulsory licenses on patents*, (2007).

[113] Eco-Patent Commons is an example. *See* Eco-Patent Commons, *Eco-Patent Commons Ground Rules*, http://www.wbcsd.org/pages/adm/download.aspx?id=314&objecttypeid=7. (last visited Aug. 4, 2016). "Patents included in the Commons shall be subject to a covenant, or pledge, not to assert the patent against implementers' environmentally beneficial use of the pledged patent(s). That is, subject to defensive actions described below, the patent holders shall not assert their pledged patents against an implementer's infringing machines, manufactures, processes, or compositions of matter that alone, or when in a larger product or service, achieve environmentally beneficial results."

[114] Medicines patent pool is an attempt at providing pool licenses in the pharmaceutical sector for developing countries. It offers royalty free licensing in a geographical region (for example Africa) for the purpose of providing affordable medicine in developing countries. An example of an agreement can be seen at: Medicines Patent Pool, *MPP License for Lopinavir/Ritonavir (LPV.r) and Ritonavir (RTV) – Africa*, http://www.medicinespatentpool.org/mpp-licence-for-lopinavirritonavir-lpvr-and-ritonavir-rtv-africa/

[115] *See supra* note 111 4 "Voluntary licensing of patents requires, as a practical matter, a consensual business relationship in which more than abstract rights to use patents are

Not only is pure patent licensing an ineffective measure, but also in some cases it is unnecessary (and even risks violating relevant regulations[116]) due to the fact that the underlying patent simply does not exist in the jurisdiction. The coverage of patents in developing countries is often low.[117] Universities and research institutes in developed countries may forego the patenting in order not to prevent the dispersion of technology[118], and for many patent holders, regardless of whether it is a profit-oriented entity or not, it is too costly to file in each and every country in the world anyway.

Licensors often file when the country is attractive as a market, the place of manufacture, has a strong competitor, is a center of commerce and transportation, or the IP protection is strong and enforcement is smooth[119]. A country such as Germany, which has a big enough market, a strong manufacturing industry which could be a competitor, and located in the center of Europe with a strong IP system would be one of the top priority countries in which to file. However, in many of the African countries, for example, none of the aforementioned conditions exist.

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exchanged."

[116] Many countries prohibit licensing agreements of which the subject matter is a non-existing patent. For details *see* Chapter 5.

[117] According to the EPO, less than 1% of all patent applications relating to clean energy technology is filed in Africa. In the pharmaceutical sector, they have a different patenting model and the rate is generally higher. *See* EPO, PATENTS AND CLEAN ENERGY TECHNOLOGIES IN AFRICA (2013) http://documents.epo.org/projects/babylon/eponet.nsf/0/f87537c7cbb85344c1257b24005e7119/$FILE/patents_clean_energy_technologies_in_Africa_en.pdf., *see also*, ipeg, *International or foreign patent filing strategies | intellectual property expert group*, http://www.ipeg.com/international-or-foreign-patent-filing-strategies/. (last visited Aug. 4, 2016).

[118] Stanford University Office of Technology Licensing, *About OTL - why we do it*, http://otl.stanford.edu/about/about_why.html?headerbar=0. (last visited Aug. 4, 2016). "Our primary way to ensure that developing countries can practice Stanford inventions is to forego the filing of patent applications in developing countries."

[119] *See supra* note 117 (IPEG)

In summary, the minimum condition for the pure patent licensing scheme to be at least of some use as a tool to disperse technology to a developing country is that the country attracts many patent applications and that there are therefore many patents registered which actually hinder technology transfer. The condition for success is that the country of a licensee has a reasonable accumulation of technological knowledge which would support the implementation and modification of the technology to be licensed. Countries which would meet the criteria are, for example, India in the area of pharmaceuticals, and China in the area of green technology, such as solar panels. For many other developing countries, pure patent licensing is mostly neither necessary nor helpful.

Pure patent licenses are not as risky for licensors as licenses involving know-how, though. The licensors can enjoy patent protection in the respective jurisdiction, and when infringement occurs, there is at least the option of taking legal measures to retrieve the damages. The strength and effectiveness of patent protection would depend on the country, however, by comparison with know-how, which needs to be kept secret in order to enjoy protection as an IP; patents are relatively easier to protect. Even when the protection in the jurisdiction of the licensee is insufficient, the licensor could still protect other markets (especially high priced market countries) by applying the local patent law.

2.2.2.2 Pure know-how license

A pure know-how license[120] refers to a form of licensing agreement that does not involve any patents as its subject matter, but only trade secrets. In other words, pure know-how licensing *enables* a licensee to implement a technology otherwise unknown and impossible to implement, unlike pure patent licensing, which merely *allows* the use of patented technologies. This form of agreement, comparing it with pure patent licensing, could be used by parties with different technical abilities, as it does not assume that the licensee has the ability to implement the technology independently of the licensor.[121]

The technology transfer agreement between Japanese and Chinese steel

[120] The term "pure know-how licensing" is taken from *supra* note 95.

[121] *See supra* note 111. *See also* the discussions above in "Pure patent licensing".

manufacturers in the 1970s and 80s[122] for building a steel manufacturing plant using the cutting-edge technology of the day used this type of arrangement. The Chinese steel industry had had only outdated facilities, did not possess the know-how for the new manufacturing process, and so needed the assistance of Japan.[123] The Chinese steel industry grew dramatically in the following decade, and by the 1990's had become the largest steel manufacturer in the world, with Baoshan Steel, a company established with Japanese technical assistance, being the largest steel manufacturing entity in the world.[124]

Despite the fact that know-how licensing is crucial as a tool for successful technology licensing into developing countries, there exists a problem: this type of technology transfer could be costly compared with pure patent licensing. Enabling a licensee without sufficient technological capability necessitates a long-term commitment

[122] The technology transfer project for building Shanghai Baoshan Gangtie Zongchang (上海宝山钢铁总厂), a new steel plant in Shanghai, was initiated by the Chinese government. A Japanese company, Nippon Steel Corporation, provided the technology to build the plant, modeled after two steel plants of Nippon Steel, one in Kimizu and another in Ōita. As mentioned in footnote 124, China has already built a steel plant in Wuhan with the assistance of Nippon Steel Corporation, but the Baoshan steel plant was different from the Wuhan plant in scale and the level of technology involved. This was one of the largest national projects in China of the century, with a great deal of government involvement. The project had an aspect of development assistance to China. As the cost of the project was overwhelming for China at the time (the cost of construction was roughly two times the annual budget for basic construction of the Chinese government), the project faced major difficulties in funding. The Japanese government and banks assisted China through providing loans. *See* Zhihong Liu, Hōsan Seitetsujo no Gijyutu Dōnyū wo Meguru Ishi Kettei (宝山製鉄所の技術導入をめぐる政策決定, AJIA KENKYŪ Vol. 49, No.2 (2013).

[123] In the 1970s, earlier than the aforementioned Shanghai Baoshan Gangtie Zongchang Nippon Steel Corporation transferred technology through a licensing agreement to China in order to build a steel manufacturing facility in Wuhan. *See* Zhihong Liu, Shinnittetsu no Chūgoku Senryaku – Hōsan Seitetsujo no Jirei wo Chūshin ni (新日鉄の中国戦略 宝山製鉄所の事例を中心に), KANKYŌ TO KEIEI, Vol.5 Issue 2 (1999). At that time, China did not have a patent system, therefore the licensing agreement must have been a pure know-how agreement at least with regard to sales of products in the Chinese market.

[124] *See supra* note 122 (Liu, 2013).

to the project, including extensive training and the supply of the necessary infrastructure, equipment or raw materials. Therefore, sufficient motivation and continued efforts on the part of both licensor and licensee is critically important if the project is to succeed.

Proprietary technology is owned predominantly by private companies or research institutes,[125] and to a lesser extent by universities and other public research institutes. The former are profit-oriented entities and do not consider licensing unless they can expect some kind of gains, which usually include direct financial revenue in both the near and far future, and an improved corporate image as a result of CSR activities. Providing sufficient incentives for companies to share the fruits of their investment is already difficult enough even when the licensee has the resources to pay, let alone when the licensee does not have enough resources. If licensors are not adequately compensated, financially or otherwise, they simply will not provide the technology.

Universities, on the other hand, have a different motive for licensing, which may lead to free licensing or licensing at a low price. They see their mission as the dispersal of technology so that people can benefit from their research. However, universities often do not have the know-how required to take their technology to the implementation stage so they themselves rarely implement in the field the results of their own research.

Due to the distribution of technology ownership and the motivation of the owners, purely pro bono based know-how licenses are difficult to realize. Creative licensing schemes which increase the availability of technology at an affordable price or for free and public policy measures to motivate the licensors and external assistance in the technology transfer process are therefore of extreme importance.

In addition, trade secret protection becomes an important issue. Protecting trade secrets in comparison with patented technology is difficult, regardless of the jurisdiction, as the proprietor of the trade secret must prove that the technology is obtained by unjust means, not as the result of independent research. If trade secrets were not adequately protected, the risk when transferring technology would be very high, as the proprietor would have to risk trade secret leakage. This could occur as a result of carelessness or willful theft by employees or spies. Once the secret is out, it may well be impossible to retrieve it. If leakage occurs not through unjust means such as spying or stealing but by

[125] *See* 1.6.7 Legislations, policies and technology licensing.

mere carelessness, the information is then surrendered to the public domain.

Despite all the aforementioned difficulties posed to potential licensors, know-how licensing could benefit a licensor in many ways. The benefits of licensing itself are discussed in Chapter 3, and will not be discussed in detail here but, to reiterate, a licensor may be able to gain access to markets otherwise unavailable to them for some reason; obtain royalty revenues; and benefit from the innovation stemming from the collaboration and further development efforts made by the licensee.

2.2.2.3 Mixed license

A mixed license refers to a form of licensing agreement where the subject matter of the license includes patented technology and trade secrets, including know-how. If the licensee could not implement the technology without a trade secret, a combination of the aforementioned two forms of licensing will be necessary.

Mixed licensing protects the "core" technology through patents and also enables the licensee to implement the technology with further assistance from the licensor.

Recently, the idea of package licensing, where a licensor licenses out the technology in a package that is ready to use, is becoming more common. One example is a technology transfer platform initiated by the World Intellectual Property Organization, WIPO GREEN. WIPO GREEN addressed the issue of the mere allowance of use not resulting in the actual dissemination of technology and proposed a technology platform which allows licensors to display their packaged technology ready to be transferred and implemented. This case is discussed further in Chapter 4.

2.2.3 Classification based on the number of parties and patents

The numbers of parties and patents concerned is also a criterion to consider when classifying licensing agreements.

2.2.3.1 Bilateral license

A bilateral license concerns only two parties – one licensee and one licensor. This would be the simplest model of licensing agreement. It could involve a single patent or a patent portfolio, or a package of technology and know-how as well as other relevant IP.

2.2.3.2 Multiple license

A multiple license refers to a situation in which a licensor licenses out the same technology to multiple licensees. This is in principle a bundle of bilateral licenses, but could potentially violate national or regional anti-monopoly rules.[126]

2.2.3.3 Cross license

Cross licensing refers to an agreement whereby two or more patent holders provide licenses to each other to use their patented technology in exchange for a license to use the other parties' patented technology. If one party has a better patent portfolio than another, balance fees will be paid by the "weaker" party to the "stronger" party.[127]

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[126] For example, in Japan, the CHITEKIZAISANKEN NO RIYŌ NI KANSURU DOKUSEN KINSHI HŌ JŌ NO SHISHIN [CHIZAI GAIDORAIN] [GUIDELINES FOR THE USE OF INTELLECTUAL PROPERTY UNDER THE ANTIMONOPOLY ACT] (Japan Fair Trade Commission, 2016, hereinafter "IP guidelines"), Part 3 (2)(ii) states that "restrictions on the scope of the use of technology, and selling price, sales quantity, customers or the like with respect to the product manufactured using the technology with the mutual recognition that the licensor and licensees are subject to common restrictions correspond to mutual restraint of the business activities of these entrepreneurs" and constitutes "unreasonable restraint of trade if it substantially restricts competition in the field of trade associated with the product." Furthermore, "imposing restrictions on licensees with respect to a technology resulting from research for the improvement or application of the technology hereinafter referred (to as "improved technology") or the adoption of an alternative technology is also an unreasonable restraint of trade if it substantially restrains competition in the field of trade associated with the technology." *translation available at* Japan Fair Trade Commission, *Guidelines: Japan Fair Trade Commission*, http://www.jftc.go.jp/en/legislation_gls/imonopoly_guidelines.html. (last visited Sep. 7, 2016).

[127] Brief for Chiteki Zaisan Kōtō Saibansho [Intellectual Prop. High Ct.] May 16, 2014, Hei 25 (ra) no. 10007, SAIBANSHO SAIBANREI JŌHŌ [SAIBANSHO WEB], http://www.courts.go.jp (Japan); Chiteki Zaisan Kōtō Saibansho [Intellectual Prop. High Ct.] May 16, 2014, Hei 25 (ra) no. 10008, SAIBANSHO SAIBANREI JŌHŌ [SAIBANSHO WEB], http://www.courts.go.jp (Japan); Chiteki Zaisan Kōtō Saibansho [Intellectual Prop. High Ct.] May 16, 2014, Hei 25 (2013)(ne) no. 10043, SAIBANSHO SAIBANREI JŌHŌ [SAIBANSHO WEB] by Katsuya Tamai as Amici Curiae at 4

The system of cross licensing is very efficient because once the structure is created by the companies, the only thing needed is an adjustment of balance fees based on the changes in patent portfolios. Considering that a typical licensing agreement would take a huge amount of time and labor by employees who could otherwise be redeployed, the reduction of negotiation costs is critical to industry. Cross licensing is, as one can see, a licensing system which could work only among patent holders with big enough bargaining power as displayed by their patent portfolios. Under this system, a developing country with not much of its own technology would not stand any chance of obtaining licenses from the patent holders.

Cross licensing was once a typical arrangement between large Japanese electronics companies when Japan dominated the electronics market and technology.[128] However, for multiple reasons, the practice was later substituted by the patent pool model to some extent.[129] First of all, non-Japanese newcomer manufacturers entered the electronics market and challenged the dominance of Japanese companies. Secondly, the number of companies conducting only research and development, without manufacturing, increased. Thirdly, the interoperability of machines became necessary as the information revolution went on, so practically every entity in the electronics market had to comply with technical standards on which all related products are based.[130]

Cross licensing cannot be used as a way of disseminating technology when the technological and innovative ability of one party is very low, as becoming a party to such agreements is feasible only for entities that have enough know-how or patents to contribute. Only when implementers of a certain technology become technologically developed to the extent that they can provide a meaningful improvement over existing technology, is it possible for them to enter into a cross-licensing agreement.

Cross licenses can also be granted non-voluntarily. In some jurisdictions, compulsory licenses for the technology of the basic patent can be granted to patent holders of a subsequent technology. The basic patent holder, in return, is entitled to ask for a license in return for the subsequent technology, and when both parties are granted a

[128] *See supra* note 127 3-4

[129] *See supra* note 127 4

[130] *See supra* note 127 4-5

license, this constitutes a form of compulsory license. These articles of the law pressures the parties to enable each other to use the other party's technology and result in better products in the market and more players in the market.

2.2.3.4 Pool license

A pool license is a bundle of licenses for many patents. The patents are owned by multiple entities and the license is offered as a bundle. Patent pools are normally created as an alternative to bilateral licensing, since without the (theoretical) possibility of entering into bilateral licensing agreements, a patent pool could be problematic under competition law.[131]

In the telecommunications field, patent pools often involve the use of a standard set by a standard setting organization (SSO) or other industry association or that has become a de facto standard due to the wide dispersion of a particular technology.

The model of the modern "pro-competitive" patent pool was developed during the MPEG-2 standard setting process at Moving Picture Expert Group (hereinafter MPEG), which is a working group of the International Organization for Standardization (ISO), based in Geneva, Switzerland. Because the standard consisted of numerous patents, the so called "patent thicket"[132] problem was expected to become a huge

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[131] For example, HYŌJYUNKA NI TOMONAU PATENT PŪRU TOU NO KEISEI NI KANSURU DOKUSENKINSHIHŌ JYŌ NO KANGAEKATA [PATENTO PŪRU GAIDORAIN] [GUIDELINES ON STANDARDIZATION AND PATENT POOL ARRANGEMENTS] (Japan Fair Trade Commission, 2005, revised 2007, hereinafter "Patent Pool Guidelines") states that they take into account, in cases of patent pools where non-SEPs are involved, "[w]hether or not patent holders pooling their patents can license out their patent without going through the pool … [a]nd the businesses can select necessary patents and accept license only for them." (Note 12). *Translation available at* Japan Fair Trade Commission, *Guidelines: Japan fair trade commission*, http://www.jftc.go.jp/en/legislation_gls/imonopoly_guidelines.html. (last visited Sep. 7, 2016).

[132] A patent thicket refers to a situation in which a certain standard (or technology) consists of too many patents and thus is difficult to use, due to the accumulative royalties of each patent and the inefficiency of negotiation. See MPEG LA, The standard for standards - about, http://www.mpegla.com/main/Pages/AboutHistory.aspx. (last visited Aug. 7, 2016).

obstacle to promoting the MPEG-2 Standard. In order to solve the problem, the MPEG-2-related patent owners decided to found a patent pool for the essential patents of the MPEG-2 standard.

In order to secure freedom of operation and define the boundaries of antitrust law beforehand, MPEG LA requested an issuance of a business review letter from the U.S. Department of Justice. The Department of Justice issued the letter on June 26, 1997, approving that, under the conditions given by MPEG LA and its shareholders, "it appears that the Portfolio is a pro-competitive aggregation of intellectual property."[133] This was the start of the modern pro-competitive patent pools in the United States and the same method of licensing was adopted in many subsequent standards both inside and outside the United States.[134]

Compared with cross licensing, a patent pool is open to parties without their own technology or with weak portfolios, as the agreement includes only monetary payments, not grants of patents in return. The non-discriminatory nature evoked the thoughts of practitioners and policy makers who now use it as a tool for technology dispersion in developing countries.

Nevertheless, a patent pool is still a pure patent license, without any transfer of the know-how necessary for its implementation. It does not enable a licensee to implement a technology, rather, it merely gives permission to do so. Therefore patent pools as such, without adequate surrounding technological assistance, which is necessary for implementation, has but limited use as a tool to disperse technology to areas of the world in which it is not available.

That being said, it is true that patent pools can actually benefit development in certain circumstances. Patent pools could be useful for companies in developing countries with the necessary expertise to implement the technology but without a strong patent

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[133] U.S. DEP'T OF JUSTICE, BUSINESS REVIEW LETTER FROM THE DEPARTMENT OF JUSTICE (Jun. 26, 1997.) as reprinted in U.S. Dep't of Justice, *Business Review Letters And Request Letters*, https://www.justice.gov/atr/business-review-letters-and-request-letters. (last visited Aug. 7, 2016).

[134] The example of MPEG LA is discussed further in Chapter 4.

portfolio. Since patents are valid for 20 years from the date of filing in most countries, a company that is catching up with a technology may not have a strong portfolio despite having current technological competencies. For such companies, patent pools are a way to gain access to technology and possibly even to license their technology to third parties when, in the future, they contribute to technological advancement in the field through the improvement and adaptation of the technology.

Since the implementation of a technology under different conditions yields different subsequent innovations, it may also result in an increase in the number and variety of future innovations in the field. Therefore the use of patent pools by developing country enterprises that operate in conditions different from those of developed country enterprises could possibly contribute to innovations in the field.

Patent pools could also be useful for less technologically advanced companies in developing countries as a basis for package knowledge transfer. For example, a potential licensee with expertise in fields X and Y but without sufficient knowledge or experience of field Z may need support when implementing the "Z" part of a patent pool which concern technical fields X, Y and Z. In that case, a pool license that allows the use of the technology plus individual know-how licensing may come to be useful.

Summarizing, the use of patent pools as a tool for technology transfer is limited, due to the fact that it does not include the "enablement" aspect of licensing and thus does not address the issue of the gap in technological abilities of developed and developing country enterprises. However it can provide a basis for the affordable implementation of technology and for supplemental technology transfer based on the pool license.

2.2.3.5 Open innovation and pool licensing

There is a trend in pool licensing for developers in a certain field of technology to develop technologies jointly and then license them out to third parties as well as using them themselves. The platform can pose some restraints on the terms and conditions of the licensing agreement so that it is in line with the objectives of the platform.

Developing country enterprises can benefit from these platforms in two different ways – by becoming a partner in research and development and being a part of the innovative process, or by becoming a licensee of the technology developed by the

partnership.

This licensing scheme is in line with a trend of open innovation[135], which is a new paradigm for invention in contrast with the old paradigm, closed invention. Open innovation requires that useful knowledge flow between institutions and be used, rather than be retained within a particular entity.[136] Individual research and development efforts should be made while considering the availability of relevant technologies in the external technology market, and the technologies of one company should be freely used by other companies as well.[137] The end product could be marketed by either the inventor or other companies, and, in the latter case, royalties are paid for the IP.[138]

Open innovation enables companies to collaborate on the work rather than making parallel, similar inventions just to circumvent existing patents in the field. The resources and efforts employed to develop "everything" by themselves can instead be used in part to make progress based on the findings of others.

Research and development efforts nowadays take place in more diverse geographical areas. This is beneficial for the increase and diversification of innovation, as innovation is dependent on the geographical, meteorological and cultural conditions of the place where it is born.

Companies need to diversify their products or services in the market, but it is not possible to open up each and every part of the innovation. Companies need a strategy so that they can build a profitable business model or differentiate their own products by using "closed" technology. Nevertheless, open innovation has the potential to optimize the research and development process partially, at least, by avoiding the duplication of effort and allowing more diversified parties to participate in the innovative process.

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[135] The term "open innovation" was coined by Chesbrough in his book, in his book HENRY WILLIAM W CHESBROUGH & JOHN SEELY BROWN, OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY (Harvard Business School Press 6th ed. 2003).

[136] *See supra* note 135 51

[137] *See supra* note 135 51-52

[138] *See supra* note 135 51-52

The licensing of the IP resulting from open innovation realized through such platforms can take the form of pool licensing, cross-licensing or bilateral licensing. The interesting feature of this kind of joint development plus licensing scheme is that the fruits of the joint development are shared by all licensees.

A prominent early example of the joint development plus licensing form is the Golden Rice Project. In this project, the core technology was developed by the founders and an agreement was established such that subsequent improvements could be added to the pool.

The subject matter of the license was the technology involved in producing Golden Rice, a provitamin A-containing rice variety created by genetic engineering.[139] The basic technology was owned originally by two scientists, Prof. Ingo Potrykus (then ETH Zurich) and Prof. Peter Beyer (University of Freiburg). In order to implement the technology, additional research and development was necessary.

To bring the technology to a ready-to-use stage, they assigned the patent to a for-profit crop protection company in the field, Syngenta, which cooperated in further research to make the latest version of the Golden Rice.[140] Syngenta retained exclusive rights to commercialize the technology, but they gave the inventors a license with the right to sublicense the technology for humanitarian purposes.[141]

In addition to licensing the technology out to developing countries, the pool

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[139] Golden Rice Humanitarian Board, *Golden Rice Project*, http://www.goldenrice.org. (last visited Aug. 7, 2016).

[140] Id.

[141] According to Id., "Humanitarian Use" means (and includes research leading to):
Use in developing countries (low-income, food-deficit countries as defined by FAO)
Resource-poor farmer use (earning less than US$10,000 per year from farming)
The technology must be introduced into public germplasm only.
No surcharge may be charged for the technology (i.e. the seed may cost only as much as a seed without the trait)
National sales are allowed by low-income farmers (in this way urban needs are also covered)
Reusing the harvested grain as seed for the following season is allowed (the farmer is the owner of his seeds

assembled the technologies generated by the sub-licensees who conducted further research and implement technologies in the field.[142] This gave all the other sub-licensees access to the most up-to-date technologies.

A more recent example is the WIPO initiated WIPO Re:Search, which provides a matchmaking platform for multiple entities to meet in order to collaborate in the development of new medicines and then license out the technology in the form of a pool. It aims not only at disseminating existing technology but also at enhancing cooperation in the research and development stages. Here, one can see a clear reflection of the ideals of open innovation. The participating entities conduct research on neglected tropical diseases, malaria and tuberculosis.

The form of cooperation or licensing is up to the parties; however, the licensing fee shall be free for research and development purposes and also for sales in the least developed countries.[143] Ninety-nine agreements have been made so far under WIPO Re:Search.[144] These examples are discussed further in Chapter 4.

2.2.4 Classification based on royalties

When a licensor grants a license to the licensee, something of value is usually given in return to the licensor. Sometimes it is a royalty payment, while in other cases the licensor may require licenses in order to be able to use the licensee's patents. In yet other cases, the licensor may intend to increase profits by licensing, but not directly as compensation for the use of the subject matter technology, and choose to license out the technology without any kind of payment in return.

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[142] Golden Rice Humanitarian Board, *Golden Rice licensing arrangements*, http://www.goldenrice.org/Content1-Who/who4_IP.php. (last visited Aug. 8, 2016).

[143] World Intellectual Property Organization, *Leading pharmaceutical companies & research institutions offer IP and expertise for use in treating neglected tropical diseases as part of WIPO re: Search*, http://www.wipo.int/pressroom/en/articles/2011/article_0026.html. (last visited Aug. 8, 2016).

[144] World Intellectual Property Organization, *Collaborations*, http://www.wipo.int/research/en/collaborations/. (last visited Aug. 8, 2016).

2.2.4.1 Royalties

Royalties refers to an agreement whereby one party pays a certain amount of royalty in return for a license. It resembles an assignment, the difference being that the ownership remains with the licensor and the scope of the license can be limited. This kind of arrangement allows licensees without their own technology to trade to gain access to third party technology, and licensors wishing to monetize their invention have an opportunity to profit from the technology transfer.

When a party is not able to bear the cost financially, which can be a problem, especially when the parties reside in different places and have different purchasing power, external funding, including loans, must be used.[145] The details of the decisive factors of royalties are discussed in Chapter 4.

2.2.4.2 Cross license

Cross licensing refers to a method of licensing whereby two or more parties license out their technology to each other. This is different from a patent pool, as a patent pool is a bundle of patents that can be licensed out to third parties without owning any patents in the pool, whereas cross-licensing is only between patent holders with a mutual interest in each other's patents. When the value of the licensed technology differs from one party to another, a party contributing less technology in terms of total value pays a balance fee. The details are discussed in 2.2.2.3 above.

2.2.4.3 Royalty free license

Royalty free licensing in this paper refers to an agreement in which the technology is provided free of royalties. The term "free licensing" is ambiguous and could refer to many forms of licensing, depending on what word "free" is modifying.

The practice of "free licensing" is seen frequently in the software industry.[146] The necessity for free licensing emerges primarily from copyright protected technologies such as software since, in most countries, copyrights are granted without registration. For copyright protectable technology, the right is granted regardless of the copywriter's will.

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[145] For this purpose, WIPO GREEN attempts to connect the contracting parties with third party funding institutions such as the Asian Development Bank. *See also supra* note 122.
[146] *See supra* note 48, Chapter 6

Therefore, the limitation or forgoing of some of the protection must be decided by the proprietor in order to make the technology available for free and/or under certain conditions, or else the potential implementer will be deterred from implementation for fear of copyright infringement.

For non-copyright protectable technology, the inventor could choose not to register rights such as patent rights for various reasons, such as the cost of an application and subsequent maintenance being too high, or a particular market is not of interest to the inventor. When inventions are not protected in a particular country, there is no need for licensing with the meaning of permission. In this case, it may seem unreasonable for licensors to choose to obtain and maintain IP rights at their own expense and yet allow their royalty-free usage.

The seemingly unreasonable practice has several underlying reasons. First of all, companies adopt this method of licensing when they want to disperse the technology (especially with regard to standards setting) and encourage investment in the infrastructure necessary for the technology. One example is the royalty-free licensing of basic patents for MISTY, an encryption algorithm developed by Mitsubishi Electric, which led to the worldwide standardization of the technology. Similar attempts have been made to license out royalty free technology in the eco-friendly vehicle industry, by Tesla Motors and Toyota Motor Corporation, due to the competition between eco-friendly car technologies (electric/fuel cell) and the need for infrastructure building for the wider dissemination of their technologies. These examples are discussed further in Chapter 4.

Another reason to keep a patent is for defensive purposes, in case the company receives allegations that it is infringing a third party's IP, or their patents are attacked by a licensee[147]. Some free licensing agreements have defensive termination clauses which enables a licensor to terminate the license if the licensee attacks the licensor's patent, or

[147] This can further be divided into cases in which the licensee attempts to invalidate the (a) licensed patents or (b) other patents held by the licensor. In a royalty free licensing scheme, the licensors may not have an incentive to invalidate the licensed patents anyway, so the latter becomes an issue.

if the licensee asserts their own patent against the licensor. Examples of these kinds of clauses are seen in Eco-Patent Commons ground rules.[148] The rules state that, when a party asserts their patent against the "pledger"[149], the pledger can terminate the license with respect to the alleger.

Whether or not having defensive termination clauses is allowed under national law (especially licensing regulations and competition law) is discussed further in Chapters 3 and 5. Assuming that a defensive termination clause is allowed, another problem is that the licensee may, because of the clause, be put in an inferior position for as long as they are using the license.[150]

When the licensee adopts a particular technology, the licensee invests in its implementation. Under an agreement with a defensive termination clause conditioning the continuation of the license to the non-challenge, licensees are put in a position in which they are compelled to take all the licenses for patents they may infringe during their activity, even if the patents are highly likely to be invalid. This means unnecessary

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[148] *See* Eco-Patent Commons, *Eco-Patent Commons Ground Rules*, http://www.wbcsd.org/pages/adm/download.aspx?id=314&objecttypeid=7. (last visited Aug. 4, 2016). "The Pledge is subject to a defensive termination provision. A Patent Pledger may, at its option, terminate and render void ab initio its non-assert with respect to a party if:
(a) That party is a member of the Commons and such party (or someone acting in concert with that party) asserts an unpledged patent, with a primary IPC class on the Classification List, against that Patent Pledger's infringing machines, manufactures, processes, or compositions of matter (including products, services, and components thereof) where such infringing items alone (or when included in a product or service)
reduce/eliminate natural consumption, reduce/eliminate waste generation or pollution, or otherwise provide environmental benefit, or
(b) The party is not a Member of the Commons and asserts any patent infringement claim against that Patent Pledger or our infringing machines, manufactures, processes, or compositions of matter (including products, services, and components thereof). In the non-assert, the "party" and the "pledger" includes their respective affiliates."

[149] A party who agreed to place their patent in the Commons.

[150] CYNTHIA CANNADY, TECHNOLOGY LICENSING AND DEVELOPMENT AGREEMENTS (Oxford University Press 2013) 186-187

additional costs for the licensees. It also imposes a burden on the general public, as the cost would be passed on to the consumers, and the invalidation of patents is obstructed. A monopoly based on an invalid patent burdens society, and invalidation is for the public good.[151]

Under another type of agreement conditioning the continuation of a license to the non-assertion of the licensee's technology (as is the case with Eco-Patent Commons), licensees are put in a position where they cannot assert any patents against the licensor, thus the licensors factually obtain the right to use any technology of the licensee freely. This could lead to a state of continued dependence and inferiority to the licensor.[152]

Free licensing is done with the intention of holding control of a technology to a certain extent while benefiting from other parties' actions in return for a free license. Of course, a royalty-free license is affordable, but the implications of the other terms may render a licensing agreement unfavorable for a potential licensee.

Free licensing, as long as it is voluntary, must offer some benefit to the licensor. It is not possible to require that a for-profit entity unconditionally license a patent free of charge. On the other hand, licensees shall not be "tricked into" or "forced into" unfavorable licensing terms due to lack of knowledge or bargaining power.[153] This is where licensing regulations intervene in order to balance the level of knowledge and bargaining power of the parties.

2.2.4.4 FRAND License

The term "FRAND" is well known to IP specialists around the world. The abbreviation stands for Fair, Reasonable and Non-Discriminatory, and to license under FRAND conditions implies that the licensor is willing to grant a license to anyone, under non-discriminatory terms, in return to the payment of a fair and reasonable royalty.

To what extent the "fair royalty" helps developing countries is unclear as,

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[151] For details on patent invalidation and their impact on society, Yuzuki Nagakoshi, *Quo Vadis—A Unique History of The Evolution of The Japanese Patent Invalidation Proceedings*, LES NOUVELLES Dec. 2015 (2015).

[152] *See supra* note 150 187

[153] *See supra* note 150 186

ultimately, the meaning of "fair" means is unclear. It is then up to the courts to determine whether a royalty is fair or not, if the parties fail to agree. If the courts are in favor of the licensee, they could decide on a lower royalty, and thus increase the affordability of the technology. However, if the courts are regarded as being imbalanced in terms of the decision from the viewpoint of a patent holder, the patent holder may simply result in avoiding FRAND declarations, thus putting licensee in an unfavorable position in the long term. The courts therefore need to achieve a fair balance in determining the level of royalties.[154]

Licensing under FRAND conditions has enabled everyone with the ability to implement the technology to obtain a license to produce standard, compliant products legitimately. This is undoubtedly one step towards enabling manufacturers in developing countries to enter the global market.

However, FRAND licenses do not necessarily guarantee that a developing country manufacturer could enter the market, because, as has already been stated repeatedly, a FRAND license is merely a bundle of pure patent licenses. Many potential developing country licensees do not have the know-how to manufacture any products at all, or they lack the additional expertise to make a product competitively in terms of cost or quality.

Assuming that a potential licensee has the technological ability to manufacture a product and seek licenses, the licensee would be burdened by having to seek to negotiate with many licensors. Licensing negotiations, as stated in Chapter 3, take the time and effort of people with legal expertise, and are costly even for multinational enterprises.

The efforts by FRAND-encumbered patent holders to jointly manage a patent pool work in favor of the licensee without negotiating skills or bargaining power, as it guarantees an opportunity for all to obtain a license. The downside of a FRAND-encumbered patent pool with regard to licensing in developing countries is that the royalty for using a patent is often a fixed price per product.[155] This means that a manufacturer

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[154] For more details on FRAND licensing, *see* Yuzuki Nagakoshi & Katsuya Tamai, *Japan without FRANDs? Recent Developments on Injunctions and FRAND-Encumbered Patents in Japan*, Apr. 2016 AIPLA QUARTERLY JOURNAL (2016).

[155] Otherwise the licensors would be subject to a violation of their FRAND commitment.

making lower priced products must pay the same royalty as a higher priced product manufacturer; so the cost of the royalty as a percentage of the total cost of manufacturing would be higher for low-priced product manufacturers.[156]

The word "non-discriminatory" in FRAND (fair, reasonable and non-discriminatory) conditions should not be interpreted to prohibit price differentiation when a situation justifies it. For example, when the royalty for the use of a patent is determined as a fixed price per product, a vast difference in a product's market price may justify price differentiation.[157]

Another justification could be a lower negotiation cost and royalty collection cost. Licensees in a specific country can adopt a strategy to cooperate and negotiate collectively. If the licensees lower the negotiation cost and collection cost through collective licensing, this could be a ground for differentiated treatment.[158]

Another justification could be differences in the IP portfolios of different If one

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See Finnegan et al., *Dealing with U.S. Patent pools as a Third party*, http://www.finnegan.com/ja/resources/articles/articlesdetail.aspx?news=f6933107-2e85-4ae7-b4b2-0f9dc7e0a6c4. (last visited Aug. 8, 2016).

[156] This problem does not occur when the product is sold in a different market, because the difference of the market may justify the difference in royalties.

[157] In order to fulfil their responsibility as an ethical global citizen, the model licensing agreement of Columbia Technology Ventures (the Technology Licensing Organization of Columbia University) includes a clause that states that royalties and other conditions could be adjusted in order to encourage the distribution of patented goods when Columbia is a licensor. "Global Social Responsibility. Columbia and Licensee agree to take into consideration the principle of "Global Social Responsibility" in performing the various activities contemplated under this Agreement. "Global Social Responsibility" means facilitating the availability of Patent Products in "Developing Countries" at locally affordable prices, under reasonable circumstances and terms to improve access to such Patent Products in such countries. "Developing Countries" shall mean those countries listed by the World Bank as "Low-Income Economies", as such list may change from time to time. Solely by way of example, the Parties may mutually agree to revise royalty rates, adjust fair market value, consider non-monetary consideration, and/or develop patent strategies in support of each Party's dedication to Global Social Responsibility."

[158] *See supra* note 155

has a strong IP portfolio and could negotiate a good cross licensing agreement because of that, it could be a reason to justify the differentiated royalties.

2.2.5 Classification based on the will of licensor

2.2.5.1 Voluntary license

The IP system is a mechanism not only to exclude others from using the technology, but also to enable only certain people to use the technology if the proprietor so wishes, under monetary or other compensations.

Proprietors often want their technology to be used by implementers who do not compete with the proprietor's own business due to being in a different in geographical area or because of a limited ability to produce in a market in return for a monetary payment. As already mentioned above, proprietors may license out in order to promote their own technology and expand the market. A company could also decide to license out their technology in order to create stronger competitors and so vitalize the market in the longer term. It is also possible that their clients want a certain amount of competition in the market and may require the patent holder to license out to a competitor in order to have an alternative supplier in the market.

Due to the aforementioned reasons, the vast majority of licensing agreements are voluntary. Voluntary licensing has an advantage over compulsory licensing: the agreements can reflect the needs of the parties so that agreements can create a win-win relationship between the parties.

Voluntary licensing can include long-term know-how transfer, in contrast with compulsory licenses, which often include only the permission to use a patented technology. Because of this important difference, it is often pointed out that compulsory licenses are not effective as a measure to increase the availability of goods or technology, since in many cases potential implementers in developing countries have neither the surrounding know-how nor the ability to adapt the technology by themselves.

2.2.5.2 FRAND license

FRAND licensing is also a voluntary license, but with obligations to license the technology out under fair, reasonable and non-discriminatory conditions to anybody who

wants a license, based on the prior FRAND commitment of the licensor. The implications of FRAND licensing, especially its non-discriminatory nature, for developing countries are positive rather than negative, but only to a certain extent.

By offering non-discriminatory licenses, there is now a chance for manufacturers in developing countries to join the market even where the implementation of standards is absolutely necessary. Without a FRAND commitment, absent anti-competition issues or other grounds that trigger a compulsory license, whether or not to grant a license is at the sole discretion of the licensor. The FRAND commitment entitles the licensee to ask for a license and to use it as a defense against injunctions for its otherwise infringing activities.

A problem for developing country implementers is that FRAND licensees are only assured that their implementation will not be regarded as an infringing act. They are merely allowed to use a technology, without any additional know-how being provided by the licensor. This factually excludes many potential implementers of low technological ability. FRAND licensing aids the technologically able with a weak patent portfolio (such as newcomers), but not technologically weak parties. Therefore, FRAND licensing may help to further the industrialization of already somewhat industrialized countries, but not countries that need assistance because they are in an early stage of industrialization.

Furthermore, entry into the market is one thing, but competing effectively is another. The difficulty of accessing additional technology not in the standard FRAND license still remains. The surrounding patents and know-how must be developed by the licensees or obtain by license from patent holders so that the end products are competitive in the marketplace.

2.2.5.3 License of right

A license of right is essentially a voluntary license but with obligations to license the technology out in a non-discriminatory manner based on the prior commitment of the licensor. It is similar to FRAND licensing in the sense that the licensors agree voluntarily to their patent rights being restrained so that the patented technologies will be used widely. However, a license of right differs from a FRAND license in that a license of right involves the government and allows administrative bodies to resolve disputes.

Not every country has a license of right system, and there are variations in the

systems of each country, as seen in detail in Chapter 5. However, the core of the system is as follows: the license of right is registered with relevant authorities, typically a patent office or intellectual property office and, once it is registered, the licensor can obtain a discount on the renewal fees of the patent[159]. When disputes arise, the relevant authorities have the right to decide on the terms of the license. Some countries require that the licensing fees be stated in the registration, but others do not.[160]

The license of right system provides many benefits for all parties involved. It gives licensors an opportunity to save on renewal fees and negotiation costs with individual licensees, especially if the prices are stated in the commitment submitted to the authorities. With respect to the licensee, the license of right makes it clear what the licensor expects. The system also gives the government the right to interfere in private licensing activities if the parties cannot reach an agreement.[161] This results in quicker and more affordable dispute resolution.

The strength and limitations of the license of right system is that it is a purely voluntary measure. The decision whether or not to register a patent is entirely up to the licensor. This means that there may exist a mismatch between what the technology seeker needs and what the technology owner wants to provide.

However, the voluntary nature of the license of right system works in favor of

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[159] In Germany, 50% discount is given. *See* PATENTGESETZ [PatG] [Patent Law] §23(1). In China, no such discount is provided in the proposed draft.

[160] The proposed revision of the Zhuanli Fa (专利法)[Patent Law] (draft for deliberation "Songshengao" (送审稿), published in Dec. 2, 2015） art. 82 requires that a licensee register their proposed licensing fees at the patent office. The German system does not request the licensors to do so.

[161] The proposed revision of the Zhuanli Fa (专利法)[Patent Law] (draft for deliberation "Songshengao" (送审稿), published in Dec. 2, 2015) art. 84 states that, where a dispute regarding licenses of right occur, a party can request the competent patent administrative department under the State Council for settlement. When one or more party is dissatisfied by the decision, the party can bring the case to the People's court. In Germany, where there is a dispute among the parties concerning the licensing fee, one or more parties can request the German Patent and Trademark Office (Deutsche Patent- und Markenamt, hereinafter "DPMA") to determine the royalty. PATENTGESETZ [PatG][Patent Law] §23(4)

technology transfer because it allows flexibility with regard to the conditions of the contract. The system provides an opportunity to contact potential technology providers and then leaves details of the contract up to the parties. The flexibility of the system could enhance technology transfer insofar as it should incentivize licensors to license their technologies at an affordable price on a non-discriminatory basis while providing a framework within which the licensor could disseminate its own technology effectively, with additional benefits arising from the fact that it allows the interference of the relevant authorities to make swift decisions on the terms of the agreement.

2.2.5.4 Compulsory license

Compulsory licensing is undoubtedly a powerful emergency measure to make needed goods available in developing countries. There are some cases which make it justifiable for the government to restrict the exercise of patent rights in order to cope with national emergencies. Compulsory licenses are often discussed within the context of patents and access to technology with regard to developing countries, but it is also a powerful tool to promote competition.

Many countries including Japan, Germany, China and Ghana have a compulsory licensing system. However, governments take a cautious approach when granting compulsory licenses. Japan and China have never granted a compulsory license to date (excluding denial of injunctive relief), and Germany[162] and Ghana[163] have only granted a compulsory license once in their history.

This is primarily because governments see compulsory licensing as an emergency measure, and recognizes the limited role it plays in the dissemination of technology and

[162] The Court previously granted a compulsory license once in 1991, but it was overturned by the Federal Court of Justice. *See* infra note 1268. *See* also, Bundespatentgericht, *Einstweilige Benutzungserlaubnis für AIDS-Medikament erteilt*, https://www.bundespatentgericht.de/cms/index.php?option=com_content&view=article&id=139%3A2016-09-01-13-36-42&catid=9%3Apressemitteilungen&Itemid=79&lang=en. (last visited Jan. 17, 2017).

[163] Samuel Anum, USE OF COMPULSORY LICENSE: COUNTRY PRESENTATION ON GHANA (Regional Seminar for Certain African Countries on the Implementation and Use of Several Patent-Related Flexibilities, 2013).

development of industry.

Compulsory licensing very often takes a form of pure patent licensing, which means that no know-how is provided. Therefore, as is always the case with pure patent licensing, it merely grants the allowance to use. A compulsory license would not enable a pharmaceutical company registered in a developing country to manufacture pharmaceuticals if it lacked the necessary know-how. Therefore, merely granting a compulsory license did not solve the issue of unavailability of pharmaceuticals in developing countries. This was the reason for modifying the TRIPS Agreement Article 31 by adding Article 31 bis, which allows the export of goods produced under compulsory licensing for pharmaceutical products for public health purposes.[164]

As stated before, a permission to use is not useful in cases where the ability to use does not exist. In order to build up local technological capacity, long term cooperation with technology holders is necessary.

Despite the limited use of the compulsory licensing system, its existence is extremely important. It serves as a deterrent to licensors who do not wish to license out technology voluntarily, regardless of the society's acute needs or the hindrance caused to competition.

2.3 Conclusions

This chapter explores the various characteristics of licensing agreements and the implications for the dispersion of technology to developing countries. Some licensing methods, such as patent pools or free licensing, have been promoted as having potential for the dispersion of technology; however, this chapter depicts a more complicated view, points out the potential limitations of such licensing schemes, and shows how a combination of various forms of licensing agreements could work better for technology transfer to developing countries.

Technologies and parties vary in each licensing agreement and there is therefore no one-size-fits-all licensing scheme. Nevertheless, this chapter concludes by providing the following general suggestions:

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[164] Amendment of the TRIPS Agreement Decision, Dec. 6, 2005, GENERAL COUNCIL WT/L/641

In terms of exclusivity, non-exclusive licenses could be granted to unlimited number of licensees and therefore seem to suit the purpose of wide dispersion of technology. However, when licensees have to invest in the implementation or marketing of products that embody technologies, exclusivity may be justified so that licensees can recoup their investment. The protection of the rights of sole licensees differs from country to country and therefore sole licenses should be used cautiously to avoid being denied the protection that licensees expect.

As for the subject matter, pure patent licensing works in that it allows already technologically advanced parties to use the technology. It increases the number of actors in the market by allowing access to more implementers, but does not enable a potential actor in the market to reach a level at which they could become active players in the market. Know-how is often needed to disseminate technology and then enable entrepreneurs to implement it.

Collective, non-discriminatory licensing in the form of patent pools has also been proposed as a way to disseminate technology. Since many of the existing collective technology licenses only contain patents in their packages, the aforementioned problem of potential implementers in developing countries not having know-how still exists. In order to use these collective licensing schemes as a tool for the dispersion of technology, collective licenses ought to be modified in such a manner that licensees can seek additional assistance for implementation. Matchmaking platforms for joint research provide an opportunity for developing country entities to be partners with companies with a technological advantage and learn from them within the framework of the agreement. These platforms also enables third parties to access technology in developing countries through the affordable and non-discriminatory licensing of the fruits of the collaboration.

Concerning payment for the license, the affordability of the price of the license is not the only factor that determines whether the license is truly favorable for developing countries. Affordable licenses would aid in the dissemination of technology, but may have negative consequences in the long run, depending on other parts of the license that are aimed at controlling the licensee to some extent. These clauses may have some negative implications regarding the use of subsequent innovations introduced by the licensee. However, neither should licensors be put in a defenseless position because of the well-

intended grant of license, and licensors should be entitled to control their technology continuously, even if some restraints are posed due to prior action. On the one hand, praising “affordable” licensing efforts without looking into the agreements and their implications would be naïve but, on the other hand, criticizing the restrictive clauses without considering the risk and “sacrifice” of licensors would be too harsh.

Ordinary voluntary licenses would provide the greatest flexibility to the parties, in contrast with FRAND licenses or licenses of right, let alone compulsory licenses. FRAND declarations and registering to grant a license on a non-discriminatory basis at the relevant authorities are voluntary actions of private entities wishing to disseminate their technologies and lower the transaction cost in return for an obligation to grant licenses at an affordable price on a non-discriminatory basis. These actions allow easier access to technology, but there remains the problem of parties unable to utilize the opportunity for lack of know-how. Compulsory licensing attracts wide attention in the international community, but it has not commonly been used in the target countries, not even in developing countries. None the less, the existence of the system can serve as a big stick that prevents patent holders from abusing their own rights.

In the next chapter, the discussions of the licensing practices of private parties are furthered by exploring typical clauses that constitute a licensing agreement and their implications for the dissemination of technology.

Chapter 3. Technology Licensing Agreements – Components and their Functions

Technology licensing typically involves an agreement between the owner of the intellectual property and the prospective or current user of the IP that permits the use of the IP. This agreement is referred to as a technology licensing agreement. "Technology licensing agreements are binding contracts between two or more parties with legal identities … in which one party (the licensor) that owns IP consents to the use of IP owned by another party (the licensee)"[165]. The licensor allows or enables the use of technology[166] by the prospective implementer of the technology in return for a monetary payment or a license for technologies the implementer holds (cross licensing), or any other obligation to which the parties agree.

The first part of this chapter compares the means of permitting the use of, or transferring, technology and highlights the characteristics of licensing. Typical time frames and workflow of the negotiation including the preparation process are then illustrated in order to provide an understanding of the process of creation of such agreements. The second part focuses on the individual elements of a technology licensing agreement in order to provide an overview of how the rights and obligations of each party are determined, and the implications for the dispersion of technology to developing countries. In order to list all important clauses, the author referred to the list of clauses provided in Cannady (2013).[167]

3.1 Licensing in comparison with other means of permitting use of technology or transferring technology

Licensing is not the only way to transfer technologies or permit the use of

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[165] CYNTHIA CANNADY, TECHNOLOGY LICENSING AND DEVELOPMENT AGREEMENTS (Oxford University Press 2013) 3

[166] Cannady points out in *supra* note 165 that a license does not grant an affirmative right to use a technology. If the implementation violates a third party right, the implementer could be sued by the third party. As she puts it: it is merely a "*covenant not to sue* the licensee".

[167] *See supra* note 168

technology. One may also sell the technology, declare non-assertion, or forego patenting so that everyone can freely use the technology. The various options for technology transfer and when to use each option are discussed below.

3.1.1 Sale

Selling the patent or trade secret is one way of transferring technology. When selling a patent, the ownership is transferred from the seller to the buyer and the seller does not keep any rights to the patent.[168] It is, in principle, a one-time-only transaction, and only a short-term relationship is expected to exist between the parties.[169]

A technology owner without any interest in being involved in the implementation of the technology may prefer to sell it.[170] For example, a company wishing to close down an operation in some field may want to sell their technologies, since they are no longer interested in the technology in any way.

3.1.2 Licensing

Licensing IP is another way of transferring technology. Licensing means that the ownership of the technology is kept by the licensor but the licensee is allowed and/or enabled to use the technology.

Compared with selling, licensing creates a long-term relationship between the parties[171] because the contract continues for a certain period of time defined in the contract unless the contract is a one-time patent licensing deal with an agreement to a lump sum royalty that is not contingent on the success of the licensee. The power granted to the recipient can also be more flexible – the scope of the license and the terms or other conditions can be arranged freely between the licensor and the licensee. These are aspects of licensing that may appeal to both parties.

From a licensor's perspective, licensing enables the licensor to maintain

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[168] WORLD INTELLECTUAL PROPERTY ORGANIZATION & INTERNATIONAL TRADE CENTRE, EXCHANGING VALUE NEGOTIATING TECHNOLOGY LICENSING AGREEMENTS A TRAINING MANUAL (WIPO Publication, 2005) 17

[169] *See supra* note 168

[170] *See supra* note 168

[171] *See supra* note 168 18

possession of the technology and therefore to control it. Sometimes companies even allow the use of technology free of charge, while continuing to pay in order to apply and maintain the patent.[172] This is because companies want to control the market by controlling the technology[173], or want to keep the patent as a negotiation card against other patent holders in the field.[174]

Another reason for licensing rather than selling is to generate income from their technology in technological or geographical areas which they would not otherwise be able to enter.[175] For example, if one technology developed by a car manufacturer could also be used to manufacture rockets, the car manufacture could be much better off by licensing out the technology rather than not doing anything, since the car manufacturer could obtain royalties without nurturing competitors in its own market for cars. The entry barrier for developing rockets, for car manufacturers, is very high, so using the technology directly for this purpose may not be feasible.

The production capacity of any company is limited and the barriers for foreign companies to enter some markets are often high, especially for SMEs. Licensing could relieve a company of the burden of expanding its production capacity itself, or entering an unknown market, by allowing others to manufacture products using the company's technology under license.

Licensing also enables licensors to benefit from the long-term relationship that results from it. Implementation of technology often yields subsequent inventions, as the necessity of improvement in order to be applicable in the field can stimulate improvements. When licensing agreements are drafted in an appropriate manner, licensing secures licensors' access to improvements in the technology, enabling the

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[172] Examples of these licensing agreements, the licensing of KASUMI and "green" car related technologies are described in Chapter 4.

[173] *See supra* note 168 19

[174] Eco-Patent Commons, *Frequently asked questions*, https://ecopatentcommons.org/frequently-asked-questions#QA17. (last visited Aug. 9, 2016).

[175] *See supra* note 168 19

licensor to be continuously at the forefront of the development of the technology. By contrast, if the technology is not licensed out and parallel inventions are made, then there would be competition between the technologies instead of one licensor being able to dominate the core technology.[176]

Licensing can also result in healthier competition in the product market with cheaper and better products resulting therefrom. Economic theory shows that when competition exists, the price falls and it brings more consumer surplus.[177]

Better products in a particular market can thus expand the market itself. This could result in the share of individual companies diminishing but, if the whole market expands, can result in increased profits.

On the other hand, licensing carries a certain risk from the licensor's perspective. Licensors could be held liable for the technology or in some cases even for the end product.[178] A careful drafting of the agreement could mitigate the risk to a certain extent, but there exists national laws that limit the freedom of contract.[179]

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[176] This is also one of the reasons why technology licensing sometimes causes anti-competition concerns.

[177] Policonomics, *Perfect competition II: Economic surplus*, http://www.policonomics.com/lp-perfect-competition2-surplus/. (last visited Aug. 9, 2016).

[178] *See* for example, Melissa Evans Buss, *Liability and Intellectual Property Licensors*, Volume 27 Issue 1 WILLIAM MITCHELL LAW REVIEW (2000) 311, discussing the situation in the United States. "The original designers and developers of technology, who are not the actual manufacturers of the product, and independent designers may become defendants in a products liability lawsuit where the product or process produced by the manufacturer harms a third party. The injured third party may claim that the product was defective in the original design provided by the designers and thus, as the original designers, they should be held liable."

[179] For example, *see* Hetong Fa (合同法)[Contract Law] (enacted in 1999, hereinafter "Contract Law") art. 349 The transferor in a technological transfer contract shall guarantee its legitimate ownership over the technology provided and guarantee the technology provided to be complete, errorless, effective, and capable of attaining the contracted goal.

As mentioned above, licensing can result in nurturing competitors.[180] When a licensor and a licensee share the same market, geographically, technology-wise and product-wise, licensing may result in increased competition in the product market. This could be good for the market and the company in the long run, but companies would often have at least a short-term incentive to keep their technology to themselves. The desire to restrict or control the use of technology is one of the primary reasons why technology owners apply for patents or to keep their technology as a trade secret. Therefore, giving up a monopoly requires substantial consideration on the part of the licensor.

From a licensee's perspective, licensing, compared with purchasing a technology, is a better way to receiving long-term technical assistance or establishing a joint research relationship. The licensor benefits from successful implementation, or more precisely from increased royalty income, so the licensor has an incentive to cooperate with the licensee in the implementation stage. [181]

Licensing also reduces the risk when evaluating a technology or end product without knowing exactly what amount of revenue it could generate, as the parties can define the royalty in a manner contingent on the commercial success of the product.

There are downsides to licensing also from a licensee's perspective. When one makes a product based on a license, a part of the destiny of the product is dependent on the "mercy" of the licensor.[182] For example, if the period of the technology licensing contract is three years, and the licensee who manufactures their own product using the technology wishes to continue producing the product, the consent of the licensor to renew the contract is required. If the licensor disagrees regarding renewal of the contract[183] and if manufacturing is to continue beyond the initial three-year contract period, the licensee will be faced with an immediate difficulty.

There may be an additional risk when the technology is not mature enough for it

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[180] *See supra* note 168 19

[181] *See supra* note 168 18

[182] *See supra* note 168 19

[183] Whether or not "disagreeing" would be considered legitimate would depend on each case, as the denial of the license may violate antitrust regulations.

to be applied in a commercially feasible manner.[184] If the agreement is drafted in a manner that obliges the licensee to pay royalties regardless of the revenue generated (such as minimum royalties), the licensee will be burdened with the payment of royalties until commercial application is made possible.

3.1.3 Declare non-assertion

A unilateral declaration of non-assertion (apart from what is being done in accordance with a licensing contract) is different from licensing in the sense that it does not lead to any legal relationship between the user of the technology and the owner of the technology.[185] It merely declares unilaterally that the patent owner does not intend to assert one or more patents. It is differentiated from free licensing insofar as the free license is still a license and can trigger a relationship between the parties, such as liabilities.[186]

This, of course, would not enable the technology owner to obtain licensing fees, but would encourage the rapid dissemination of technology. Therefore, some patent owners forego voluntarily the opportunity to benefit financially from their own invention.

There are some benefits for technology owners that first patent their technology using their own resources and then declare non-assertion (rather than abandoning the patent). First of all, it can lead to increased profits. The patent holder can benefit from the sales of accompanying products of the free technology, such as an upgraded version of the technology, or from the tools needed to use the technology. In other cases, the patent holder may increase profits by obtaining a market advantage, thereby enabling the technology to become a de facto standard. Non-assertion requires less time and effort by comparison with signing and negotiating a licensing agreement, so a non-assertion declaration may aid in cutting costs.

Another benefit is that the patent holder can still control the technology. For example, one could declare non-assertion for a particular purpose (e.g., for humanitarian

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[184] *See supra* note 168 19

[185] However, declaring non-assertion may result in the exhaustion of IP rights. *See*

[186] *The Use of Nonassertion Covenants: A Tool to Facilitate Humanitarian Licensing, Manage Liability, and Foster Global Access*, *in* IPHANDBOOK OF BEST PRACTICES ¶ 7.6. (ANATOLE KRATTIGER ED., 2012) (2007).

purposes, or for supplying products for least developing countries) and leave open the possibility of commercial exploitation for other purposes.[187] Another use of non-assertion encumbered patents is to keep them for defensive purposes, namely to leave open the possibility of defensive termination of the non-assertion.[188]

The use of defensive termination clauses is limited to a certain extent by antitrust law and licensing regulations. For example, the Japan Fair Trade Commission issued a hearing decision against Microsoft Corporation that demanded that it cease the practice of forcing the execution of agreements containing the non-assertion clause and that it not conduct similar acts in the future.[189] Licensing regulations in some countries require that a licensing agreement not include such clauses.[190] The TRIPS Agreement allows member states to take appropriate measures to prevent or control anticompetitive licensing practices, among which licensing conditions preventing challenges to validity are included.[191]

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[187] This idea is for example proposed by Eco-Patent Commons. *See* Eco-Patent Commons, *Frequently asked questions*, https://ecopatentcommons.org/frequently-asked-questions#QA17. (last visited Aug. 9, 2016).

[188] *See supra* note 187

[189] JAPAN FAIR TRADE COMMISSION, HEARING DECISION AGAINST MICROSOFT CORPORATION (TRADING ON RESTRICTIVE TERMS RELATING TO WINDOWS OEM SALES AGREEMENTS) Sep. 18 2008

[190] Technology Transfer Regulations (1992, Ghana) 4. Where a technology transfer agreement contains any of the clauses specified in this paragraph or contains a clause the effect of which is the same as or similar to any of the said clauses, that clause shall be inapplicable and unenforceable – (j) clauses which are designed to prevent the transferee from contesting or assisting in determining, either administratively or by means of judicial proceedings, the validity of industrial property rights claimed or secured in Ghana by the transferor;

[191] TRIPS Agreement, art.40. 2. Nothing in this Agreement shall prevent Members from specifying in their legislation licensing practices or conditions that may in particular cases constitute an abuse of intellectual property rights having an adverse effect on competition in the relevant market. As provided above, a Member may adopt, consistently with the other provisions of this Agreement, appropriate measures to prevent or control such practices, which may include for example exclusive grant-back conditions, conditions

Another important benefit for the licensor is improvement of a company's image by contributing proprietary knowledge to the public. Especially when the contributed technology relates to public health, environment or is related to other important humanitarian issues, companies can receive much attention and high praise from the community.

3.2 Licensing negotiations

3.2.1 Preparation for the Negotiation

The agreement is usually preceded by intensive preparatory work that takes at least around 90 days, according to a licensing specialist[192], and extensive negotiations[193] between the contracting parties.

Preparation for licensing agreements are needed in order to clarify for each party what they want and do not want from the implementation of the prospective licensing agreement. Preparatory works for licensing negotiations is of extreme importance.[194] Though the bargaining power of parties are more or less decided by the time the negotiation starts, one can narrow or widen the bargaining power gap by being well prepared.[195]

The length of time for preparatory works varies from case to case. For example, Cannady [196] suggests a 90-day preparation schedule. The preparation process typically starts with selection of a negotiation team, consisting of a leader who understands the overall business strategy[197], a technical expert, a lawyer, a marketing expert, and a financial expert.[198]

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preventing challenges to validity and coercive package licensing, in the light of the relevant laws and regulations of that Member.

[192] *See supra* note 165 89

[193] *See supra* note 165 97-98, which illustrates a model schedule of licensing negotiations starting and concluding within one and a half month. In some areas of technology, negotiations can extend up to two to three years. *See supra* note 79.

[194] *See supra* note 168 82

[195] *See supra* note 165 89

[196] *See supra* note 165 89

[197] *See supra* note 194 83

[198] *See supra* note 165 91

Then, the business objectives of the licensing agreement should be discussed and agreed.[199] The business objectives that needs to be considered would be, for example, the aim of the licensing (e.g., revenues and commercialization) how to profit from the licensing agreement, what would be considered successful, unsuccessful or unacceptable results, the subject matter and the type of IP as the subject matter, the degree in which improvement by the licensee is allowed, the ownership of the improved technology, and so on. [200]

After the business objective is clarified, the bargaining power of both sides should be ascertained.[201] The factors influencing bargaining power, such as the financial strength of the other party, the commercial applicability of the subject matter, the state of the market, the technical skills, the strength of the subject matter IP, alternative partnership possibilities, and timing factors, all need to be assessed.[202] This can be done by contacting the technically informed employee of your own party, accessing publicly disclosed information, or by simply asking the other party.[203] This process should be followed by checking and strengthening the IP assets of their own side and examining the potential weakness of the counterparty's IP.[204]

Before the first meeting, documents including correspondences, relevant technical information, information about the other party, copies of relevant patents or applications and so on, should be gathered by the leader. [205] It is important that all the confidential document displayed to the other party be protected by a non-disclosure agreement and that confidentiality is maintained.[206] An internal term sheet[207], which is a document

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[199] Jennifer Giordano-Coltart & Charles W Calkins, *Best practices in patent license negotiations*, Vol. 25 No. 12 NATURE BIOTECHNOLOGY (2007) 1

[200] *See supra* note 165 91-93

[201] *See supra* note 199 1

[202] *See supra* note 165 91-94

[203] *See supra* note 165 93-94

[204] *See supra* note 165 95-96

[205] *See supra* note 165 95-96

[206] *See supra* note 165 99

[207] It can also be called "heads of agreement" or a "proposed basis of agreement." *See supra* note 194 83

outlining the proposed terms and conditions of the agreement, must also be prepared. It includes the top line, in other words the first proposal, and the bottom line, or the least favorable conditions that the negotiators are authorized to accept.[208] This is a document that should not be shown to the other party. When necessary, the document can also be converted into an external term sheet[209], which is a document stating the major issues of the licensing deal that is sometimes provided for the other party at the beginning of the negotiation.[210]

Interim agreements, especially non-disclosure agreements shall also be considered.[211] A concise[212] internal term sheet would make negotiating more rapid and easier by comparison with negotiating on the basis of a lengthy draft agreement.

The exhibits, also called as appendices or attachments, should also be drafted. They typically includes a Statement of Work (SOW), a specification and "listings of long lead-time items and equipment and materials".[213]

Finally, no later than a week before the first meeting, a licensing agreement should be drafted.[214] When the parties' representatives first meet (a courtesy meeting), the negotiation schedule must be set. The example given by Cannady (2013) gives a three-month schedule consisting of four meetings, but the time frame can vary.

3.2.2 Negotiation

There are different approaches to framing the negotiation at the beginning of the initial meeting, as Cannady (2013) puts it, a "price frame", a "tech frame", an "empty frame" and a "business objectives frame.[215]" The difference is in the starting point for the discussion, and it determines what the main issue is. Taking the business objective frame and starting the discussion with how to commercialize the technology and benefit

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[208] *See supra* note 165 99

[209] *See supra* note 165 99

[210] *See supra* note 199 1-2

[211] *See supra* note 165 100-103

[212] The term sheet should be two to five pages long. *See supra* note 194 83

[213] *See supra* note 165 103

[214] *See supra* note 165 103

[215] *See supra* note 165 458-459

from the proposed agreement could be good, as the parties would then understand the business objectives of the other party and their plan to profit from the licensing agreement.[216] If there is insufficient matching, a resetting of the business objectives is necessary, or else the parties are most unlikely to be able to reach an agreement.[217]

At the beginning of the negotiation, each party can give a presentation on the business objectives and benefits and then go into the subject matter, the scope of the license, and the forms of cooperation (licensing, joint research, etc.) derived from the objectives and benefits.[218] If the business objectives of the two parties are not complementary, it may be better not to enter into further negotiations.[219] It is an advantage to present first, given that one is well-prepared, because it offers the advantage of framing the discussion.[220]

3.2.3 Non-disclosure agreements and other interim agreements

When negotiating for a licensing agreement, it is common practice for the parties to sign a non-disclosure agreement (NDA). It protects the confidentiality of secret information disclosed during the negotiation for the purpose of providing sufficient knowledge for the other party to sign the agreement.[221] An NDA could even restrict the disclosure of the existence of the licensing negotiation itself.[222]

The NDA should be carefully drafted, as the value of a trade secret stems from its secrecy.[223] The NDA should first of all include the absolute duty not to disclose to third parties, rather than merely posing a "duty of care that it uses to protect its own information

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[216] *See supra* note 165 459

[217] *See supra* note 165 460

[218] *See* supra note 165 458-461

[219] *See supra* note 194 85, which states that sometimes the "win-win" outcome could be "for the parties **not** to reach an agreement". *See* also *supra* note 165 460

[220] *See supra* note 165 461-462

[221] *See supra* note 165 465-466

[222] TAKAO YAMAMOTO, CHITEKI ZAISAN CHOSAKUKEN NO RAISENSU KEIYAKU NYŪMON (Sanseidō 2nd ed. 2008) 37

[223] *See supra* note 222 16

against disclosure" or a duty to provide "reasonable care", as one cannot know how technology is protected in a firm or what the other party believes to be "reasonable".[224] Such vague clauses could result in a prolonged breach of contract trials.[225]In order to clarify further the NDA, a clause requiring the return of all provided materials containing the trade secret[226] or prohibiting the copying of materials provided can also be inserted.[227]

The NDA should also restrict the use of technology to the purpose of "the evaluation and negotiation of the agreement", instead of defining the purpose vaguely as "for the project", or not restricting the use at all.[228]

One may resist such clause due to the difficulty on the part of engineers in accomplishing the task of engaging in R&D work without using information which has already become a part of their knowledge.[229] However, when a trade secret is disclosed without limitations, it actually means that the owner of the trade secret has provided a license to use the information.[230]

Residual clauses that allow the future use of residual knowledge can also be added in order to avoid the situation that the recipient of a certain trade secret is held liable for using the technology without the purpose of the evaluation and negotiation of the agreement. On the other hand, this clause could also lead to future disputes, since it is very difficult to formulate a clear definition of "residual knowledge."[231]

Clauses that restrict access to the confidential information to individuals on a need to know basis are also possible elements of a NDA.[232] One could even go so far as to sign an individual NDA with the details of all the individuals with access to information, in order to be able to hold the individuals directly liable if a breach of confidentiality occurs.

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[224] *See supra* note 165 466-467

[225] *See supra* note 165 467

[226] *See supra* note 223 36

[227] *See supra* note 223 38

[228] *See supra* note 165 467

[229] *See supra* note 165 467

[230] *See supra* note 165 467

[231] *See supra* note 165 467

[232] *See supra* note 165 468*, See also supra* note 222 33-34

[233]

Given that drafting the NDA is merely one of the preparatory tasks necessary for negotiation, confirmation that the parties are not obliged to enter into an agreement may be added into the NDA.[234] If a party wants to mitigate the risk of losing the opportunity to negotiate with another partner, one could add a clause stating the deadline for deciding whether or not the party would like to take a license.[235]

One could also limit the applicability of the NDA to documents marked as "Confidential", granted that the marking of documents is executable. [236] In practice, the understanding of what constitutes a trade secret may differ from one party to another, and it could become a cause of a conflict.[237] However, it is often the case that disclosure is inadvertent,[238] so one needs to evaluate the risk of inadvertent disclosure before agreeing to a certain clause.[239]

The choice of venue and law is also an important consideration, given the cost of litigating in a distant location.[240] When the parties are in a distant location, the choice of venue therefore often reflects the relative bargaining power.[241]

In order to prevent the disclosure of secrets without protection and also to avoid spending time discussing the NDA, the NDAs should be agreed to and signed before the start of substantive discussions.[242]

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[233] *See supra* note 222 16
[234] *See supra* note 222 34-35
[235] *See supra* note 222 35
[236] *See supra* note 165 468
[237] *See supra* note 222 37
[238] *See supra* note 222 37
[239] *See supra* note 165 468
[240] *See supra* note 165 468
[241] *See supra* note 165 468
[242] *See supra* note 165 466

Although NDAs are necessary and effective tools to prevent trade secret leakage when disclosing trade secrets to potential licensees, the risk of misappropriation of trade secret exists. A simple-sounding question, whether a breach of an agreement has occurred or not cannot be determined easily.[243] Once a conflict occurs, it tends to be prolonged due to the complexity of the issue and even, on occasion, emotional factors such as company pride.[244]

NDAs also serve as a shield for the recipient of a trade secret if the clauses state the extent to which the recipient is held liable for leakage. In practice, there are cases where the NDA states that the recipient is held liable for "unlimited damages and loss". [245] This would bring a significant risk to the recipient of the technology, especially if the definition of damages and loss is unclear.[246]

When the parties move on to the substantial negotiation, they need to evaluate the technology of the other party by working together for a certain period of time. [247] Under these circumstances, evaluation agreements, which are similar to an NDA but allow closer cooperation between parties, are signed. [248]

When prototypes are planned to be made, prototype agreements come to use. [249] The agreement will state the "allocation of costs and duties, payment of expenses, and IP ownership and rights". [250] Interim agreements should be made when the parties start working together for a limited period of time before the agreement is finalized. [251] These two agreements are complex and involve a mature discussion, so substantial issues should be decided tentatively.

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[243] *See supra* note 233 45
[244] *See supra* note 233 45
[245] *See supra* note 233 46
[246] *See* supra note 233 45-46
[247] *See supra* note 165 469
[248] *See supra* note 165 469
[249] *See supra* note 165 469
[250] *See supra* note 165 469
[251] *See supra* note 165 469

Other agreements or quasi-agreements that may come up are letters of intent, memoranda of understanding (MoU) and standstill agreements.[252] Letters of intent and MoUs are often confusing in terms of their legal status, as to whether or not they are binding. In some jurisdictions they are treated as legally binding. Therefore, they should be used only in situations where there is the need to do so, for example, when announcing the launch of a new product or submitting an application for funding.[253]

Standstill agreements are agreements to negotiate on an exclusive basis.[254] These deprive the bargaining power of the party with the obligation of not negotiating with other parties.[255] This should generally not be agreed to, and if the parties sign a standstill agreement, the term should be very short.[256]

3.2.4 Withdrawing from a negotiation

When it becomes clear that not concluding licensing negotiation would be better than concluding a licensing agreement, the parties should withdraw from the licensing agreement swiftly.

Reasons for withdrawing from licensing negotiations are the impossibility of reaching the anticipated business objective of the licensing, the existing and potential disadvantages exceed the advantages of the agreement, or else disagreement on the material terms, despite the efforts of both parties.[257] Early withdrawal is beneficial when it has become clear that it is no longer possible to reach an agreement.

During the course of the negotiation, trade secrets are often disclosed to the other party.[258] This may result in litigation, as NDAs cannot guarantee that all the trade secrets will be kept secret, nor that the residual knowledge in the head of the technical personnel

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[252] *See supra* note 165 469-470

[253] *See supra* note 168 31

[254] WORLD INTELLECTUAL PROPERTY ORGANIZATION, SUCCESSFUL TECHNOLOGY LICENSING (2015) 13

[255] *See supra* note 165 470

[256] *See supra* note 165 470, which suggests the period to be 30 days.

[257] *See supra* note 165 476

[258] *See supra* note 165 476

of the other party will not be utilized.[259] Another possible trigger of litigation is joint development. Once joint development starts, new technology evolves and a dispute may arise over the ownership or the use of the developed technology.[260]

3.3 Elements of a Licensing Agreement

In the following section, individual components of licensing agreements are described and the implications of those components regarding the parties' obligations are discussed, especially with regard to international technology transfer to developing countries.

3.3.1 Recitals

A recital explains the context of the technology licensing agreement. It typically includes the legal names and the business addresses of the parties[261], and can include the effective date of the agreement and relevant background information,[262] including the characteristics of the companies. They are found in almost every technology licensing agreement, but can nevertheless be omitted[263].

3.3.2 Definitions

In the "definition" section, frequently used terms are defined in order to avoid future conflicts. Unlike the recital, it is drafted to be binding and to set forth the conditions of the contract.

Whether or not the agreement requires a definitions section depends on the complexity of the contract.[264] For simple contracts, the section may not be required

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[259] *See supra* note 165 477-78

[260] *See supra* note 165 478

[261] *See* Donna Bobrowicz, *A Checklist for Negotiating License Agreements*, *in* IP HANDBOOK OF BEST PRACTICES 1133–1152 (Anatole Krattiger ed.) 1134. *See supra* note 165 215

[262] *See supra* note 261 (Bobrowicz) 1134

[263] *See supra* note 165 113

[264] *See supra* note 261 (Bobrowicz) 1135

because the definitions can be defined in the body.[265] In any case, commonly used words such as "effective date" can be defined in the body rather than the definition, for example "the effective date (hereinafter the "Effective Date")", but important terms without a commonly understood or concrete meaning, such as "green technology", should be included as a part of the definition. [266]

When the licensing agreement includes related companies to the parties such as subsidiaries and affiliates[267], these terms should also be defined. It is necessary to determine whether companies which becomes subsidiaries and affiliates in the future will also be allowed to take part in the implementation.[268]

3.3.3 Subject Matter

The subject matter of a technology licensing agreement is limited to intellectual property[269]. This means that the subject matter must be a technology that the proprietor has the factual or legal possibility of excluding others from implementing such technology. These intellectual properties includes patent, patent application, utility model, work of authorship (one of the typical works of technical authorship would be software), trade secret, industrial design, know-how, or a combination of the above.[270] IP not created at the time of the contract, such as improvements or future inventions in the relevant technical field, can also be included[271]. This dissertation mainly focuses on patents, utility

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[265] *See supra* note 261 (Bobrowicz) 1135

[266] *See supra* note 165 113

[267] Subsidiaries and affiliates are both companies controlled by a parent company. Subsidiaries are companies with more than 50% owned by the parent company. Affiliates are companies with less than 50% share owned by the parent company, or companies sharing common directors or shareholders. These definitions are common definitions, but the interpretation ultimately depends on the "definitions" section of the agreement. *See supra* note 165 215

[268] *See supra* note 165 215

[269] *See supra* note 165 117

[270] *See supra* note 165 3. Cannady includes trademarks as well, but the author did not list it despite its importance because of the limited scope of this dissertation.

[271] *See supra* note 165 119, 126

models, and trade secrets of a technical nature.

The subject matter of a technology licensing agreement defines, to some extent, the characteristics of the agreement. For example, a patent or a utility model is by its nature disclosed to the world, in sufficient detail to enable the "ordinary person skilled in the art" to implement the protected technology. For these technologies, a license would merely *allow* people to implement it. By way of contrast, a trade secret is protected only by secrecy measures, and its existence as an IP asset is based on its secrecy. It naturally follows that a license in this context would mean that the licensor would *enable* the implementation of the technology by disclosing information on the technology which would otherwise be unavailable, except to the licensee(s).

The subject matter can be categorized as: a) specific IP; b) IP needed for the "making, selling, using of the product", or c) IP needed for the implementation of a standard[272].

Specific IP licensing refers to a licensing agreement with a specific patent or patents, or other IP rights, as the subject matter. One is not bound by it to a specific use of the technology. The second category, a licensing agreement or the IP right(s) needed for manufacturing, selling or using, defines the subject matter by the use and the product for which the technology is used. This means that the licensee is allowed to make, sell, and/or use the product unless it infringes third party rights that are not covered by the license. If the subject matter is defined in this form, the licensee is not entitled to use the technology for purposes other than those stated in the licensing agreement. The third and last category refers to a matter that covers all the technology owned by the licensor that is necessary to implement a specific technology standard. If the subject matter is defined in this form, the licensee is not bound to produce a specific product, unlike category b), unless otherwise stated.

An example of a matter that cannot be the subject matter of a license agreement covering the United States is a technology patented in Japan but not in the United States. The technology is in the public domain in the United States because the patent documents

[272] *See supra* note 165 117-119

in Japan are available publicly globally (at least theoretically), and the technology is not protected by a patent in the United States. Therefore it is impossible to *allow* or *enable* anyone to implement the technology in question – every implementer in the United States is allowed to use the technology, even without the license.[273]

This may seem obvious, but it is especially important in the context of technology transfer to developing countries because of the technology gap: Patent documents may contain insufficient information to enable the potential implementer to implement the technology. In such cases, technical cooperation agreements could be concluded between the parties concerned without any technology licensing aspects.

3.3.4 License Grant

The grant clause determines what the licensee is permitted to do with regard to the subject matter under the contract, or the scope of the license[274].

It is already stated above that the subject matter should be (an) IP right(s), but "licensing an IP right" can be too vague, as IP rights are a bundle of rights regarding an IP. Under Japanese law, a patent holder has the exclusive right to implement the technology[275]. The term implementing includes manufacturing, using, alienating, importing, or offering for alienation the patented product, or for method patents, the use of a method[276]. A license agreement can offer a part of the bundle of rights or all of the rights[277], and thus the type of implementation must be selected by agreement of the parties.

In addition to defining the non-infringing act allowed by the licensor under the contract, the grant may include further limitations based on the technical field of

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[273] *See supra* note 165 3

[274] *See supra* note 165 125

[275] Patent Act art.168. Under U.S. law, similar definitions are given: making, using, offering for sake, selling or importing patented products or products made by a patented method is allowed exclusively to the patentee. For copyrighted technical inventions such as software, the rights to reproduce, display, make derivative works of, and distribute the work, are also rights which needs to be considered. *See supra* note 165 128

[276] For methods for manufacturing a product, both the product made with the process and the process are protected.

[277] *See supra* note 165 126

application, the term of the contract (perpetual or term-limited[278]), the possibility of termination (irrevocable or terminable[279]) or the geographical areas.

The grant may also define what the licensor and licensee are permitted to do with regard to the subject matter that may involve third parties. An exclusive license does not allow anyone except the licensee to implement the subject matter and, under Japanese law, the licensor loses the right to exclusive implementation when an exclusive license is granted, to the extent that the scope of the license covers it[280]. The exclusivity applies only to the specific rights granted (e.g., only for sales), and can be limited geographically (e.g., only in Japan), or to a specific use or time frame (e.g., only for the manufacturing of televisions until 2020), or to a certain form of implementation (e.g., only for production, but not for importation).

A non-exclusive license is a license in which the licensee grants a license for a specific act using the subject matter otherwise prohibited by law, without restraints on the part of the licensor regarding further granting of licenses and implementation. A sole license is a modified version of the non-exclusive license under which the licensor undertakes the obligation not to license the technology out to third parties. This is different from an exclusive license in the following aspects: limitations are posed on their standing to sue in the case of third party rights infringements.[281] Note that sole licensees are nevertheless entitled to sue the licensor for their breach of contract.

The right to sublicense is also an important aspect of the grant. In some

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[278] *See supra* note 165 136

[279] *See supra* note 165 136

[280] Patent Act art. 168. Concerning the right to assert their right against infringers of exclusive licensors, there is a supreme court case in Japan which approves of the right to seek injunction, as the licensor also has an actual interest in stopping the infringing activities, as infringing activities can lead to lower royalty income from the licensee. *See* Saikō Saibansho [Sup.Ct.] Jun. 17, 2005, MINSHŪ 59KAN 5GO 1074. It is considered that the proprietor maintains the right to seek damages when there are damages caused by willful act or negligence. MINJI SOSHŌHŌ [MINSOHŌ] [C. CIV. PRO.] 1996. Naoki Okumura, *Senyōjisshiken Setteigo no Tokkyokensha ni yoru Sashitome Seikyūken,* PATENT Vol.60 No.9 (2007) 17

[281] *See supra* 2.2.1 for detailed discussion.

jurisdictions, exclusive licensees are allowed to grant sublicenses.[282] By contrast, whether or not a non-exclusive licensee has the right to sublicense depends on the grant. The right of the licensee to transfer the license to a third party is different from the right to sublicense, because the original party no longer retains the right as the licensee.

Additional provisions are necessary when subsidiaries or affiliates are involved. These provisions must state who has access to which parts of the licensed technology.[283]

Related to the license grant, a licensing agreement can also include a "grant-back clause" in which the licensee agrees to assign the improved technology invented by the licensee in the future[284] as a part of the conditions of the license. The grant introduces a potentially new subject matter into the agreement, namely future IP rights derived from the original invention.

Without the limitation of terms and clauses that allow the licensee to obtain all the derivative inventions of the licensor, it can initiate an unbalanced relationship between the two parties until the original subject matter loses its status as an IP (for example, on expiration of the patent). A unilateral obligation of the licensee to grant back all improvements to the licensor would keep the licensee in a technically inferior position, as the licensor's derivative inventions are not available to the licensee. Grant-back without compensation is therefore prohibited in some jurisdictions[285].

The imbalance comes from the foreseeability of the obligations between the parties – the licensor knows the subject matter for which they have obligations, but the licensee knows at the time of the contract neither the subject matter for which they have

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[282] *See supra* 2.2.1.1 for detailed discussion.

[283] *See supra* note 165 215

[284] *See supra* note 165 126

[285] A grant-back clause that determines the obligation of the licensee to grant back a license free of charge is illegal in some jurisdictions, such as the Philippines. AN ACT PRESCRIBING THE INTELLECTUAL PROPERTY CODE AND ESTABLISHING THE INTELLECTUAL PROPERTY OFFICE, PROVIDING FOR ITS POWERS AND FUNCTIONS, AND FOR OTHER PURPOSES, Rep. Act 8293 (Jun. 6, 1997, hereinafter "IP Code")§87.8 states that it is "deemed prima facie to have an adverse effect on competition and trade" unless exceptions under§91 apply to the contract.

obligations nor their value. Therefore it is favorable for the licensee to include a limitation of the grant back clause so that the licensee can re-negotiate the terms after the period has expired, or re-negotiate the terms of payment every time a new invention is to be granted back to the licensor[286]. The grant-back clause could also trigger anti-competition concerns, depending on the case.

Another downside for both the licensor and the licensee of having such an unbalanced term is that the licensee will not be motivated to improve upon the subject matter. A former IP director of a large German automotive component company once stated that it is important for a company to have strong competitors in order to remain innovative[287]. The licensor can dictate to the licensee to some extent by using such a clause, but can itself lose the chance to remain competitive.

On the other hand, some jurisdictions oblige the licensor to allow access to improved technology during the period of the agreement[288]. This would theoretically allow the licensee to enjoy the most innovative technology, but may also scare the licensor away from the agreement itself or discourage innovative efforts on the part of the licensor.

The freedom of contract to set a license grant is limited by IP exhaustion principles. It is generally considered that once a patented product or a product made using the

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[286] *See supra* note 165 138-139

[287] Interview with Dr. Bertram Huber (Jul. 2015). "Interestingly, after the second world war, Bosch has entered into a broad licensing arrangement with Denso. This had as one of its reasons the difficulty to make direct sales to Japanese customers, not because such sales would not be practically or legally possible but because Japanese customers rather would prefer to buy from Japanese suppliers. In fact, several decades later, Denso had established itself on the world market as one of the most important players in automotive products and systems. Today, Bosch and Denso are competitors at equal footing. Their mutual success gives proof of the fact that competition as such serves as an important incentive to invest in research and development and stay at the forefront of technological development. In other words, it can be said that helping a competitor to grow can also benefit the licensor in the long run. Perhaps Bosch had this in mind, too, when entering into the licensing arrangement which eventually resulted in a win-win situation for both companies."

[288] IP Code (Phil.) §88.2

patented process is brought onto the market by the licensor or with the consent of the licensor, the patent is exhausted, and the licensor can no longer enforce the IP.

Setting a condition to the license may serve as a workaround in some cases, though: Consider an agreement in which the scope of the license is limited to, say, manufacturing a specific component used in product X. The licensee produces the component. It is sold to another company, and is used to make product Y. Then, the IP right would not be exhausted because the license is only for manufacturing product X.[289]

3.3.5 Payment arrangements

Payment methods may include lump sum payments, down payments, and running royalties. Payment methods may not be included in each and every contract, as in the case of cross licensing agreements and free licensing agreements.

The payment methods are decided according to the characteristics of the parties and the technology and, to an extent, determine the relationship between the parties. When the licensing income is tied to the success of the licensee, the licensor will be incentivized to be cooperative. When the licensing income is less contingent on the profit of the licensee, the licensor may be less inclined to cooperate. The following are the types of payment methods seen in licensing agreements and their characteristics.

3.3.5.1 Lump sum payment

A lump sum payment is a one-time payment of the entire compensation for the term of the license. It is different from a down payment[290], which is an initial payment of a part of the licensing fee, and where the payment of the other parts of the licensing fee are made through royalties[291]. A lump sum payment is preferred when the licensor wishes to improve cash flow, to eliminate any unpredictability, to be relieved of the monitoring or management burden, or when the licensee wishes to treat the payment as a sunk cost[292].

The risk of a lump sum payment stems from the difficulty of predicting the value of the technology in the early stages of development and application. As the revenue is

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[289] *See supra* note 165 223-224

[290] Down payments are sometimes referred to as "advances." *See supra* note 254 27

[291] *See supra* note 165 142-143

[292] *See supra* note 165 158

not tied to the success of the technology, the licensor will not have an incentive to cooperate with the licensee, and the licensor and licensee become "unrelated parties" rather than "joint adventurers".[293] In this sense, the relationship between the parties somehow resembles that of a patent assignment. Therefore this payment method is often used by parties wishing to settle a dispute, or licensors, such as small enterprises and universities, not wishing to bear the cost of monitoring or managing the licensee and the implementation process during the course of the contract. [294]

3.3.5.2 Down payment

A down payment is an initial payment[295], upon execution of the agreement, which is combined with royalties[296] and paid at a certain intervals of time determined by the parties during the contract[297]. Since the payment is not contingent on the receipt of revenue, the implementation of the technology creates, for the licensee, the burden and the risk of the technology not generating the expected revenue. It is rare for a licensor to obtain a down payment of more than the cost of the licensing negotiation and the preparation thereof. [298] Down payments are sometimes made as a part of accumulated prepaid running royalties. This corresponds to the net present value (NPV) of a certain part of the running royalties that would otherwise have become due in the future. When the down payment is a part of the running royalties paid in advance, the running royalties paid in the future are discounted.[299]

3.3.5.3 Royalty

A running royalty is a payment that is contingent upon, and proportional to, the

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[293] *See supra* note 165 158

[294] *See supra* note 165 158

[295] The payment of the down payment can be once, but could be divided in two installments or more depending on the circumstances of the parties.

[296] If the initial payment is the only payment, it is the abovementioned "lump sum payment", not down payment.

[297] *See supra* note 95, 7-8, *see also supra* note 165 143. Here the word "initial fee" is used similarly to the word "down payment" in the main text.

[298] *See supra* note 297 8

[299] Interview with Prof. Dr. Heinz Goddar (Jun. 2016)

profit generated by the use of technology,[300] and is paid quarterly, semiannually or annually, or at whatever interval is agreed by the parties.[301] It can be decided to be a fixed amount per volumes sold or a percentage of the profit the products generates[302].

When the parties agree on a percentage royalty, the royalties are decided by determining the royalty rate and the royalty base[303]. The royalty is then determined by multiplying the royalty base by the royalty rate.

The royalty rate is applied to the royalty base. When determining the royalty base, one should consider a) whether to use gross revenue or the net revenue; and b) the

[300] *See supra* note 297 5

[301] *See supra* note 165 159

[302] *See supra* note 297 5-6

[303] *See supra* note 165 146

products[304] to which the royalty applies[305]. Although net revenue is the more common

[304] The products to which the royalty applies, either the whole product or a component of the product, is also an important question.
In the United States, when determining the base, the "smallest salable unit" principle, first put forth in Cornell v. Hewlett-Packard, 609 F. Supp. 2d 279, 284-85 (N.D.N.Y. 2009) applies. "[W]hen claims are drawn to an individual component of a multi-component product, it is the exception, not the rule, that damages may be based upon the value of the multi-component product. *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67–68 (Fed. Cir. 2012). Indeed, we recently reaffirmed that "[a] patentee may assess damages based on the entire market value of the accused product *only where* the patented feature creates the basis for customer demand or substantially creates the value of the component parts." *Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255, 1268 (Fed. Cir. 2013) (emphasis added) (quoting *SynQor*, 709 F.3d at 1383). In the absence of such a showing, principles of apportionment apply." (VirnetX, Inc. v. Cisco Systems, Inc., 767 F.3d 1308 (Fed. Cir. 2014)) By "smallest salable unit", it is not required that the product is sold separately (VirnetX, Inc. v. Cisco Systems, Inc., 767 F.3d 1308 (Fed. Cir. 2014)) at 32. *See* also Rudy Kim & Michelle Yang, *Castle Defense: Patent Damages and Expert Testimony*, Corporate Counsel, March 17, 2015 edition (2015).

In Japan, the courts determine the royalty by multiplying the damages calculated through measures stated in Patent Act art. 102 by the contribution ratio. The contribution ratio is determined by the percentage of the infringing parts in the whole product. *See* Ministry of Economy, Trade and Industry (JPN), *Tokkyoken Shingai he no Kyūsai Tetsuzuki* （特許権侵害への救済手続）, http://www.meti.go.jp/policy/ipr/infringe/remedy/remedy03-1.html. (last visited Aug. 12, 2016).

In Germany, the royalty base is determined by considering how the product is normally sold and whether the invention influences the whole of the product. *See* Oberlandesgericht Karlsruhe, Judgment of Aug. 5, 2013, Case 6 U 114/12 para 114. This has been a standard practice in Germany with regard to employees' inventions. The base in this case is also determined by examining the influence of the invention for employees' inventions. *See* Guidelines on the Compensation for Employee Inventions in the Private Sector, dated 20 Jul. 1959, Annex to the Federal Gazette No.156 of 18 Aug. 1959, modified by the Guielines of Sep. 1, 1983, Federal Gazette No. 169. 9994. If the invention influences the whole of the product, such as in the case of inventions relating to an active agent of a pharmaceutical product, the base would be the whole product. However, if the

royalty base, it poses a number of problems, since the costs of producing a specific product are not necessarily easy to determine; the costs are not at all controllable by the licensor and could increase greatly due to inept management. Therefore, using the gross revenue as a royalty base is best if future problems are to be avoided.[306]

Royalty rates can be determined as a percentage of the net sales achieved by the licensee. The rates are determined by the parties, often taking into account the relevant industry practice, income projections, the investment of the licensor in R&D, the strength of the IP, the licensee's ability to bear the cost burden, the subject matter (whether it is a pure patent license or accompanied by know-how), and the grant (the scope and exclusivity).[307] Some countries[308] have a cap on royalty rates.

Although royalty rates vary widely, there are statistics available which show average rates. The amount per unit, in practice is, on average, around 25% of earnings before income tax and usually decreases when the total amount of turnover increases, according to research conducted in Germany.[309]

In Japan, there are two main ways of determining the value of a patent – 1/3rd or

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influence is limited to parts of the product, then only the influenced components are taken into account as the base. *See* MCDERMOTT, WILL & EMORY, PATENT OWNERSHIP IN GERMANY: EMPLOYERS V EMPLOYEES (MCDERMOTT, WILL & EMORY 2013).

[305] *See supra* note 165 146

[306] *See supra* note 165 147

[307] *See supra* note 165 145 - 146

[308] Ghana has a cap set by the Technology Transfer Regulations. Japan also used to have a factual cap set by relevant authorities. For details *see* Chapter 5.

[309] Robert Goldscheider et al., *Use of the 25 Per Cent Rule in Valuing IP*, les Nouvelles (2002) 6. *See also supra* note 297 6. The interesting fact is that even though the percentage seems to be similar in different industries, the "value" of one patent differs greatly, as is often said, between industries. The difference is firstly the profitability – if the profit margin is 10% of the sales price, then 2.5 % would be the royalty rate per unit. On the other hand, if the profit margin is 60%, then 15% would be the royalty rate per unit. Another factor which creates the difference is the number of IP rights used in a product. Assuming that the contribution factor of each property is the same, if a product uses 10 IPs, it means that the royalty is divided by 10.

1/4th of the net profit of the product. The rationale for dividing the profit into three or four is that a profit is generated by the following factors: a) the financial power of the licensee, b) the marketing power of the licensee, c) the invention, and d) the organizational power (sometimes not taken into account as a factor). The value can be paid through a combination of payment methods, but is calculated so that the total payment would be equivalent to the present discounted value.[310]

The difficulty in deciding the level of royalties lies in the unpredictability of the relevant technical progress, the overall economic situation in the area in which the licensee implements the invention, and the market itself. The prices of products are often difficult to forecast and, as for products in many fields and areas, the longer the time that has passed since the release of the product, the lower the price, but it is uncertain how fast or how far the price will fall. On the other hand, if there is a technical innovation in surrounding areas, the price of a product may actually increase.

In addition to the unpredictability of the success of a technology, external economic conditions make the problem even more complicated. This is especially so with international technology licensing agreements. For example, if the U.S. dollar depreciates significantly against the Japanese yen, Japanese licensees will obtain less running royalties than before, even if the royalty is fixed. It is therefore risky for either party to determine the price without having a clause in the licensing agreement that allows for adjustment.

The percentage system provides flexibility[311], but it may be difficult to calculate or to check the price of the product embodying the technology, especially when there is a large number of licensees. It also makes the royalty revenue dependent on the effort of the licensee to cut production costs and increase the profit margin. In the case of MPEG-2 patent pools, the royalty was a fixed amount per product, but it was revised downwards

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[310] NATIONAL CENTER FOR INDUSTRIAL PROPERTY INFORMATION AND TRAINING, SHITTEOKITAI TOKKYO KEIYAKU NO KISO CHISHIKI (National Center for Industrial Property Information and Training 2010) 50

[311] *See supra* note 297 6

in order to reflect the significant drop in the price of the products.[312]

Concerning licensing into developing countries, Columbia University's technology licensing division, Columbia Technology Ventures, has a clause in its standard licensing contract that states that they are prepared to re-negotiate their licensing terms, including royalties, in order to enhance access to technology in developing countries as a part of their social responsibility, in case in the future the licensees decide to do business in these countries[313]. This approach is also compatible with FRAND commitments and is even encouraged, in a way, when one takes the word "non-discriminatory" to mean substantial conditions, not merely the price.

As mentioned before, royalties are tied to the success of a technology but the actual profit generated is not necessarily foreseeable, so the amount of future royalty payments is difficult to predict. There are ways to control the unpredictability, at least to some extent, by setting a minimum payment and a maximum payment at the time of the agreement.

A minimum royalty is the minimum amount of royalty one must pay per agreed period of time, regardless of the income the licensee makes. In practice the amount often settles at 10-40 % of the expected running royalty.[314]

It may seem irrational for the licensee to agree to this, as it poses a definite obligation in exchange for an uncertain future return. However, if you view this from the point of view of the licensor, certain conditions may justify the payment of a minimum royalty.

The first aspect which needs to be considered is the subject matter. When the subject matter includes secret know-how, and the disclosure itself poses a risk or cost of transfer, a minimum royalty may serve as an ongoing substitute for a heavy down payment.[315]

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[312] *See supra* note 79 798

[313] *See supra* note 157 (Standard Patent License of Columbia Technology Ventures)

[314] *See supra* note 297 7

[315] *See supra* note 297 7

The second aspect that requires consideration is the exclusivity[316]. When the license is an exclusive license and there is no minimum royalty, it makes the possible revenue entirely dependent to the effort of the licensee. The licensee could leave the technology "on the shelf", as there is no incentive to use the technology nor to terminate the license, while prohibiting others from using the technology.[317]

In order to prevent the licensee from being burdened by minimum royalty payments without an exclusive license, while licensors risk seeing their technology not being used, and therefore risk not receiving any royalty income, the agreement can include a termination clause stating that both parties can choose to terminate the exclusivity if the royalty payment does not reach an agreed threshold which is set at the level of the minimum royalty.[318].

The converse is the royalty cap, which sets a cap on the maximum royalties the licensee need pay. It also may seem irrational for the licensor to agree to a royalty cap – if a licensee is willing to produce more, it seems that the technology is successful, and it seems a good reason for a licensor to ask for more, not less. However, the maximum royalty is used when, for example, a licensor wishes to disseminate a technology[319] since the royalty cap creates an incentive for the licensee to produce more.

A royalty premium is a bonus payment paid to the licensor when the licensee has achieved a certain amount of sales, revenue or other agreed target. This encourages the licensor to cooperate and improve the technology, and is thus well suited to a long-term cooperation agreement.[320]

In order to avoid royalty stacking, which may occur, a royalty reduction provision may be inserted into the agreement.

3.3.5.4 Payment methods

Payment methods, which in common law jurisdictions are referred to as

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[316] *See supra* note 297 7, *see also supra* note 165 153

[317] *See supra* note 297 7

[318] *See supra* note 165 154

[319] *See supra* note 312

[320] *See supra* note 165 154

"consideration" [321] are chosen on the basis of the financial ability of the parties, the maturity of the technology, the cost of implementation and the type of technology. If the licensor is a company in urgent need of funding, then it may ask for a bigger down payment, rather than a bigger share of the profit later. [322] A licensee that is low on funds may ask for a larger running royalty and a smaller down payment.

When the technology is not mature enough or needs modification in order to be implemented by the licensor, and the licensor needs to help with the modification process, the licensor is likely to ask for a down payment that would at least compensate the licensor for the extra cost. On the other hand, when the technology is immature and the licensee makes an effort to implement it, the licensee may not be willing to pay a huge down payment on top of the implementation costs.

When the subject matter is a trade secret, it is likely that a larger down payment will be required. Since trade secrets are protected only by secrecy, the enablement of implementation by disclosure imposes a huge risk on the licensor. If the trade secret is leaked to a third party without the third party resorting to illegal measures to obtain the technology, the trade secret is no longer a secret and loses all value as an IP. Since the secrecy measures need to be taken by the licensee, there are only limited possibilities of risk mitigation on the part of the licensor. In these circumstances, the licensor may ask for a larger down payment as a precaution.[323]

For developing countries with need for technology licenses, the problem is that the factors often seen in developing countries, such as a need for comprehensive transfer of technology including trade secrets, the required modification of the technology to suit the local environment, and exclusivity due to the cost of creating the market, would push the licensors to favor larger down payments, but the general conditions of the licensee,

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[321] Consideration is "something of value given to someone in return for goods, services, or some other promise. Consideration is vital in contract law, as a valid contract must include consideration for every party involved. In simple terms, consideration is the basic reason a party enters into a legal contract." *See Consideration definition, examples, processes*, Contracts, http://legaldictionary.net/consideration/. (last visited Aug. 13, 2016). *See also supra* note 261 1139-40

[322] *See supra* note 165 145

[323] *See supra* note 297 8

such as price difference, and a small operating budget combined with a high risk in the market prevents them from being able to make a large down payment.

Other payment related clauses are the means of payment terms and the report and audit terms, which are also important clauses for implementation. Clear and detailed agreements are important for smooth execution[324].

3.3.6 Warranty and Indemnities

Warranties are contractual statements of facts at the time of the contract[325] and serves as a premise of the contract.[326] Warranties guarantees the characteristics of the subject matter, or the entitlement of the licensor to the subject matter.[327]

The items not listed in the warranties are not guaranteed by the licensor, and the contractual obligation of the licensor is to allow the use of or to enable the use of the subject matter as it is[328]. Warranties therefore allocates the risk between the licensor and the licensee[329].

On the other hand, indemnities are clauses aimed at one party saving another party from liabilities against third parties, or among the concerned parties, caused by a certain conduct.[330] The indemnities allow the predetermination of the responsibilities of the party in case a third party claim arises, and smooth cooperation when dealing with claims.

A financially stronger party could indemnify the other party in return for other

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[324] *See supra* note 165 159-163

[325] *See supra* note 165 163

[326] Yasumi Ochi, *Draft Proposal of new Civil Code: paradigm shift from 'caveat emptor (let the buyer beware)' to 'let the seller disclose' (「買主、注意せよ」から「売主、開示せよ」への契約観の転換--債権法改正の基本方針の詐欺・不実表示・情報提供義務・債務不履行概念と表明保証・東京地判平成 18.1.17 判決の総合的検討)*, 86(3) THE WASEDA LAW REVIEW 283–285 (2011).19

[327] *See supra* note 165,163

[328] *See supra* note 326 21

[329] ASHURST, WARRANTIES AND INDEMNITIES (Ashurst's Quickguides 2010) 3

[330] *See supra* note 165 168

merits the indemnitor obtains from the indemnitee[331]. For example, a university licensor may wish to be indemnified against third party claims arising due to the implementation of the technology, but would be satisfied with smaller payments or would be willing to give exclusivity to the licensee. When broad indemnity is provided by the licensor, the value to the licensee of the contract would increase, and vice versa[332].

The concepts of warranty[333] and indemnity[334] are originally found in common law. Under the common law theory, the principle of caveat emptor, or buyer beware, applies.[335] The concept of warranty and indemnity is traditionally alien to Japanese law. However it is becoming increasingly common, especially in the context of mergers and acquisitions, because the Japanese Civil Code protects the buyers only when the seller has misrepresented the facts intentionally or by negligence[336], and the buyer very often wishes to know beforehand the subject matter of the contract[337].

Frequently negotiated warranties and indemnities are as follows:

a) The warranty of "the legal capacity of the licensor to enter into and execute the agreement"[338];

b) The warranty of "the completeness, accuracy, or functionality of the technology and documentation"[339]

c) The warranty of "the IP rights and the licensor's rights to it" [340]

d) Provision of indemnity to the licensee for damages if the warranties prove to be untrue [341]

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[331] *See supra* note 165 169

[332] *See supra* note 165 169

[333] *See supra* note 329 3

[334] *See supra* note 165 168

[335] *See supra* note 333 3

[336] *See supra* note 165 709

[337] *See supra* note 326 28

[338] *See supra* note 165 164

[339] *See supra* note 165 164

[340] *See supra* note 165 164

[341] Junichi Kunitomo, *Some Considerations on 'Representations and Warranties' (表明*

e) Provision of indemnity to the licensor for product liability[342].

While a) and d) are commonly seen in contracts in general, the others are more IP licensing specific. Compared with a) – c) (warranties) which state the facts at the time of the contract, d) and e) ("indemnities") state how a liability should be dealt with in case liabilities against third parties occur in the future.

Among b), c) and e), b) is the easiest to accept, as the licensor knows the technology and can be certain that the technology functions under the conditions specified by the licensor. If the subject matter is a patent, b) is not offered, but in other technology licenses, it is more common to include a guarantee of the workability of the technology.

However, c) can be more problematic. As one cannot be sure if the patent is truly valid (it is not possible to search all prior arts which may exist somewhere in the world), providing a warranty for validity can be a gamble. The validity of the subject matter is not obvious. Third party rights are also difficult to search thoroughly[343]. It is therefore better to guarantee only that the licensor does not know of any issues that could cause invalidation, such as novelty-destroying prior art[344].

The indemnity in case a warranty proves to be untrue, namely d), is an important clause not only for the licensee but also for the licensor. Since a third party claim may result in an invalidation of the IP that is the subject matter, it is in the interest of the licensor to take up the defense[345] unless the licensor is incapable of doing so. Otherwise, a situation may arise where the licensee does not defend the patent and lets the patent be invalidated so that the licensee can use the technology free of charge in the future.

For the "safety" of the licensors, it is important to set a cap on liabilities in general,[346] although in some cases such as product liability cases this may not exempt the licensor from liabilities.

Limitations can be set for the royalties already paid by the licensee to the licensor,

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保証責任に関する若干の考察：判例を素材として), RYUKOKU LAW REVIEW 44(4) (2012) 8

[342] *See supra* note 297 4

[343] *See supra* note 165 165

[344] *See supra* note 297 4

[345] *See supra* note 165 175

[346] *See supra* note 165 166

or for some other amount to which the parties agree.[347]

Providing warranties and indemnities is sometimes mandatory under national law. For example, product liability is an important point of consideration. Product liability laws and regulations differ from one jurisdiction to another. In many major jurisdictions, statutory liability exists,[348] but in other jurisdictions, the general rule of

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[347] *See supra* note 297

[348] For example, in Japan product liability occurs only when one is the producer of the product. Therefore, in licensing agreements, a clause stating that all the product liability lies in the licensee is enforceable as long as the licensor is not involved in the production to the extent that the licensor is considered to be a joint producer. This makes a lot of sense, as the licensor does not necessarily have control of the production. *See*, for example, the model agreement in this paper: MEDU-NET LICENSE MANAGEMENT WORKING GROUP, RAISENSU KEIYAKU NO KANGAEKATA RAISENSU KEIYAKU NI OKERU KAKU JŌKŌ NO KANGAEKATA (ライセンス契約の考え方 ライセンス契約における各条項の考え方) (2012) http://www.medu-net.jp/uploads/fckeditor/uid000009_20121102153743 45b1404a.pdf (last visited Aug. 17, 2016).
However, if the negligence of the licensor has caused the problem, liability may still arise because of this negligence. *See* MINPŌ [CIVIL CODE] (hereinafter "Civil Code") art.709.
In the United States, product defects consist of design defects, production defects and marketing defects, and all the parties responsible for each process will be held liable. *See* Legal Information Institute, Cornell University Law School, *Products liability*, https://www.law.cornell.edu/wex/Products_liability. (last visited Aug. 17, 2016). *See* also, Clark Savage Turner & Debra J Richardson, *Software and Strict Products Liability: Technical Challenges to Legal Notions of Responsibility*, Proceedings of the IASTED International Conference on Law and Technology, October 31, 2000, San Francisco, CA. Therefore it is possible that a licensor will be deemed liable for the defect, especially for design defects.
In Europe, the Council Directive on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products of 25 July 1985 (85/ 374/ EEC) determines the responsibility of the liability of the producer "for damage caused by a defect in his product" (art.1) A licensor is not liable as long as the licensor is not a "manufacturer of a finished product, the producer of any raw

liabilities applies.[349] Licensors may not be exempted from their liabilities if they are to be held liable by the product liability laws of the respective jurisdiction.

Apart from product liabilities, in developing countries, licensors are often obliged to provide certain warranties and indemnity to the licensee by law, in order to mitigate the risk of technology transfer on the side of the licensee, and to hold the licensor responsible for the results of the implementation. This prevents licensees from being bound by unfair contracts due to the difference in negotiating power, but may also result in avoiding the transfer of the technology by the potential licensor in the first place to avoid risks, thereby rendering the technology unavailable in the country.

An interesting example of legislation aimed at avoiding this problem is the Philippines. The Philippine Intellectual Property Law does not allow clauses "which exempt the licensor for liability for non-fulfillment of his responsibilities under the technology transfer arrangement and/or liability arising from third party suits brought about by the use of the licensed product or the licensed technology[350]" in general, but the Documentation, Information and Technology Transfer Bureau allows broad exceptions on a case-by-case basis for "exceptional or meritorious cases where substantial benefits will accrue to the economy, such as high technology content, increase in foreign exchange

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material or the manufacturer of a component part and any person who, by putting his name, trade mark or other distinguishing feature on the product presents himself as its producer." In other words, if a licensor is not a part of the production process and does not present himself as the producer, the licensor will not be liable. (art.2)

In China, Chapter 5 of the Qinquan zeren fa(侵权责任法) [Tort Law] determines the liability of producers and retailers. The two are held jointly liable for the damages caused by the defective product (art.43), but they could seek compensation from the other party, whereby one party pays the consumer for the damages caused by the other party. Product liability arises only when one is deemed to be producing or selling products inside China, according to the Chanpin zeren fa(产品质量法)[Product Quality Law]art.2.

[349] Ghana does not have a products liability law but strict liability applies in product liability cases. *See* FREDERICK OWUSU BOADU, AGRICULTURAL LAW AND ECONOMICS IN SUB-SAHARAN AFRICA: CASES AND COMMENTS (Academic Press 2016).

[350] IP Code (Phil.) § 87.14

earnings, employment generation, regional dispersal of industries and/or substitution with or use of local raw materials, or in the case of the Board of Investments, registered companies with pioneer status"[351].

A certain control is intended through the application of the laws of the Philippines and the interpretation of the law, and therefore the law states that the laws of the Philippines "govern the interpretation of the same and in the event of litigation, the venue shall be the proper court in the place where the licensee has its principal office."[352] An exemption to this clause has never been granted hitherto.[353]

3.3.7 Patent Maintenance, Trade Secret Protection and Enforcement

This part of the licensing agreement states the responsibility of the licensor and licensee for maintaining the IP rights and enforcing them against third parties.

Patents need to be maintained by following the maintenance procedure and paying maintenance fees in order to remain effective. Therefore it is necessary to state the obligations of the licensor to maintain the patent by prosecuting the maintenance procedure in the relevant jurisdictions, and to determine which party bears the cost thereof. Normally the fees are paid by the licensor, who is in many cases the owner of the patent. However, if the licensor is a university, it is also common that the implementer bears the cost[354].

Not only patents, but also trade secrets, need to be adequately maintained as a secret to keep their status as a trade secret. Non-disclosure obligations shall be posed to all parties, and sometimes additional NDAs with individuals with access to the trade secret is also necessary. [355] When subsidiaries and affiliates are involved, the agreement should include a statement as to whether or not they are allowed access to the licensed

[351] IP Code § 91

[352] IP Code § 88.1

[353] Interview with Ms. Carmen G. Peralta, Director of the Documentation, Information and Technology Transfer Bureau of the Intellectual Property Office of the Philippines. (Apr. 2015)

[354] *See supra* note 165 177-179

[355] *See supra* note 222 16

technology, and if yes, a confidentiality obligation must be posed on the involved companies as well.[356]

Protective measures must be taken by both the licensor and the licensee, and the detailed obligations should be stated in this section of the agreement. The details are described above in 3.2.2 Non-disclosure agreements and other interim agreements.

In the case of third party IP right infringement, it is for the benefit of the licensee to stop the infringing activity or to force them to pay royalties so that the infringer will not be unfairly competitive against the licensee. However, in many jurisdictions, only exclusive and sole licensees have any rights to stop the infringing activities.[357] Without an agreement, whether or not to enforce patents is at the discretion of the licensor, and therefore it must be clarified that the licensor has the *obligation* to enforce the patents against third parties in case of infringement. The costs thereof may be paid either by the licensor or the licensee, depending on the agreement. It is common for the licensee to bear the costs when the licensor does not have sufficient resources for lawsuits, such as research institutes.[358]

Conversely, some licensees may have an incentive to let the third party infringers invalidate the patent. If the patent is invalidated, the licensee no longer has to pay for it. Therefore, the licensor may require that the obligation of the licensee to cooperate in cases of invalidation proceedings shall be included in the agreement.

3.3.8 Most Favored Status Assurances

Most favored status assurances are assurance given by the licensor to the licensee that the licensor will not grant further licenses to third parties with the same or more favorable conditions, or that the licensor will offer the licensee the same terms for the same or similar subject matter if a further license is granted to third parties, granted that the terms are more favorable[359].

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[356] *See supra* note 165 215

[357] For details, *see* 2.2.1

[358] *See supra* note 165 179

[359] *See supra* note 165 180

The problem arising from this clause is that "no two deals are ever exactly the same", and the negotiating power of the licensor will be different in every deal[360]. The licensor would not want to bind itself from obtaining better terms from other licensees. Therefore it is unlikely that the licensor would agree to this clause unless the negotiation dynamics are in the favor of the licensee[361].

3.3.9 Rights of First Refusal

Rights of first refusal clauses are clauses which oblige the licensor to inform the licensee of any relevant new technology developed by the licensor and an opportunity to accept or negotiate the terms of the license for the new technology before offering it to any other party.[362]

This would enable the licensee to have and maintain an edge by comparison with future licensees of the licensor.[363] However, from the licensor's perspective, it could become problematic as it could delay future negotiations with third parties.[364]

3.3.10 Non-assertion, Defensive Termination Clauses and Covenant not to Sue

Non-assertion clauses are clauses in which the licensee agrees not to assert that the licensed IP (or in some cases, other IP owned by the licensor) is invalid. [365]

Defensive termination clauses state that the license will be terminated once the licensee challenges the validity of the IP. This has an effect similar to the non-assertion clause in the sense that it prohibits the licensee from challenging the validity of the IP of the licensor. Its being "tools of licensor dominance"[366] to a certain extent prompts the

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[360] *Most favored licensee: The Licensor's clause from hell*, http://licensing-lawyer.com/blog1.php/more-on-joint-inventions-2. (last visited Aug. 13, 2016).

[361] *See supra* note 360

[362] *See Commercialization Agreements: Practical Guidelines in Dealing with Options*, *in* Mark Anderson & Simon Keevey-Kothari ip Handbook of Best Practices (2007). *See* also *supra* note 165 180-181

[363] *See supra* note 165 181

[364] *See supra* note 165 181

[365] *See supra* note 165 185-6

[366] *See supra* note 165 186

thought that the clause could be anticompetitive, and regulations exist for such clauses in some jurisdictions.[367]

Another possible form of "non-assertion" clauses is one that obliges the licensee not to assert its own IP rights against the licensor. A declaration not to assert one's patents against infringing third parties could be voluntary, in the form of a "covenant not to sue."[368] However it becomes problematic when a party with greater negotiating power imposes an agreement not to assert the IP of the other party against it. These acts could be considered problematic under anti-monopoly law depending on the jurisdiction.[369]

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[367] For example, see IP Guidelines (2016) Part 4 (4) Imposing Restrictions in relation to the Use of Technology (vii) non-contest obligation. Imposing an obligation by a licensor on its licensees not to contest the validity of rights for licensed technology (Note 14) is recognized to have aspects to promote competition by facilitating technology transactions and is unlikely to reduce competition directly.

However, it may constitute an unfair trade practices when it is found to tend to impede fair competition by continuing rights that should be invalidated and by restricting the use of the technology associated with the said rights. (Paragraph (13) of the General Designation)….

[368] *See supra* note 165 186 which states that covenants not to sue "are effectively licenses, positive business tools whereby one or both parties waive their IP rights for various strategic reasons." Krattiger elaborates on nonasserts, which is another term for a covenant not to sue, in *supra* note 186 that "[a] nonassert is an implied license. Put differently, a nonassert is an agreement that certifies that the party or parties to the implied agreement will not assert or defend certain rights that they possess. Such rights are typically related to patents. A nonassert can take one of three forms:

- an agreement between two parties (bilateral)
- an agreement among several parties (multilateral)
- a public statement (proclamation)"

[369] For example, *see* IP Guidelines (2016) Part 4 (5) Imposing Other Restrictions (vi) Obligations of the non-assertion of rights. When a licensor imposes on licensees an obligation to refrain from exercising, in whole or in part, the rights owned or to be acquired by them against the licensor or any entrepreneurs designated by the licensor (Note 17), this obligation could result in enhancing the influential position of the licensor in a product or technology market or could impede the licensee's incentive to engage in research and development, thereby impeding the development of new technologies by

A covenant not to sue can also be used in tandem with a non-assertion declaration, stating that the patent holder will not assert its patents as long as the user of the technology does not bring a lawsuit against it.

The problem with the aforementioned clauses is that it enables the licensor to dominate the market by enjoying immunity from infringing the licensees' patents. As long as a licensee wishes to use the technology of the licensor, the licensee is factually forced to give a free license to the licensor for existing and future patents.

It also brings the relationship licensor and licensee to an immediate end if and when a licensee decides to exercise its rights. There may exist an opportunity for negotiation between the parties within the framework of the license, but this option no longer exists when the contract is terminated.[370]

From the aspect of the benefit of the general public, these clauses may deter licensees from challenging the patents and therefore impede free use of technology.[371] The licensee, in many cases, being "a person skilled in the art", is likely to have the knowledge to judge whether or not the patent has reason to be invalid. The licensee also has an incentive to invalidate the patent as the licensee would be relieved of royalty payments. Deterring the licensee with the necessary knowledge and incentive to invalidate the patent from doing so may result in leaving more questionable, yet unchallenged, patents.

3.3.11 Patent Marking

Patent marking is required in some jurisdictions in order to obtain damages from infringement. The United States have such requirement in USC 35 §287 (a) (2015).[372]

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restricting the exercise of the licensee's rights, etc. It therefore is an unfair trade practice if it tends to impede fair competition. (Paragraph (13) of the General Designation)

[370] *See supra* note 165 187

[371] IP Guidelines (2016) Part 4 (4) Imposing Restrictions in relation to the Use of Technology (vii) non-contest obligation addresses this concern.

[372] USC 35 §287 (a)(2015) Patentees, and persons making, offering for sale, or selling within the United States any patented article for or under them, or importing any patented article into the United States, may give notice to the public that the same is patented,

When the licensor or patentee fails to do so, the patentee is no longer allowed to seek damages. The Japanese Patent Act Article 187[373] states that the patentee and the licensee "shall make an effort to place a mark" "indicating that the product or process is patented", however it is not mandatory and there are no penalties for not doing so. Presumption of negligence applies even to non-marked products.[374] This is also the case in Germany, where their PatG does not provide any articles obliging the patentee or the licensee to place a mark on the product.[375] China and Korea similarly do not require marking of a product in order to claim damages from the infringement.[376]

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either by fixing thereon the word "patent" or the abbreviation "pat.", together with the number of the patent, or by fixing thereon the word "patent" or the abbreviation "pat." together with an address of a posting on the Internet, accessible to the public without charge for accessing the address, that associates the patented article with the number of the patent, or when, from the character of the article, this cannot be done, by fixing to it, or to the package wherein one or more of them is contained, a label containing a like notice. In the event of failure so to mark, no damages shall be recovered by the patentee in any action for infringement, except on proof that the infringer was notified of the infringement and continued to infringe thereafter, in which event damages may be recovered only for infringement occurring after such notice. Filing of an action for infringement shall constitute such notice.

[373] Patent act (Mark of Patent) art.187　A patentee, exclusive licensee or non-exclusive licensee shall make efforts to place a mark (hereinafter referred to as a "mark of patent") as provided by Ordinance of the Ministry of Economy, Trade and Industry, on the patented product, product produced by the patented process (hereinafter referred to as a "patented product"), or package thereof, indicating that the product or process is patented.

[374] *See* Patent Act art.103 An infringer of a patent right or exclusive license of another person is presumed negligent in the commission of the said act of infringement. This also applies in Japan. *See* Japan Patent Office, *Gaikoku Sangyō Zaisanken Seido Soudan Jirei Q&A shū (外国産業財産権制度相談 事例 QA 集)*, http://www.iprsupport-jpo.go.jp/kensaku/apic_html/seido/data/103.html. (last visited Aug. 17, 2016).

[375] ALEXANDER HARGUTH WITH STEVEN CARLSON, PATENTS IN GERMANY AND EUROPE: PROCUREMENT, ENFORCEMENT AND DEFENSE: AN INTERNATIONAL HANDBOOK (2011) 365

[376] Japan Patent Office, *Q103*, http://www.iprsupport-jpo.go.jp/kensaku/apic_html/seido/data/103.html (last visited Apr. 2, 2017)

In licensing contracts transferring IP to countries which require marking as a prerequisite for seeking compensation for damages, it becomes important to oblige the licensee to mark the products before distribution. In order to mark accurately the existence of the patent, licensors need to cooperate with the licensees because the licensees may not know exactly of what the licensed technology is comprised, especially when the license is a package of individual intellectual properties, for example trade secrets and patents.[377]

While patent marking is not mandatory in many important jurisdictions, false marking is prohibited in most important jurisdictions. In the United States, false marking is prohibited under §292 of U.S.C. 35.[378] In Japan, false marking is prohibited under

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[377] *See supra* note 165 191

[378] USC 35 §292 (2015) Whoever, without the consent of the patentee, marks upon, or affixes to, or uses in advertising in connection with anything made, used, offered for sale, or sold by such person within the United States, or imported by the person into the United States, the name or any imitation of the name of the patentee, the patent number, or the words "patent," "patentee," or the like, with the intent of counterfeiting or imitating the mark of the patentee, or of deceiving the public and inducing them to believe that the thing was made, offered for sale, sold, or imported into the United States by or with the consent of the patentee; or

Whoever marks upon, or affixes to, or uses in advertising in connection with any unpatented article, the word "patent" or any word or number importing that the same is patented, for the purpose of deceiving the public; or

Whoever marks upon, or affixes to, or uses in advertising in connection with any article, the words "patent applied for," "patent pending," or any word importing that an application for patent has been made, when no application for patent has been made, or if made, is not pending, for the purpose of deceiving the public—

Shall be fined not more than $500 for every such offense. Only the United States may sue for the penalty authorized by this subsection.

(b) A person who has suffered a competitive injury as a result of a violation of this section may file a civil action in a district court of the United States for recovery of damages adequate to compensate for the injury.

(c) The marking of a product, in a manner described in subsection (a), with matter relating to a patent that covered that product but has expired is not a violation of this section.

Section 188 of the Patent Act.[379] In Germany, their unfair competition law, or Gesetz gegen den unlauteren Wettbewerb, UWG §5 prohibits the act of false patent marking as an act of unfair competition.[380]

The liability for false marking may extend to the licensor under certain circumstances. If the licensor was aware of and benefited from the false marking, the licensor would be held liable for the damages caused to third parties in the United States[381] and most likely in Japan[382] as well.

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[379] Patent Act art.188 (Prohibition of false marking)
It shall be prohibited for a person to do the following acts:
(i) putting a mark of patent or a mark confusing therewith on or in a non-patented product or the packaging thereof;
(ii) assigning, etc. or displaying for the purpose of assignment, etc. a non-patented product or the packaging thereof on or in which a mark of a patent or a mark confusing therewith is put;
(iii) giving in an advertisement an indication to the effect that a non-patented product is related to a patent or an indication confusing therewith for the purpose of having the product produced or used, or assigning, etc. the product; or
(iv) giving in an advertisement an indication to the effect that a non-patented process is related to a patent or an indication confusing therewith for the purpose of having the process used, or assigning or leasing the process.

[380] GESETZ GEGEN DEN UNLAUTEREN WETTBEWERB [UWG] (The Act against Unfair Competition) §5 (1) Unfairness shall have occurred where a person uses a misleading commercial practice. A commercial practice shall be deemed to be misleading if it contains untruthful information or other information suited to deception regarding the following circumstances…
3. the nature, attributes or rights of the entrepreneur such as his identity, assets, including intellectual property rights, the extent of his commitments, his qualifications, status, approval, affiliation or connections, awards or distinctions, motives for the commercial practice or the nature of the sales process;

[381] *See supra* note 165 192. Cannady points out the possibility of licensors being held liable under a rule of reason analysis.

[382] Civil Code art.709 A person who has intentionally or negligently infringed any right of others, or legally protected interest of others, shall be liable to compensate any damages resulting in consequence.

In summary, countries such as Japan, Germany, China or Korea, where the patentee will not face negative consequences, determining patent marking clauses shall be done in a careful manner, as it may bring unnecessary liabilities when false marking has been carried out by the licensee. [383]

In other jurisdictions where marking is required or marking serves a tool for proving infringement[384] or blocking the infringers' defense that it did not know, without negligence, the existence of the patent in infringement litigations[385], it is mandatory or better practice to mark the patents and so appropriate clauses must be included.

3.3.12 Choice of Law and Venue

The choice of law governing the contract and the place of arbitration or adjudication shall be held shall also be a part of an agreement. The extent to which national laws[386] allow contractual freedom in determining the terms of the agreement is different from one jurisdiction to another and therefore the choice must be made carefully.[387]

In IP related contracts, the law of the IP becomes an additional point of consideration.[388] The law of the IP is the law of the country of registration. Jurisdiction is an additional separate issue determined by the courts, whether the courts have the authority to resolve the dispute.[389]

In many developing countries, there is not much freedom allowed in terms of choice of law and venue in comparison with developed countries. Some national legislations demand that their own laws be applied to technology licensing contracts.[390]

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[383] Nevertheless, marking may have an effect of warning potential infringers.

[384] E.g. Thailand, Malaysia or Vietnam. *See supra* note 376

[385] E.g. Philippines or Singapore. *See supra* note 376

[386] Relevant laws and regulations include patent law, intellectual property law, antitrust law and technology licensing regulation.

[387] *See supra* note 165 194

[388] *See supra* note 165 193

[389] *See supra* note 165 193

[390] For example, the Technology Transfer Regulations (Ghana) 10. states that

Failure to accede to those demands results in not being able to register technology transfer agreements at the relevant authorities.[391] Since the registration is a prerequisite for agreements to take effect,[392] choosing foreign laws would mean that the royalties could not be transferred to their home country. The venue is also often restricted, for example, to places other than the licensors' home country.[393]

Even if the free choice of law is allowed under national law, as is the case in China[394], it does not necessarily mean that the application of the laws of the specific country are waived. Mandatory clauses of Chinese law still apply directly to foreign-related civil relations.[395] Furthermore, upon registration of the licensing agreement, the

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"[t]echnology transfer agreement made under the Code or regulations made thereunder shall be governed by the laws of Ghana."

[391] For example, the Technology Transfer Regulations (Ghana) state that "[t]he provisions of these Regulations shall apply to all technology transfer agreements entered into under the Code or regulations under the Code" (2(1)), and [w]here there is a breach of any of the provisions of these [R]egulations, the Centre may not register the agreement, and the agreement shall be unenforceable.

[392] Technology Transfer Regulations (Ghana) 12. Unless otherwise provided in the agreement, a technology transfer agreement made under the Code shall come into force on the date it is registered by the Centre.

[393] IP Code (Phil.) § 88.3 "In the event the technology transfer arrangement shall provide for arbitration, the Procedure of Arbitration of the Arbitration Law of the Philippines or the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL) or the Rules of Conciliation and Arbitration of the International Chamber of Commerce (ICC) shall apply and the venue of arbitration shall be the Philippines or any neutral country".

[394] When one party to the contract is a foreign entity, the Minfa tongze (民法通则)[General Principles of the Civil Law] art.145 states that they can choose foreign law as the controlling law.

"Article 145 The parties to a contract involving foreign interests may choose the law applicable to settlement of their contractual disputes, except as otherwise stipulated by law." *See* also, Benjamin Bai et al., *Traps for the Unwary*, China IP Focus 2008 39-40

[395] The application of mandatory clauses of Chinese law cannot be avoided, according to the Zhonghua renmin gongheguo shewai minshi guanxi falü shiyong fa (中华人民共和国涉外民事关系法律适用法)[Law of the People's Republic of China on Choice of Law

officers would examine the terms and deny registration if it violates the mandatory clauses of the laws of the country in which the license is to be registered.[396] This factually means that if one chooses the law of a foreign country, the terms need to comply with the chosen law and the mandatory provisions of the domestic law.

The restriction on the choice of law and venue is one of the reasons that an understanding of licensing regulations in developing countries is important. Developed country licensors are "forced" to play by the rules of the licensee's jurisdiction, often without much knowledge of the regulations in developing countries, which are more often restrictive and may include more mandatory clauses than in developed countries.

In choosing the law, it is preferable to choose a law with which one is familiar. However, one should additionally consider the flexibility permitted in the jurisdictions. The flexibility permitted is different from country to country, even among developed countries.[397]

In choosing the venue, considerations important to the licensor are keeping dispute settlements in one venue in order to allow a consistent IP strategy and keep the costs low.[398] SMEs would find litigation in a faraway venue to be too costly, and therefore are likely to prefer to pick a venue close to their place of operation.[399] Parties may also have concerns about location biases, and therefore choose a venue which would be the most favorable to them, or could at least be reasonably believed to be able to provide a neutral judgment.

In reality, the decision is often based on the balance between the bargaining power of the parties.[400] One way to reach an agreement is to choose a neutral venue such as

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for Foreign-related Civil Relationships] art. 4 If there are mandatory provisions on foreign-related civil relations in the laws of the People's Republic of China, these mandatory provisions shall directly apply.

[396] Interview with Ms. Xiaoqin Huang, Deputy Director of the Service Trade Office, Department of Commerce of Hubei Province (Jan.2016)

[397] *See supra* note 165 194

[398] *See supra* note 165 193

[399] *See supra* note 165 193

[400] *See supra* note 165 193

Singapore or Geneva.[401] The issue of the choice of law still remains, but one could be more assured that the recognition of the facts and the application of law would be undertaken in a neutral manner.

The aforementioned licensing regulations in developing countries would on the one hand enable licensees in developing countries with less bargaining power to conclude a deal in a more favorable manner. On the other hand, especially if the licensing regulations in a specific country is too rigid, a licensor may simply avoid licensing in these countries fear of the law being imposed on them.

3.3.13 Dispute Resolution

Alternate dispute resolution methods the parties would choose instead of or before litigation, such as arbitration and mediation, may also be written in the agreement when both parties agree that it would be preferable to litigation in courts. Arbitration and mediation are two possible ways of resolving a dispute outside the courts, but they are different in several important respects.

First of all, arbitration is necessarily binding but mediation is not.[402] This means that arbitration brings an end to the dispute at hand as an alternative to litigation[403], but mediation does not, unless the parties voluntarily find a middle ground to which they could agree. Mediation therefore works only when the parties still have common interest in continuing the relationship.[404] Secondly, arbitration always involves an arbitrator (or arbitrators) but mediation does not necessarily involve a mediator. It can also be arranged between the parties.[405]

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[401] *See supra* note 165 194

[402] "Both arbitration and mediation employ a neutral third party to oversee the process, and they can both can be binding. However, it is common to employ mediation as a non-binding process and arbitration as a binding process." Findlaw, *Mediation vs. Arbitration vs. Litigation: What's the difference?,* http://adr.findlaw.com/mediation/mediation-vs-arbitration-vs-litigation-whats-the-difference.html. (last visited Aug. 13, 2016).

[403] *See supra* note 402 "…binding arbitration replaces the trial process with the arbitration process"

[404] *See supra* note 165 198

[405] *See supra* note 165 194

Although mediation itself is a useful tool for dispute resolution[406], mandatory mediation clauses have little practical use. When the parties see a possibility of finding a middle ground and are interested in maintaining a relationship, they could initiate the mediation process even if not required to do so by the initial agreement.[407] In other cases, mediation would not yield positive results. Mandatory mediation clauses can even be harmful if one of the parties uses it as a tactic to delay litigation and harm the other party.[408] Mandatory arbitration on the other hand would have the effect of resolving the dispute in an irrevocable manner similar to litigation but with more flexibility in the procedures.

Arbitration and litigation have a similar legal effect in many jurisdictions. For example, in Japan, the Arbitration Act (2003) Article 45 (1) provides that "[a]n arbitral award (irrespective of whether or not the place of arbitration is in Japan; hereinafter the same shall apply in this Chapter) shall have the same effect as a final and binding judgment". A civil execution may also be carried out by the courts, absent existence of exceptional factors.[409]

German law also has a provision in their Code of Civil Procedure ("Zivilprozessordnung") stating that "[t]he arbitral award has the same effects between

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[406] According to the British Columbia International Commercial Arbitration Center, "[m]any people report a higher degree of satisfaction with mediation than with arbitration or other court processes because they can control the result and be part of the resolution." *See* British Columbia International Commercial Arbitration Centre, *Difference between arbitration and mediation*, http://bcicac.com/about/what-is-mediationarbitration/difference-between-arbitration-and-mediation/. (last visited Aug. 17, 2016).

[407] *See supra* note 165 197

[408] *See supra* note 165 198

[409] CHŪSAI HŌ [ARBITRATION ACT] art.46 (1) A party, who intends to have a civil execution based on an arbitral award carried out, may file an application with the court for an execution order (meaning an order allowing the civil execution based on an arbitral award; the same shall apply hereinafter), by specifying the obligor as the respondent.

the parties as a final and binding court judgment."[410]

Similarly, in the United States, The Federal Arbitration Act[411] provides that agreements to arbitrate are valid, irrevocable, and enforceable. 35 USC § 294 states that "[a]n award by an arbitrator shall be final and binding between the parties to the arbitration."

The difference between arbitration and litigation is that arbitration is more flexible in terms of the decision maker (the arbitrator or judge) and the arbitration service[412], the confidentiality of the proceedings or to the extent that discovery is allowed. [413] An arbitrator can be an expert in the technology or intellectual property law, whereas a judge may or may not be an expert, depending on the system of the judiciary in the jurisdiction.[414] Arbitration could be entirely confidential, whereas court proceedings can only be confidential in part.[415] Full discovery is allowed in court proceedings, but the parties can predetermine in the licensing agreement the extent of discovery if a dispute occurs. [416]

Another important difference is that there are limitations to the effect of the decision. In Japan, patents could be invalidated only through proceedings in the Patent Office[417], therefore the validity of the patent, even raised in arbitration, would not lead to the invalidity of the patent with respect to third parties. In Germany, patents could only

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[410] ZIVILPROZESSORDNUNG [ZPO](CODE OF CIVIL PROCEDURE) § 1055 Wirkungen des Schiedsspruchs. Der Schiedsspruch hat unter den Parteien die Wirkungen eines rechtskräftigen gerichtlichen Urteils. Translation available at *Deutsche institution für Schiedsgerichtsbarkeit (DIS) e.V. - German Institution of arbitration - Internetportal*, http://www.dis-arb.de/de/51/materialien/german-arbitration-law-98-id3. (last visited Aug. 13, 2016).

[411] U.S.C. 9 (2006)

[412] *See supra* note 165 196

[413] *See supra* note 165 196

[414] *See supra* note 165 195

[415] *See supra* note 165 195

[416] *See supra* note 165 196

[417] For details of the patent invalidation system in Japan, *see* supra note 151

be invalidated in the Federal Patent Court (Bundespatentgericht), therefore the arbitration proceedings cannot influence the validity of the patents.

In the U.S.A., however, patents can be invalidated in court proceedings. It therefore raises the question of whether or not the decision of the arbitration questioning the validity of the patent would influence the validity of the patent with effect to third parties. 35 USC §294 states that "[a]n award by an arbitrator shall be final and binding between the parties to the arbitration but shall have no force or effect on any other person." However, 35 USC §294 also requires that the award made by an arbitrator be notified to the director of the USPTO and that the director enter the award in the record of the prosecution of the patent in question. [418] This may be "very dangerous" for the patentee, as third parties may use it against them in future litigations or arbitrations.[419]

Difference in other aspects such as the cost and speed depend on the courts and the arbitrators, and are not suitable for a simple comparison. In terms of costs, surveys show that the arbitration in the United States is cheaper than litigation in the United States.[420] An important factor in determining the cost is whether or not discoveries are

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[418] 35 USC §294 (d) When an award is made by an arbitrator, the patentee, his assignee or licensee shall give notice thereof in writing to the Director. There shall be a separate notice prepared for each patent involved in such proceeding. Such notice shall set forth the names and addresses of the parties, the name of the inventor, and the name of the patent owner, shall designate the number of the patent, and shall contain a copy of the award. If an award is modified by a court, the party requesting such modification shall give notice of such modification to the Director. The Director shall, upon receipt of either notice, enter the same in the record of the prosecution of such patent. If the required notice is not filed with the Director, any party to the proceeding may provide such notice to the Director.

[419] J. Derek Mason, *Arbitration Of Patent Disputes In The United States*, LES JAPAN NEWS Vol. 52, No. 3 (2011).

[420] *See supra* note 419 "The American Intellectual Property Law Association Economic Survey of 2009 reported that the median costs for Patent Infringement Litigation, wherein the amount at i2, No. 3 (2011).

[420] *See supra* note 419 "The American Intellectual Property Law Association Economic Survey of 2009 reported that the median costs for Patent Infringement Litigation, wherein

limited.[421] If discovery is limited by the initial licensing agreement or subsequent agreement between the parties, then the attorneys' fees could be lower due to there being less work and could compensate for the high arbitrators' fees.[422] However, if full discovery is required, courts could be a more affordable alternative as they adopt measures to streamline the written discovery process to save time and the work required, and filing fees are lower in the courts.[423] When a dispute involves multiple jurisdictions, arbitration could provide a one-stop solution rather than having parallel litigation in multiple jurisdictions and therefore reduce the overall cost.[424]

In terms of speed, arbitration is generally considered to be faster than the courts but it depends on the jurisdiction, the arbitrator and the complexity of the case.[425]

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the amount at issue was from $1-25 million dollars, was $2,500,000 inclusive, with $1,500,000 being the median costs for discovery alone. Depending on the voracity with which the parties litigate, the costs can be significantly higher. An appeal to the Federal Circuit can add at least another $2,000,000 to the total costs. In contrast, the costs for arbitration are often well below one million dollars. Depending on the body selected by the parties to run the arbitration, the filing fee for a case where the amount at issue varies from $1,000,000 to $5,000,000 may be as little as $11,450. Although the attorney fees will remain at their standard rates, the time required to prepare and submit a dispute to arbitration is much less then that required for litigation. Moreover, "pre-trial" procedures, which can cost on average $1,500,000 in litigation, are streamlined in arbitration; and it is in the discretion of the arbitrator to allow the parties to conduct any depositions and/or other pre-trial discovery procedures."

[421] However, limiting discovery is not always possible. *See supra* note 165 196. "However, arbitration does not necessarily mean limited discovery, because it is difficult to resolve complex disputes without reference to documents and information in the possession of the adverse party."

[422] *See supra* note 165 195-196

[423] *See supra* note 165 195-196

[424] Finnegan, *Arbitration rules for patent infringement disputes*, http://www.finnegan.com/resources/articles/articlesdetail.aspx?news=8e6e7565-ab05-4500-bdfe-910d6b7b3fcd. (last visited Aug. 13, 2016).

[425] *See supra* note 419 "Since the decision of the arbitrator is binding, the time for resolution of a patent dispute via arbitration can be as short as a matter of months."

In summary, it is useless and sometimes even harmful to have mandatory mediation clauses, but arbitration clauses are useful when the parties want a fast, confidential, one-stop resolution of disputes or would want to limit discovery.

3.3.14 Termination of the Agreement

An agreement is terminated when the term has expired, or is terminated before the end of the term.[426] Survival provision refers to the provisions in the agreement which continues to be in force after the termination of the agreement.[427] The term, the conditions for termination and the survival provisions, are necessary components of a licensing agreement. Sometimes cure provisions are added, which states how the breaching party can avoid the termination of the contract.[428]

A shorter term would enable parties to re-negotiate the terms upon renewal of the contract. A longer term would provide stability but would bring risk if the licensing does not bring the expected outcomes. The standpoint of the parties would be influenced by the expectations of the commercial landscape in the future and the parties' bargaining power.

When the commercial landscape is expected to change in a direction that increases the profitable use of the technology, the licensor may want a shorter term. From a licensee's perspective, when the bargaining power of the licensee is expected to increase, the licensee would want a shorter term. [429]

On the other hand, when a licensor's bargaining power is strong and the licensor wishes to lock the licensee in conditions favorable to the licensor, the licensor may want to have a longer term. When a licensee needs a huge investment in implementing the technology, the licensee may want to have a term long enough to recoup the investment and to earn sufficient profits. [430]

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[426] *See supra* note 165 200

[427] *See supra* note 165 200

[428] *See supra* note 165 200

[429] *See supra* note 165 201

[430] *See supra* note 165 201

It should also be mentioned that a licensee may strongly oppose leaving any possibility of termination by the licensor before the termination of a patent because that would place the licensor in a very strong bargaining position in the event that the licensee would like to continue to use the patent.[431]

There are some limitations on the term of the contract based on national law. The term of a licensing agreement cannot exceed the term of the patent when patents are the subject matter of the agreement, since the subject matter cannot be an expired IP.[432]

For IP without a specified term, such as trade secrets, there are no limitations to the term. However, some national laws limit the terms of licenses. For example, in Ghana, the terms of licenses are restricted to 10 years, with the possibility of extending the agreement based on the parties' consent.[433]

This becomes problematic when survival provisions that "prohibit the manufacture or sale or both of products based on the technology transferred on the expiration of the agreement, or prohibit the use of licensed technical know-how acquired from the use of the licensed technology after the expiry of the agreement" are "inapplicable and unenforceable."[434] The two sections, when combined, mean that if the licensee does not consent to the renewal of the agreement, licensed trade secrets could be used freely after the first term of the contract. When there are continuing cooperative relationships between the parties, the licensee may wish to renew the contract and obtain support from the licensor rather than benefit from the free use of the technology. However, when the licensee is no longer benefiting from the contract, the licensee may not want to consent to the renewal of the contract.

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[431] See supra note 299

[432] For example, the Technology Transfer Regulations (Ghana) 4. (h) state that "clauses which require payment for patent and other industrial property rights after their expiration, termination or invalidation" is inapplicable and unenforceable.

[433] Technology Transfer Regulations (Ghana) 9. The duration of a technology transfer agreement shall be for a period not exceeding ten years, but an agreement may be renewed where it is considered desirable by the parties for subsequent terms each not exceeding five years.

[434] Technology Transfer Regulations (Ghana) 4.(i)

The termination of contracts is allowed or limited by law under certain circumstances regardless of the contract, depending on the jurisdiction.

In Japan, termination and cancellation are not clearly differentiated in the Civil Code; however, cancellation has the effect of canceling the contract, thus rendering the contract non-existent from the beginning[435], whereas termination terminates the contract, meaning that the contractual relationship ceases to exist after the termination.[436]

The Civil Code provides for two types of cancellation rights– statutory cancellation rights and cancellation rights based on contract.[437] Statutory cancellation rights are granted to one party when the other party's performance of their obligation is delayed[438], or the performance of their obligation is rendered impossible due to reasons attributable to the obligor.[439]

Termination of some continuous contracts, such as a licensing contract without a fixed term can be done at any time during the term of the contract[440], according to Civil

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[435] When a contract is cancelled, the contract is deemed to be non-existent from the beginning. *See* Civil Code art.545 (1) If one of the parties exercises his/her right to cancel, each party shall assume an obligation to restore the other party to that other party's original position; provided, however, that this shall not prejudice the rights of a third party.

[436] Hiroshi Kaneko, KAIYAKU (解約) HŌRITSUGAKU SHŌJITEN 96 (4 ed. 2006).

[437] Civil Code art.540 (1)If one of the parties has a right to cancel in accordance with the provisions of the contract or law, the cancellation shall be effected by manifestation of intention to the other party.

[438] Civil Code art.542 In cases where, due to the nature of the contract or a manifestation of intention by the parties, the purpose of the contract cannot be achieved unless the performance is carried out at a specific time and date or within a certain period of time, if one of the parties has failed to perform at the time that period lapses, the other party may immediately cancel the contract without making the demand referred to in the preceding Article.

[439] Civil Code art.543 If performance has become impossible, in whole or in part, the obligee may cancel the contract; provided, however, that this shall not apply if the failure to perform the obligation is due to reasons not attributable to the obligor.

[440] Civil Code art.617 (1) If the parties do not specify the term of a lease, either party may request to terminate it at any time. In such cases, the leases listed in the following items

Code Article 617 (for lease contracts) or Civil Code Article 627 (for employment contracts)[441]. For contracts with a term, a default of obligations is necessary for the termination of the contract.[442] However these articles apply only to specific types of contracts and not to general contracts. There are no statutes in the Civil Code that restricts or allows the termination of continuous contracts in general.

Judicial precedents on the circumstances under which the termination of continuous contracts in general are allowed pose some limitations on the freedom to terminate the contract.[443] Some cases state that the general principle is that unilateral termination is allowed when prior notice has been given. In other cases, factors rendering difficult the continuation of the contract are required. For example, in the "Shiseido" case[444] the Tokyo High Court stated that "unavoidable grounds" need to exist in order to terminate the contract, even if the agreement has a clause stating the right of termination. In summary, it can at least be said that, in general, continuous contracts can be terminated when reasons which make the termination unavoidable exists.

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shall terminate on the expiration of the respective periods from the day of the request to terminate prescribed respectively in those items ….
Note that this article applies only to lease of land, buildings, movables or seatings

[441] Civil Code art.627 (1) If the parties have not specified the term of employment, either party may request to terminate at any time. In such cases, employment shall terminate on the expiration of two weeks from the day of the request to terminate.

[442] For lease contracts, the article does not provide specific conditions under which termination is allowed absent the prior reservation made by the parties. It is therefore considered that one could cancel the contract based on MINPŌ [CIVIL CODE] art.540. Cancellation of lease contract has an effect only for the future (Civil Code art.620 In cases where a lease is cancelled, the cancellation shall be effective solely toward the future. In such cases, if one of the parties is negligent, claims for damages against that party shall not be precluded.)

[443] LEGISLATIVE COUNCIL, CIVIL LAW (OBLIGATION-RELATED) SUBCOMMITTEE, MINISTRY OF JUSTICE, CONSIDERATIONS OF CIVIL LAW (OBLIGATION-RELATED) DISCUSSION POINTS (民法(債権関係)の改正に関する論点の検討) (2012) http://www.moj.go.jp/shingi1/shingi04900158.html. (last visited Apr. 2, 2017) 47

[444] Tokyō Kōtō Saibansho [Tokyo High Ct.] Sep. 14th, 1994 Hanta 877 gō p.201 aff'd Saikō Saibansho [Sup. Ct.] Dec. 18, 1998 Hei 6 (o) no.2415 MINSHŪ 52KAN 9GO p.1866

In the United States, there are two types of termination – termination for convenience and termination for cause.[445] Termination for cause can be applied in cases where there is a breach of contract or a failure to conduct business in usual order,[446] and termination for convenience is based on a mutually agreed right to terminate the contract absent a breach of contract.[447] The legal basis for termination for cause can be either the general principles of contract law or the licensing agreement. The legal basis for termination for convenience must be always the licensing agreement.[448] With regard to individual clauses, there are some bankruptcy law based restrictions on the termination clauses. [449]

3.3.15 Failure of the IP

Failure of the IP terms describe the consequences of the subject matter losing its status as an IP.[450] This happens when a patent application is rejected, a patent is invalidated, the licensor fails to maintain the patent, or a trade secret falls into the public domain by losing its status as a "secret". [451]

If the licensing agreement does not have a "failure of the IP" clause, then the licensee may terminate the agreement and seek refunds for the payment. The licensee can

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[445] Donald M. Cameron & Rowena Borenstein, Key Aspects of IP Licensing Agreements (Ogilvy Renault 2003) 32

[446] *See supra* note 445 33

[447] Robert K. Cox, *Termination for convenience clauses – limitless or limited authority to terminate?*, WILLIAMS MULLEN, http://www.williamsmullen.com/news/termination-convenience-clauses-%E2%80%93-limitless-or-limited-authority-terminate. (last visited Aug. 13, 2016).

[448] Hellmuth & Johnson PLLC, *Understanding contract termination* (Nov. 15, 2011), http://www.hjlawfirm.com/blog/53-understanding-contract-termination. (last visited Apr. 2, 2017)

[449] *See supra* note 445 33

[450] *See supra* note 165 206

[451] *See supra* note 165 206

even seek reimbursement for investing in the implementation of the technology.[452] U.S. case law states that this can be avoided when the agreement addresses the possibility of the failure of IP and provides for reduced royalties.[453]

In Japan, there are two possible legal arguments a licensee could make when demanding a refund in the case of failure of the IP.

The first is cancellation of the contract based on Civil Code Article 95, which denies the effect of the manifestation of intention when "there is a mistake in any element of the juristic act in question" and renders the contract invalid.[454] This would enable the licensee to seek a refund based on Civil Code Article 703, which obliges the beneficiary of the property of others without legal cause to return the property. [455]

Whether Article 95 is applicable depends on whether or not the "mistake" exists. There are no generally applicable rules, however courts are cautious in applying Article 95 to cancel a licensing agreement.

For example, the Tokyo District Court has decided[456] that, even if the non-refund is not stated in the agreement, when other clauses defines the consequences of the invalidation or the denial of the patent, Article 95 is not applicable. (Therefore, the cancellation was not allowed.)

In another case, the same court decided[457] that, when the non-refund clause exists and the licensee had doubts about the validity of the patent, Article 95 is not applicable either. The question remains when the licensee did not have doubts about the validity of

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[452] *See supra* note 165 206

[453] Aronson v. Quick Point Pencil, Co.

[454] *See* Yuichi Shiraki, *Jisshi Keiyaku ni okeru Sakugo Mukō no Shuchō (実施契約における錯誤無効の主張)*, PATENT 2010 Vol.63 No.7. for detailed discussion.

[455] Civil Code art.703 A person who has benefited (hereinafter in this Chapter referred to as "beneficiary") from the property or labor of others without legal cause and has thereby caused loss to others shall assume an obligation to return that benefit, to the extent the benefit exists.

[456] Tōkyō Chihō Saibansho [Tokyo Dist. Ct.] Jan.13 2009, Hei 19 no.28849

[457] Tōkyō Chihō Saibansho [Tokyo Dist. Ct.] Nov.29 1982, Sho 55 (wa) no.2981, 499 HANREI TAIMUZU [HANTA] 195

the patent. There is no case law on this point, but legal theory denies it due to the fact that it is impossible to predict whether or not a patent is valid, so a licensee should bear in mind, when signing a contract, the risk that a patent may be invalidated.[458] Therefore the invalidation of the patent does not constitute a "mistake" in the context of Article 95.[459]

A simpler view of the question is to allow a refund by applying Article 703 of the civil code directly. When a patent is invalidated, the patent rights which serve as the foundation of the payment are regarded as having been non-existent from the beginning, thus rendering the royalties earned by the licensor to have been earned without legal cause, according to Article 703 of the civil code.

On the other hand, though, the payment of licensing fees does not benefit only the licensee in that the licensee is merely allowed to use the technology. A licensor stands in a privileged position by comparison with others in the market by virtue of having access to advanced technology that others did not have and less competition.[460] There is, therefore, reason in the assertion that the already paid royalties shall not be considered to be without legal cause.

No clear laws or judicial precedents answer the question of whether or not a licensee could seek refund based on Article 703 for licensing fees already paid when there is no agreement between the parties.[461]

In summary, in order to avoid unexpected termination of the contract (when the

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[458] SHŪZŌ YOSHIHARA, Mukō Shinketsu ga Kakutei Shita Bāi no Shiharaizumi Jisshiryō tō no Henkan no Yōhi (無効審決が確定した場合の支払い済み実施料等の返還の要否), in HANREI RAISENSU HŌ (Hatsumeika Kyōkai 2000) 27

[459] If the licensor knowingly licenses out an invalid patent to a licensee that does not know that the patent is invalid, the licensee could cancel the contract based on the Civil Code art.96 (1) ("Manifestation of intention which is induced by any fraud or duress may be rescinded.")

[460] Yoshinori Sada, *Tokkyo Mukō to Raisensuryō ~Kibarai Raisensuryō no Henkan~ (特許無効とライセンス料～既払ライセンス料の返還～)*, NAMRUN QUARTERLY Vol.1 (2007)

[461] *See supra* note 460

subject matter involves IPs other than the invalidated IP), or a refund of royalties, and litigation on that point, it is better to decide in detail what would happen if a failure of IP were to occur. The clauses should include the royalties for individual IP, and state the consequences of failure of the IP. The consequences could include the following:

"a. a reduction in royalty or other payments;

b. whether the licensee will be entitled to recover payments made;

c. payment of royalties into an escrow pending final order;

d. recovery of damages from the licensor based on expenses incurred in reliance on the license including a cap on such damages;

e. the date when the licensee's remedy comes into effect;

f. if there is a sublicensing right, what happens to sublicense agreements and obligations to pay."[462]

3.3.16 Insolvency and Bankruptcy

Insolvency and bankruptcy clauses state what one party could do if another party is insolvent or bankrupt. They often include an "ipso facto" clause which provides for the right to terminate the contract, without notice and automatically, by the fact of insolvency or bankruptcy. In some cases, escrow clauses are also included.

Insolvency can be defined in many ways, such as "having generally ceased to pay debts in the ordinary course of business other than as a result of bona fide dispute", "being unable to pay debts as they become due"[463], or "an excess of liabilities over the fair value of assets".[464] When a party is insolvent, the insolvency clauses in the agreement come into play.

Bankruptcy clauses come to use when a bankruptcy is filed at court[465]. If a

[462] *See supra* note 165 207

[463] Uniform Commercial Code of the United States §1-201. General Definitions

[464] *See supra* note 165 209

[465] *See* HASAN HŌ [BANKRUPTCY ACT] (2004, hereinafter "Bankruptcy Act") art.15(1) When a debtor is unable to pay debts, the court, upon petition, shall commence bankruptcy proceedings by an order pursuant to the provision of art.30(1). *See also*,

bankruptcy proceedings commence, the debtor's property will constitute an estate and what the other party can do is dictated by bankruptcy law, rather than by a bankruptcy clause. Therefore bankruptcy clauses are not useful. Insolvency clauses, on the other hand, are of some use, at least until bankruptcy is filed.

Although generally seen in licensing agreements, whether or not ipso facto clauses will suit the parties' needs is unclear. If the licensor is the bankrupt party, the licensee will most likely want to maintain the license and to secure access to the technology rather than terminate the contract. Bankruptcy law provides some protection for the licensee, but the extent depends on the country.[466] In any case, these rights are provided (or not provided)

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[466] The Bankruptcy act states that "a bankruptcy trustee may cancel the contract or may perform the bankrupt's obligation and request the counter party to perform his/her obligation" (art.53(1)), which means that the trustee can decide whether or not the contract will continue.

INSOLVENZORDNUNG [INSO](German Insolvency Statute) (2011) has a similar clause. *See*

Section 103 Option to be Exercised by the Insolvency Administrator

(1) If a mutual contract was not or not completely performed by the debtor and its other party at the date when the insolvency proceedings were opened, the insolvency administrator may perform such contract replacing the debtor and claim the other party's consideration.

(2) If the administrator refuses to perform such contract, the other party shall be entitled to its claims for non-performance only as an insolvency creditor. If the other party requires the administrator to opt for performance or non-performance, the administrator shall state his intention to claim performance without negligent delay. If the administrator does not give his statement, he may no longer insist on performance.

Translation: https://www.gesetze-im-internet.de/englisch_inso/englisch_inso.html

However, the Japanese bankruptcy law was revised in 2003 in order to add protection for the licensee, and now provides an exemption to the right to cancel when the right "has a registration or meets any other requirement for duly asserting such right against any third party". (art.56(1)) In practice, the registration of non-exclusive licenses is not very common, for business and cost reasons, so the application of the exemption is mostly limited to exclusive licenses. *See* KAZUNORI YAMAGAMI ET AL., CHIZAI RAISENSU KEIYAKU NO HŌRITSU SŌDAN（知財ライセンス契約の法律相談）(Seirin Shoin 2011). 723

by the bankruptcy laws of the jurisdiction and not by the licensing agreement.

When the licensee is the bankrupt party, the trustee can either terminate the license or continue the license.[467]

When the trustee chooses to terminate the license, the licensor does not have any choice but to accept the decision, regardless of bankruptcy clauses.[468] This relieves the licensor of the concern that a license could be assigned to third parties, since the license

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In Germany, the development of legislation went in the opposite direction to that of Japanese legislation. Under the Konkursordnung, the predecessor of INSOLVENZORDNUNG [INSO] (German Insolvency Statute) licensing agreements were treated, until 1999, similarly to lease or rent contracts and they survived insolvency. *See* Claudia Milbradt & Florian Reiling, *The topic is still hot – waiting for the Federal Supreme Court*, BUSINESS LAW MAGAZINE No. 3 – September 3, 2015 14–17 (2015). However, the corresponding provision in the InsO (Section 108 "Continuity of Certain Continuous Obligations") only applies to "lease and tenancy of immovables or premises and employment relationships", and therefore licensing agreements became no longer protected. There were moves in the German government to add a new Section 108a which addresses this issue, but it was moved off the list during subsequent legislative procedures. *See* Milbradt et al (2015) 15.

In the United States, a trustee can also "assume or reject any executory contract … of the debtor" (U.S.C.11 § 365 (a)), however a licensee can retain tje rights for the duration of the contract or for "any period for which such contract may be extended by the licensee as of right" as a licensee even if the trustee rejects the contract (11 U.S. Code § 365 (n)).

In any event, these rights are provided (or not provided) by the bankruptcy laws of the jurisdiction and not by the licensing agreement.

[467] See the discussions of licensor-bankruptcy cases above, which applies also to licensee-bankruptcy cases.

[468] In Japan, the license could be maintained if the license has been registered. (*See* discussions concerning the case where the licensor is the debtor.) In Germany, there is nothing a licensor can do if the trustee terminates the license. (*See* discussions concerning the case where the licensor is the debtor.)In the U.S.A., U.S.C. 11 §365 (n) only applies when the licensor is the debtor. Therefore, at least in these jurisdictions, the licensor cannot oppose the rejection of the license while the bankruptcy proceedings in these countries are ongoing.

is terminated. [469] However the bankrupt licensee's duty to pay licensing fees would also cease.[470]

When the trustee chooses to continue the contract, the licensor still has the obligations stated in the contract, and the licensee must pay royalties. The licensor may still want to terminate that contract, but bankruptcy laws[471] do not allow the freedom to terminate it. This would trigger a concern that the license could be assigned to third parties.

Case laws and statutes in various jurisdictions have addressed this issue by limiting the assignment of licenses without the consent of the licensor. Under U.S. law,

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[469] *See supra* note 165 211

[470] *See supra* note 165 211

[471] In Japan, the Bankruptcy Act art.55 (1) states that "[t]he counter party to a bilateral contract who has an obligation to provide continuous performance to the bankrupt, after the commencement of bankruptcy proceedings, may not refuse to perform the obligation on the grounds that no payment is made with regard to the bankruptcy claim arising from the performance provided prior to the filing of a petition for commencement of bankruptcy proceedings."

In Germany, INSOLVENZORDNUNG [INSO](German Insolvency Statute)§119 voids any "[a]greements excluding or limiting the application of sections 103 to 118 in advance", meaning that an ipso facto clause would be invalid. *See* Peter Jark and Tom H. Braegelmann, *Intellectual property rights under German insolvency law* (Apr. 7, 2015) https://www.dlapiper.com/en/us/insights/publications/2015/04/global-insight-issue-13/intellectual-property-rights-under-german/ (last visited Apr. 2, 2017)

In the United States, 11 U.S.C. 365 e(1) states that, ["n]otwithstanding a provision in an executory contract or unexpired lease, or in applicable law, an executory contract or unexpired lease of the debtor may not be terminated or modified, and any right or obligation under such contract or lease may not be terminated or modified, at any time after the commencement of the case solely because of a provision in such contract or lease that is conditioned on—

(A) the insolvency or financial condition of the debtor at any time before the closing of the case;

(B) the commencement of a case under this title; or

(C) the appointment of or taking possession by a trustee in a case under this title or a custodian before such commencement."

cases suggest that federal law governs the assignability of IP established under federal law, such as patents.[472] For trade secret licenses, the state law governs assignability.[473] In the courts, non-exclusive licenses are found to be inherently personal and non-assignable.[474] In recent years, the non-assignability has been extended to exclusive

[472] PPG Industries, Inc. v. Guardian Industries Corp., 597 F.2d 1090 (6th Cir., 1979) "Questions with respect to the assignability of a patent license are controlled by federal law." *See* also, Elaine D. Ziff and John G. Deming , *IP Licenses: Restrictions on Assignment and Change of Control*, https://www.skadden.com/sites/default/files/publications/Publications2679_0.pdf, (last visited Apr. 2, 2017) 2-3

[473] However, under the Defend Trade Secrets Act of 2016 (Public Law No. 114-153), when the assignment involves trade secret theft, it may be under federal jurisdiction.

[474] Ppg Industries Inc v. Guardian Industries Corp., 597 F.2d 1090 (6th Cir., 1979) states, "[i]t has long been held by federal courts that agreements granting patent licenses are personal and not assignable unless expressly made so. Unarco Industries, Inc. v. Kelley Company, 465 F.2d 1303, 1306 (7th Cir. 1972), Cert. denied, 410 U.S. 929, 93 S.Ct. 1365, 35 L.Ed.2d 590 (1973). This has been the rule at least since 1852 when the Supreme Court decided Troy Iron & Nail v. Corning, 55 U.S. (14 How.) 193, 14 L.Ed. 383 (1852)."

licenses by case law[475], although there are some cases that were decided otherwise.[476]

When "applicable law excuses a party, other than the debtor, to such contract or lease from accepting performance from or rendering performance to an entity other than the debtor or the debtor in possession"[477], the "trustee may not assume or assign any

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[475] ProteoTech, Inc. v. Unicity Int'l, Inc., 542 F. Supp. 2d 1216, 1219 & n.2 (W.D. Wash. 2008) "[T]he recognition that an exclusive licensee has a sufficient property interest to give her standing to sue to protect her licensed patent from infringement, does not mean she can freely assign her exclusive license. The reason that the holder of an exclusive license's equitable property interest may not be freely assignable is based on the nature of rights granted under the Patent Act." "The right to use, make, or sell one's own invention does not stem from the Patent Act. What is granted by a patent is the right to exclude others from using one's invention; thus the language of the statute, `Every patent shall contain . . . a grant to the patentee . . . of the right to exclude others, from making, using or selling the invention. . . .

To adopt the Debtors' interpretation of assignability of an exclusive license would create a situation where a patent holder loses control over the identity of its license holders whenever the license agreement provides a licensee with an exclusive right. Such a result, which effectively treats the grant of an exclusive license as the equivalent of an outright assignment of the Patent, is inconsistent with federal case law 440 *440 which carefully distinguishes between the two."

Note that sole licenses or non-exclusive licenses with a limited number of licensees are also treated as "exclusive" licensees.

[476] Superbrace, Inc. v. Tidwell, 124 Cal. App. 4th 388 (2004) "The federal cases have relied on the flat statement that a license creates a merely personal right. This statement should follow as a conclusion from an examination of the purposes and provisions of the particular license, rather than stand as a self-evident first principle. Nothing in the nature of patent licenses makes the rights conferred by them necessarily so personal that the parties must have intended that they be nonassignable."

[477] U.S.C.11 §365 (c) The trustee may not assume or assign any executory contract or unexpired lease of the debtor, whether or not such contract or lease prohibits or restricts assignment of rights or delegation of duties, if—

(1)

(A) applicable law excuses a party, other than the debtor, to such contract or lease from accepting performance from or rendering performance to an entity other than the debtor or the debtor in possession, whether or not such contract or lease prohibits or restricts

executory contract or unexpired lease of the debtor". Therefore, the license cannot be assigned to third parties without the consent of the licensor, regardless of the licensing agreement in most cases. Whether or not the agreement has a clause prohibiting assignment does not play a role.

Under Japanese law, Patent Law Article 77(3)[478] and Article 94(1)[479] limits the assignment of the license to the time when the licensor consents, the business itself is assigned to a third party, or the assignment occurs as a result of general succession. For trade secrets, the general principle of the civil code shown in the judicial precedent of the Supreme Court decision on September 9th, 1955[480] applies and the status as a party to a contract cannot be assigned without the consent of the other party. Therefore, in bankruptcy cases, the assignment of trade secrets and patents to third parties cannot occur unless the parties agree to it.

A more useful clause regarding bankruptcy is an escrow clause. This applies only when the licensor is the bankrupt party. An escrow clause obliges the licensor to deposit a copy of the documents which enables the "deserted" licensee to implement the technology, develop the technology or to provide related services.[481] Normally a copy of

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assignment of rights or delegation of duties; and
(B) such party does not consent to such assumption or assignment…
See also *supra* note 165 211

[478] (3) An exclusive license may be transferred only where the business involving the working of the relevant invention is also transferred, where the consent of the patentee is obtained or where the transfer occurs as a result of general succession including inheritance.

[479] Patent Act art.94 (1) Except for a non-exclusive license granted by an award under art.83(2), 92(3), 92(4) or 93(2) of the Patent Act, art.22(3) of the Utility Model Act or Article 33(3) of the Design Act, a non-exclusive license may be transferred only where the business involving the working of the relevant invention is also transferred, where the consent of the patentee (or, in the case of non-exclusive license on the exclusive license, the patentee and the exclusive licen*see*) is obtained and where the transfer occurs as a result of general succession including inheritance.

[480] Saikō Saibansho [Sup. Ct.] Sep.29, 1955 Saihan MINSHŪ 9KAN 10GŌ, p.1472

[481] *See supra* note 165 213

the document is deposited with a third party, and is released when the conditions stated in the agreements are met.[482]

A licensor may wish to restrict the application of the escrow clause to circumstances where the licensor no longer operates.[483] If the clause applies to circumstances where the licensor fails to fulfill an obligation just once, it may be considered by the licensor to be too strict. In general, it is good practice to include an escrow clause when the agreement requires that the licensor be involved in the implementation, rather than a clause that offers a mere assurance that the licensor will not assert the patent against the licensee.

3.3.17 Assignment

As mentioned in "Insolvency and Bankruptcy", absent any written agreement, the assignment of rights as a licensor or licensee is considered impermissible in major jurisdictions. Therefore, if the rights are to be transferred, prior written agreement is necessary. Licensing agreements often includes assignment clauses for this purpose.

There are pros and cons when allowing a license or the position of a licensor to be assigned to third parties.[484] The pros are that the value of companies is enhanced by having a licensee paying licensing fees or by having access to technology when going through M&A or re-organization. The cons are that the assignee's suitability such as solvency, reliability, efficiency, etc., as a partner cannot be guaranteed.

3.3.18 Succession

Succession clauses are clauses which state that the rights and obligations would be succeeded to successors or the assigns. These clauses merely reiterate the principles of contract law and do not have much meaning in practice. When a company changes its form or name, the principle of contract law is that it succeeds all the rights and obligations.[485] When it involves mergers, whether or not the rights are succeeded depends

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[482] *See supra* note 165 214

[483] *See supra* note 165 214

[484] *See supra* note 165 217

[485] For example, In Japan, the corporation as a juridical person is the right holder, and a

on the law of each jurisdiction[486] and the merger agreement rather than the licensing agreement.

3.3.19 Confidentiality

Confidentiality clauses state the obligation of the parties to keep confidential the *existence* of the contract and/or the trade secret disclosed through the agreement.[487] The parties may wish to keep the licensing agreement secret for various business reasons, such as preventing others from knowing the direction of their business development. The licensor may refuse to allow the name of the licensor (or the name of the technology) to be used as a way of enhancing the reputation of the licensee's products.[488] Since the trade secret is considered as an IP for as long as it is kept a secret, the confidentiality agreement plays a crucial role in preserving the value of the trade secret as a property.

The confidentiality clause may cover not only the company but also the individual employees, representatives and agents of the company.[489]

3.3.20 Publicity

Publicity clauses state the details of the joint marketing of licensed products when such activities are foreseen. These clauses are necessary when the parties have the intention of marketing products jointly with reference to the licensing agreement.[490]

Sometimes the parties find that they cannot agree whether or not the fact that a licensing agreement exists can be published, and this can bring about conflict between

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change of trade name chosen by the corporation does not affect the rights and obligations of the party. When the form of the company is changed (as in KAISHA HŌ [Companies Act] (2005) art.2 (26)), it remains the same juridical person.

[486] For example, the definitions of mergers or splits are described in the Companies Act, Sections 27-30. ln the U.S.A., this is a matter of individual state law. *See* supra note 472 (Ziff et al.)

[487] *See supra* note 165 225-226

[488] *See supra* note 165 226

[489] *See supra* note 165 226

[490] *See supra* note 165 226-227

them.[491] Therefore it is good practice to predetermine whether or not the agreement should be confidential, and, if so, to what extent. If publication, at least, is allowed, a publicity clause comes into use.

The publicity clause should include the content of the announcement, the details of the drafter of the announcement, and whether or not one party can object to the publication of another party. If other joint marketing activities are necessary, that, too, should be written in the agreement. [492]

3.3.21 Generic Contract Terms

It is customary to include generic contract terms at the end of the agreement. Generic contract terms include miscellaneous terms of agreements, such as integration[493], parole evidence[494], the relationship between the parties[495], force majeure,[496] the language of the agreement,[497] notices,[498] severability,[499] waiver[500] and headings.[501] These clauses

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[491] *See supra* note 165 227

[492] *See supra* note 165 225

[493] This states that "the contract integrates in one document all of the parties' agreements on the terms covered." *See supra* note 165 230

[494] This states that "the contract may not be amended orally; amendments must be in writing signed by parties." *See supra* note 165 230

[495] This states that the relationship between the contracting parties is a mere licensor-licensee relationship. *See supra* note 165 230

[496] This "[d]efines the extraordinary conditions (for example, war and natural disasters) that will excuse the parties from performance of their obligations under the agreement." *See supra* note 165 231

[497] This states the official language of the agreement when multiple languages are used, and which language would be used in future correspondences. *See supra* note 165 231

[498] This "[i]dentifies the representative of each party to receive notices of breach, cure, and other formal notices under the agreement." *See supra* note 165 231

[499] This states that, in case a part of the agreement is found invalid in courts, the remainder would still still be valid. *See supra* note 165 231

[500] This states that, even if the parties agree to waive a certain term of an agreement, the other terms are not waived. *See supra* note 165 231

[501] This states that the headings or name of the sections of the agreement are non-binding.

are seldom important in practice, but it is nonetheless good practice to include generic contract terms.[502]

3.4 Conclusions

Licensing is one of the ways of transferring technology. The strength of licensing is that it can create a long-term cooperative relationship between licensor and licensee more easily than, for example, assignment or a declaration of non-assertion.

Preparing, negotiating, drafting, concluding and enforcing a licensing agreement costs monetary and human resources, time and effort on the part of both parties. Even before a licensing agreement is concluded and a formal legal relationship established, the parties need to cooperate factually with each other and most likely disclose some confidential information. Risk-mitigation measures must therefore be taken even during the negotiation procedure.

Licensing agreements consist of individual clauses, all of which have an impact on the characteristics of the agreement. When drafted adequately, a licensing agreement can create a long-term symbiotic relationship between the parties whereby the licensee benefits from the implementation and the licensor benefits from the success of the licensee's implementation.

On the other hand, a licensing agreement can also be a strong tool of assertion of dominance over other parties. It is to some extent natural that the licensor is in a stronger position, as the licensor possesses what the licensee wants. The lack of financial means of licensees, especially of licensees in developing countries, puts them in a further inferior position.

National regulations in developing countries often regulate licensing activities, as explained in detail in Chapter 5. As long as the regulations comply with TRIPS and other international treaties, regulatory activities are under governmental jurisdictions and could be justified to the extent necessary to protect local industries. However, regulatory efforts should take into account the complexity of licensing practices and not stifle creative licensing schemes. The licensing schemes currently available are described in detail in

See supra note 165 231

[502] *See supra* note 165 231

the following Chapter.

Chapter 4. Examples of Licensing Practices

Following the two chapters on the classification, characteristics and contents of licensing agreements, this chapter explores the licensing practices in telecommunications technology, green technology, pharmaceutical technology and biotechnology, by looking into ten creative licensing schemes in these areas – three in telecommunications technology, three in green technology, two in pharmaceutical technology and two in biotechnology. Of all the cases, half, MPEG-2 Patent Pool, ARIB Patent Pool, free licensing of KASUMI by Mitsubishi Electric, free licensing of environmentally friendly vehicles-related technology by Tesla and Toyota, and Librassay, targets interested technology users in general, while the rest, namely Eco-Patent Commons, WIPO GREEN, Medicines Patent Pool, WIPO Re:Search, and Golden Rice Project, was aimed at addressing global environmental and health issues.

These fields of technology were chosen considering the history of licensing practices in these fields and their importance for developing countries. In the telecommunications industry numerous private licensing schemes have been utilized in order to increase the efficiency of licensing agreements and to disperse the basic technology. Licensing practices in the telecommunications industry therefore have a reference value and are actually frequently referred to when licensing schemes are created in other fields.

In the pharmaceutical and biotechnology industries, licensing practice was not as developed as in the telecommunications industry, due to a lack of necessity to invent a licensing scheme in the past. In comparison with telecommunications technology licensing, which became too complicated and sometimes even close to unmanageable through traditional bilateral licensing, pharma and biotech fields differed in the following aspects. First of all, the number of patents necessary in order to manufacture an item was significantly smaller than in telecommunications. Secondly, both the inventors and users were of limited numbers. Third, the licensing fees were higher and the licensors were generally unwilling to provide licenses.

However, in recent years, the monopolization of technology in these areas was intensively criticized by developing country governments and NGOs in the public health sector, especially reflecting the HIV/AIDS crisis. Pharmaceutical companies and research

institutes started taking a positive action towards increased availability of medicine in the developing world, especially in least-developed countries. This has led to the development of creative licensing schemes in this field as well.

An additional interesting feature in biotech and pharmaceutical licensing schemes introduced in this chapter is that the subject matter of the license is sometimes not a fully developed technology. Since R&D in this area often requires heavy investment, cooperation among companies in the same field especially makes sense. Joint development itself is nothing new, but the novelty here is that an open matchmaking platform for potential partners has been provided and that the fruits of the joint development and licensing efforts are intended to be licensed out to third parties, as the main purpose of this scheme is to first bring the technology into existence and then make it widely available.

Interestingly, these collaborations and licensing schemes were only made possible because of IP protection and the power to control products stemming from the IP rights. The schemes often involve a differentiated pricing scheme, where the participants of a licensing platform commit themselves to licensing a technology out for a very low royalty rate for products sold in least-developed countries, while they are free to charge higher prices for products sold in other areas. This is a noteworthy example of how IP can aid in producing a symbiotic relationship between encouraging innovations while making the fruits of innovation widely available.

Green technology differs from the aforementioned three areas of technology, as it does not refer to a specific field of technology – it merely refers to a technology in any field that has a pro-environmental protection effect. The importance of green technology in sustainable development has been emphasized in recent years, and increased technology transfer is not only considered preferable but necessary. Green technology licensing platforms have therefore been initiated for public benefit purposes. In addition to these licensing platforms, owners of paradigm-shifting green technologies have been licensing out their technologies for free for the purpose of disseminating their technology to encourage and stimulate investment in surrounding technology and infrastructure. This could also be a potential promoter for the dispersion of green technology in developing countries.

4.1 Telecommunications technology

In the field of telecommunications technology, the MPEG-2 Patent Pool was established by Japanese companies in the 1990s as the first patent pool recognized by the competition authorities as a pro-competitive patent pool. [503] Since then, many patent pools have been formed.

There are other examples of free licensing in order to promote one's own technology. An example of free licensing is the free licensing of Mitsubishi Electric's encryption technology, MISTY. Ever since the decision to license the technology out for free, it has been adopted as one of the ISO standards and the company has seen increased adoption of its own technology in a previously US-dominated market. These examples are discussed further below as examples of successful models of licensing.

4.1.1 The mechanism of patent pools in the telecommunications field

Modern pro-competitive patent pools started in the telecommunications field, where standards play an important role and patent thicket problems were serious. As a model of patent pools, the life cycles of patent pools are discussed below based on the examples of pools managed by MPEG LA and ULDAGE, who are major pool license administrators in the U.S., Japan and the world.

4.1.1.1 The formation of patent pools

The process of forming patent pools begins during the standard setting process, by patent holders who identify themselves as standard essential patent holders. The licensing administrators may sit as an observer during the standard setting process, but do not officially participate in the standard setting procedure.[504]

The next step is to call for the formation of patent pools. Becoming a member of the patent pool is completely voluntary, even when the patent is declared as standard essential. Standard essential patents must be licensed under fair, reasonable and non-discriminatory conditions, but not necessarily as a member of the patent pool, as bilateral

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[503] Department of Justice and Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property 5.3

[504] Interview with Mr. Yoshihide Nakamura, founder and president of ULDAGE (May 2014) and Mr. Larry Horn, CEO of MPEG LA (Apr. 2014).

agreements under FRAND conditions also satisfy the requirements.

Patent holders who are interested in participating in the patent pool gather and hold a meeting discussing the foundation of the pool.[505] The patents included in the pool are determined by whether they are essential patents for the standard or not. The evaluation is done by third party evaluators.[506] After the evaluation, the owners of the patents declared as essential are allowed to join the discussion of patent holders. The rules of individual patent pools are set out by the collective will of the patent owners, not by the board of the licensing administrator.[507]

If the patent owners agree on the terms, they will call for patents, form a patent pool and start licensing out the pooled patents.[508] The patents in the pool are only available as a whole, and will not be licensed out separately. However, the patent holders and prospective licensees have the right to sign bilateral licensing agreements, or a cross licensing agreement, irrespective of the patent pool.

It is very unlikely that all of the patent holders in the initial meeting reach an agreement. However, it is also rare that the divisions between the patent holders are too great to prevent forming a critical mass. Including a certain number of patents sufficient to make the patent pool economically efficient, and allow it to serve as an insurance against otherwise possible potential lawsuits, is key to a functioning patent pool.

Normally at least a critical mass will agree on the condition and the patent pool will be formed successfully.[509] The patent holders who decided not to join the pool at first may also join the pool after the pool is formed. However, some pools distribute additional royalties called an early joiner incentive, to founding members to encourage early

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[505] HISASHI KATŌ ET AL., PATENTO PŪRU GAISETSU: GIJUTSU HYŌJUN TO CHITEKI ZAISAN MONDAI NO KAIKETSUSAKU O CHŪSHIN TO SHITE (パテントプール概説　技術標準と知的財産問題の解決策を中心として) (Hatsumei Kyōkai 2nd ed. 2009) 15, see also Dep't of Justice, Business Review Letter, June 26, 1997.

[506] *See supra* note 505 (Kato) 86

[507] *See supra* note 504

[508] *See supra* note 505 (Kato) 34

[509] Interview with Mr. Larry Horn, CEO of MPEG LA (Apr. 2014)

participation in the discussion.[510]

In the meeting, the royalty rates, fees and the distribution method of royalty rates are decided. The royalty applies equally to both insiders and outsiders of the standard setting and patent pool formation process. If an entity is a patent holder in the pool and a licensee at the same time, the net royalty payment of the entity becomes less than that of other entities who do not have a patent in the pool.

Patent pools are subject to market competition, thus there must be a reasonable balance between the two determining factors: if the royalties are too high, no one wants a license, but if the royalties are too low, no one wants to provide their patents. [511]

All patent holders have different interests, and the standpoint of each one depends on the producing capacity and the number of patents they own. In principle, the factors determining their requests can be assessed by two factors: the number of patents and the number of products the patent holders produce using the license. The more patents one owns, the higher the requirements of royalties become. By contrast, the more producing capacity they have, the lower the requirements of royalties become.[512]

As all the patents included in the patent pool are standard essential patents,[513] the patent holders have the obligation based on their prior commitment to offer licenses under FRAND conditions regardless of participation in the patent pool. Since the price of the pooled patents should be competitive in the market, among FRAND licenses, the total cost of licensing including the negotiation cost will be at least equivalent or less than the bilateral FRAND licenses if no other factors interfere with the decision. According to a study, the average royalty of a license for one patent roughly equals to the royalty of the total patent pool.[514]

Under the condition they meet the FRAND requirements, the patent holders can freely decide how much they charge for royalties and how they distribute the royalties

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[510] *See supra* note 505 (Kato) 48, 68

[511] *See supra* note 509

[512] Interview with Mr. Hisashi Kato, General Manager, Corporate Licensing Division, Mitsubishi Electric Corporation (May 2014)

[513] Patents in the patent pool are normally limited to standard essential patents due to antitrust considerations. *See supra* note 505, 39

[514] *See supra* note 505, 63

between patent holders. Normally the patent owners adopt running royalties, charging a fixed amount per product.

The distribution method of royalties collected differs from one pool to another, but the basic principle is that the royalties are distributed per patent. Additional adjustments are made, depending on the individual pool. In some pools, a part of the royalties is distributed among licensors, an equal amount per organization, and the other part is distributed between the patents, an equal amount per patent. This is to encourage patent holders with few licenses to participate in the patent pool.[515]

In some cases, the frequency of the usage of patents differ greatly, thus distributing royalties evenly to each patent would benefit the patent holder of patents which are not used so frequently, and cause disadvantages to patent holders whose patents are used more often. In order to include patent holders with popular patents in the patent pool, the patent owners can agree to distribute the royalties unequally among patent owners based on the frequency of use.

As an exception, when a certain patent is crucial to the success of the patent pool for various reasons, such as patents which have already undergone lawsuits and been found to be valid, or the patent itself has a very important market value.[516] In such cases, the patent holder may take a certain percentage of the royalty before the distribution starts.[517]

In some pools, there is a cap set on the annual royalty paid by a single licensee and its affiliates.[518] This means that if the usage exceeds a certain amount, then there will be no additional charging of royalty, and the licensees need not report the amount they have used. For larger companies, they could reasonably predict the maximum amount of

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[515] *See supra* note 504 (Interview with Mr. Nakamura)

[516] In the case of ATSC patent pool managed by MPEG LA, there was a patent holder who had a valuable patent and was enforcing it aggressively, proving that the patents were valid in court. The other patentees really wanted them to be in the patent pool, and as a result of the discussion, they agreed to give a bigger share of the royalty rates to that particular patent holder. *See supra* note 509

[517] *See supra* note 509

[518] *See supra* note 509

royalty payment, and for software companies for example, it relieves them of the difficult task of counting the actual number of products distributed. This limits the maximum profit the patent holders can make but, on the other hand, it contributes to the promotion of technology. [519]

On the other hand, for newcomers in the industry who wish to promote their products on an experimental basis, some pools have a threshold under which no royalties can be charged. If many patentees believe that expanding the number of players in the market in this manner contributes to their own future sales, they may agree to set such a threshold.[520]

4.1.1.2 Managing a patent pool

The work of managing a patent pool starts from choosing the standard suitable for patent pools, unless the company is founded with the aim of managing a particular patent pool, as in the case of the MPEG 2 standard and MPEG LA, and the ARIB standard and ULDAGE.

Patent pools are likely to be formed when a standard (or a particular type of product) belongs to the field where interoperability or the unification of formats is required for each product. It must also involve a lot of standard essential patents which complement each other, owned by many patent holders, and have lots of prospective licensees producing a broad range of products.[521]

Then the licensing organization calls for a formation of patent pools. Once the patents of the patent holders willing to participate in the negotiation reach a certain number, and the patents are evaluated to be standard essential patents, they hold a meeting to decide the conditions of licensing.[522]

The patents are only included in the pool if they are essential patents. The essentiality is determined by a third party.[523] Once initial patents included in the pool are

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[519] *See supra* note 509

[520] *See supra* note 509

[521] *See supra* note 505 (Kato) 34

[522] *See supra* note 509

[523] MPEG LA hires evaluators and lawyers in the U.S., EU, Japan and Korea, and recently China has also made such a list, and they evaluate the patent by the "one independent

determined, licensing organizations start licensing the patents to producing entities. A non-discriminatory patent pool allows everyone to be a licensee as long as they are manufacturers of related products. The possibility of discounts when licenses from two or more patent pools are used on the same product can differ from one licensing organization another.[524]

Licensing administrators' source of profit is the fees they collect from the royalties.[525] If they fail to collect the royalties, which does not happen very often, they cannot collect the corresponding fees.[526] If a licensee fails to pay the royalties and consequently the fees, licensing administrators may start a breach of contract action, which is based on the contract, not patent rights. Additionally they may exercise auditing rights.[527]

Infringement is easier to detect when a pool is formed, as when an entity is producing a product based on a standard without obtaining a license, one could be almost certain that the implementer is an infringer (unless it has individual agreements with all

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claim test", which means that at least one independent claim must read on the standard. ULDAGE requires all prospective licensors to first apply for evaluation by a third party organization, the Japan Intellectual Property Arbitration Center. *See supra* note 504

[524] It has not realized so far in MPEG LA, primarily because each pool is administered independently, making it difficult to reach such agreements. Another reason is that it may cause competition problems, because once a producing entity has a license from one of the pools, a technology competing outside the patent pool will be less favored than the technology inside the patent pool, which will be discounted. In ULDAGE, it is possible to get discounts when patents from more than one patent pool are used, because all the pools are aimed at the same group of products, making it more likely that the "patent pool thicket" problem occurs. (The term "patent pool thicket" refers to a situation where patents from plural patent pools are used in one product, the accumulated royalty will become unaffordable, or less affordable. The author coined the term based on the ideas Kato presents in his book, supra note 505, 148-157.)

[525] In the case of MPEG LA, the percentage of the fee depends on each patent pool, but mostly around 10-20% of the royalties.

[526] *See supra* note 509

[527] *See supra* note 509

the licensees).[528]

In the case an infringement is found, negotiations are held and if the infringer refuses to conclude a contract or cease the infringing activities and pay royalties, they are taken to court.[529] Note that the managing company has no right to enforce patents because its status is defined as only one of the non-exclusive licensees[530] - they can merely suggest the patent holders file lawsuits. The managing company plays a coordinating role in the lawsuit, advising on strategies, but the decision to file a lawsuit is taken out individually.[531]

Participating in a lawsuit is risky, as they may even lose their patents. Some pools allow the patentee to get a special amount of royalty when the licensee finally agrees to obtain a license from the pool.[532] There is an opportunity for patent holders in the pool to go into jointly funded litigation. Based on the initial agreement, a certain part of the royalty is held back for future possible litigation, making it possible for members without

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[528] *See supra* note 504

[529] MPEG LA pools have achieved between 85% and 100% compliance across all product sectors through licensing negotiations. They are also competent of finding infringements of patents in the pool as they devote a part of their human resources for this purpose. ULDAGE on the other hand achieves a nearly 100 % compliance rate. It has not been part of any lawsuits throughout its history. It has been possible to manage all conflicts by negotiations, due to the fact that the licensors are mostly major Japanese firms, and also the president of the company is very well known among IP practitioners in Japan, making it very difficult for small companies to ignore the patents or the licensing organization.

[530] *See supra* note 505 (Kato) 51

[531] The difference between Japanese and American companies reflects the different attitude of licensees towards patents and their owners. Japanese companies do not want to get in trouble with the licensors, who are all extremely large and prestigious companies in Japan. However, the American companies first try to avoid signing licensing agreements – some companies do not seek to get a license until they get sued. However, currently the problem of some foreign manufactures refusing to become licensees is causing an issue for ULDAGE. It still seeks to resolve the disputes through original methodologies, but it is becoming increasingly difficult to achieve their goal without resorting to lawsuits.

[532] *See supra* note 509

their own funds to litigate.[533]

4.1.1.3 The termination of patent pools

Patent pools will not continue eternally because the patents will expire after 20 years from the filing date. The number of patents may gradually grow at first, as new licensors join the patent, and then start to decrease as the patents expire one by one. As with the MPEG 2 patent pool, the last Japanese patent expired in 2015, the last US patent expires in 2018, and the last patent, which is a Malaysian patent, expires in 2025.[534]

Royalty rates may decrease as the pool includes lesser patents, and the product prices become lower as they become commodities, not cutting-edge products as they were when they were new on the market. Some patent pools lower royalties by changing the price at once, while others gradually decrease the royalty rate.[535]

4.1.2 Advantages of patent pools

The significance of the invention of a new competition friendly patent pool is the economic benefits to the licensors, licensees and to some extent, consumers by reducing the transaction cost for technology licensing.

4.1.2.1 Licensors

Joining a patent pool usually means that the patent owner will earn less than what they get from bilateral licensing in terms of royalty per product. Nevertheless, at least some of the patent holders who join them recognize the pool as a way to increase income.

For patent holders without the ability or capacity to license out the technology themselves, joining a patent pool is a way to increase income where no income was originally anticipated.[536]

Other patent holders, typically universities or research institutes, or small and medium sized enterprises, do not have enough resources to assert patent rights in case of infringement.[537] This happens typically in the United States, where some infringers only

[533] *See supra* note 509

[534] *See supra* note 509

[535] *See supra* note 505(Kato) 128

[536] *See supra* note 515

[537] *See supra* note 509

sign licensing agreements under the threat of lawsuits,[538] and the court fees are extremely high so that the aforementioned patent holders cannot afford them. The infringers see right through the financial strength of the company and if regarded as insufficient to go to court, they can just disregard the existence of the patents.

Lastly, the royalty per license decreases by joining the patent pool, but the amount of licenses is likely to increase due to the high compliance rate, thus cancelling out the negative effect of the decrease in per license royalty to some extent.[539]

In addition to increased income, patent holders could save expenditure by joining the patent pool. In terms of administrative costs, licensing organizations bear such costs as collecting royalties, checking infringements and signing licensing agreements with licensees. Concerning the negotiating cost, which otherwise must be born each and every time they wish to negotiate licensing agreements, these will be significantly lower once they have joined the pool. Typical bilateral licensing negotiations take up to two to three years,[540] making it unaffordable for companies without enough human resources.[541] Furthermore, promotion costs could be reduced dramatically.

For patent holders, patent pools also work as an "insurance", because it is less likely to be attacked. If a patent holder has only very few patents and wishes to assert them, the patents would most likely be attacked by the alleged infringers by invalidation actions.[542] However, if they are part of a bundle of patents licensed under the same price, it is no use invalidating one patent, as the total price will remain unchanged.[543]

Lastly, some patentees favor the spread of their technology and standards, as in the case of the MPEG-2 standard, for many reasons. Pure licensors with no production capabilities favor the promotion of standards because that means more prospective

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[538] Interview with Prof. Adam Mossoff, George Mason University School of Law (May 2014)

[539] *See supra* note 509

[540] *See supra* note 509

[541] *See supra* note 512

[542] *See supra* note 515

[543] The discouraging mechanism of infringement action, on the other hand, brings the problem of invalid patents being included in the portfolio. *See supra* note 505 (Kato) 78

licensees. For manufacturers, the promotion of a standard to which they belong may ultimately lead to selling their own products. For them, non-discriminatory patent pools are a good platform to promote the technology by making the license affordable to everyone.[544]

4.1.2.2 Licensees

The benefits for the licensee is also significant. To begin with, the royalty per product will usually be much lower than the total amount charged by each bilateral license,[545] allowing the licensees to save royalty expenditure.

Also, the cost of negotiation will be significantly lower than in case of bilateral agreements for each and every product. The negotiation cost is so high for both the licensor and the licensee, creating the situation where the licensor does not even start negotiating with small and medium sized enterprises, expecting little in royalties compared to the huge negotiation cost.[546]

Furthermore, the foreseeability of the result of negotiations for licensing agreements increases dramatically. Patent pools in principle offer non-discriminatory access to the patents, if certain criteria are met.[547] The terms are the same for every licensee, and it is clearly stated even on the webpage,[548] for some patent pools. For bilateral negotiations, there is only one rule that restricts the patent holders for all standard essential patents, namely that the patents need to be licensed to anybody who wishes to have a license, under FRAND conditions. However, the term "fair" "reasonable" and "non-discriminatory" are vague and the definitions are left for the concerning parties and the court to decide upon.[549] After long, unpredictable parallel licensing negotiations with

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[544] *See supra* note 512

[545] *See supra* note 505 (Kato) 63

[546] For these SMEs, patent pools may be the only way of obtaining licenses.

[547] MPEG LA requires some companies with previous negative records of payment an advanced payment. In Japan, the court ruled that the prior screenings of licensees are legitimate when such screenings have a justifiable reason.

[548] ULDAGE, Raisensu Jōken ARIB Hissu Tokkyo (Licensing conditions for ARIB essential patents), http://www.uldage.com/arib/arib01.html. (last visited Aug. 18, 2016).

[549] *See supra* note 515

many patent holders, a prospective licensee may realize that it is impossible to agree on terms with one licensor, which would render the whole series of negotiations meaningless.

In addition, having all the licenses for the technology relevant to their field of operation allows them to have more freedom in innovation, rather than having concerns on which technology they can use and which to avoid, operating under the fear of unknowingly infringing patents.[550]

4.1.2.3 Consumers

Patent pools are also a powerful tool to lower the price by lowering royalties and making the product market more competitive. In addition, by providing a convenient, cost-effective way for users to address their licensing needs, patent pools substantially reduce the number of patent infringement litigation cases and related costs that are ultimately passed on to the consumers.

4.1.3 Disadvantages of patent pools

4.1.3.1 Disadvantages to licensors

Although this can be mitigated by a higher compliance rate, the royalty per product will most likely decrease.[551] Especially for non-producing entities, the royalties are their only source of income and the only way to pay back their investments, so they must license their technology in a way that maximizes their profits. Even for producing entities, if the royalties are too low, they will simply not join the pool. This is becoming an increasingly big problem in new patent pools, as the power of patent owners with large producing capabilities is becoming greater, and the royalties are becoming lower. R&D based companies, as well as patent holders with large numbers of patents are becoming less willing to participate in the pool.[552]

4.1.3.2 Disadvantages to licensees

Another disadvantage occurs when the pool does not include patentees with

[550] *See supra* note 509

[551] *See supra* note 505 (Kato) 63

[552] *See supra* note 512

important patents.[553] Competitors of the patent holders in the pool may not join the pool as a part of their strategy for future possible lawsuits. This is the reason why a patent pool is more effective when there are fewer outside of the pool. The more patent holders the pool has, the more new patent holders it attracts.

Furthermore, the licensees must pay the royalties for all the patents packaged in the pool. Patent pools normally only license out the whole package of the patent pool, so if one only wishes a license for a few patents in the pool, it could be better to conclude bilateral licensing agreements.

4.1.3.3 Consumers

It also has the potential danger of serving as a shield for invalid patents as pools take away the incentive for a prospective licensee to challenge a patent before obtaining a license. When a large number of questionable patents is left without being invalidated, it impedes innovation by the "threat" of litigation based on nominally valid patents.

4.1.4 Sample case 1. MPEG-2 Patent Pool

4.1.4.1 Overview

MPEG-2 Patent pool is managed by a patent pool administrator, MPEG LA, which is based in Denver, United States. MPEG LA manages ten patent portfolios, including the MPEG-2 Patent Pool, all pools combined consisting of more than 8,500 patents in 74 countries from more than 160 patent holders and licenses the patent packages to more than 5,800 licensees.[554] The standard on which the pool is based is the MPEG-2 standard developed by the Moving Picture Expert Group (MPEG[555]), which is one of the basic technologies for digital broadcasting.

4.1.4.2 Framework

The licensors jointly establish a patent pool, managed by a licensing administrator (MPEG LA), and licenses all the SEPs owned to the administrator. The administrators

[553] *See supra* note 512

[554] *See supra* note 509

[555] MPEG is a working group of International Organization for Standardization, based in Geneva, Switzerland

sublicense the patent to the implementers.

4.1.4.3 History

The managing company, MPEG LA was jointly established in 1997 by eight MPEG-related patent owners, namely Columbia University, Fujitsu Limited, General Instrument Corp., Matsushita Electric Industrial Co., Ltd., Mitsubishi Electric Corp., Philips Electronics N.V., Scientific-Atlanta, Inc., and Sony Corp,[556] with a three million dollar equity fund being provided evenly by the aforementioned companies for the purpose of managing the MPEG-2 standard.

When the MPEG-2 Standard was set by the Moving Picture Expert Group (hereinafter MPEG), which is a working group of International Organization for Standardization (ISO), based in Geneva, Switzerland, during the standard setting process, the patentees had major concerns about the accessibility of the new standard. The standard constituting of numerous patents, the so-called "patent thicket" problem was expected to be a huge obstacle to promoting the MPEG-2 Standard.

A patent thicket refers to a situation in which a certain standard (or technology) consists of too many patents and thus is difficult to use, due to the accumulative royalties of each patent and the inefficiency of negotiation.[557]

In order to solve this problem, the MPEG-2-related patent owners decided to found a patent pool for the essential patents of the MPEG-2 standard. A patent pool itself is not novel as a method of managing technologies, as it dates back to the 1850's.[558]

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[556] *See supra* note 503 (Business Review Letter)

[557] MPEG LA, *A History of Success – A Future in Innovation*, http://www.mpegla.com/main/Pages/AboutHistory.aspx (last visited Oct 14, 2014)

[558] The first patent pool ever created, the Combination, was formed by four sewing machine manufacturers in the United States, namely Grover, Baker, Singer, Wheeler and Wilson, in 1856, and existed until 1877 when the last patent expired. It consisted of sewing machine patents held by the inventors of each components of the machine, allowing the four companies to greatly reduce both legal fees used for law suits against each other, and also the royalties of the patents which the other parties held. It enabled the resolution of this patent thicket problem through voluntary measures taken by the technology holders. *See* Adam Mossoff, *The Rise and Fall of the first American patent*

However the MPEG-2 patent pool was different from the existing patent pools in the following five aspects. Firstly, this patent pool was the one of the first examples in the United States of creating a company, MPEG LA, for the sole purpose of managing patent pools. Secondly, the licenses were granted non-exclusively under the same terms to all licensees. Conventional patent pools were aimed at excluding outsiders from entering a market as competitors, but this patent pool was aimed at promoting the MPEG-2 standard. Thirdly, anybody with an essential patent was welcome to join the patent pool. Fourthly, only essential patents for the standard were included in the portfolio. Independent evaluators, who were lawyers of the country where the patents were registered, evaluated the patents based on whether they have one or more claims which read on the standards. Lastly, the possibilities to have alternative bilateral licensing agreements have always been accepted. Even though the price of the pooled patents was fixed, negotiating prices bilaterally has also been an option.[559]

The aforementioned characteristics of the patent pool worked in favor of promoting competition, so the Department of Justice of the United States stated in a business review letter issued in response to the request of the founders, that this patent pool is pro-competitive, for the first time in history, on June 26 1997.[560] The founding of the patent pool administered by MPEG LA allowed easier access to essential patents for potential licensees who wished to comply by the MPEG-2 standards, which is digital technology used in video compression[561] and the basis of modern digital broadcasting by providing a one-stop service and lower royalties, which was made possible by voluntary licensing from all the relevant patentees to MPEG LA, then to sub-licensees, who actually uses the license as a producing entity.

At the beginning, MPEG-2 patent pool only had eight patent owners as licensors, because other potential members could not join because some of the prospective patentees' patents had not yet been granted, and others wanted to wait and see if the pool

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thicket: The Sewing Machine War of the 1850s, 53 ARIZ. L. REV. 165, 166 (2011).

[559] *See supra* note 554

[560] *See supra* note 503 (Business Review Letter)

[561] Jeanne Clark et al., *Patent pools: A solution to the problem of access in biotechnology patents?*, BIOTECHNOLOGY LAW REPORT 20 607–622 (2001) 14

succeeded.[562] Currently the numbers have grown to 27, after the patent owners realized that MPEG-2 pool license was a good platform to market their technology at low costs.

4.1.4.4 Significance and limitations

The significance of the MPEG-2 Patent Pool was that it was the first officially approved pro-competitive patent pool recognized as such by the U.S. Department of Justice, who had been taking a restrictive approach towards patent pools for decades.[563] It clarified the standards of what aspects are needed to be recognized as pro-competitive and opened the door to new patent pools being formed. This laid a foundation for the digital era with more standards being formed and playing a crucial role being a prerequisite for interconnectivity of things. This became the standard for standard-based patent pools being formed in the telecommunications field and in even in other fields such as biotech.

The limitations with its model with regard to technology transfer is that it only licenses out patents, and the implementation is left to the licensees. The limitation of patent pools as a tool for the dispersion of technology is written in 2.2.3.4 thus will not be repeated here.

4.1.5 Sample case 2. ARIB Patent Pool

4.1.5.1 Overview

ARIB Patent Pool, a pool for standard essential patents for the ARIB standard used for digital terrestrial broadcasting, is managed by ULDAGE, a license administrating company founded by Yoshihide Nakamura, a former President and CEO of Sony Chemical Corporation, as well as former Senior Vice President of the Intellectual Property Department at Sony Corporation, who has been in the position of President of ULDAGE ever since the foundation in 2006.[564]

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[562] *See supra* note 554

[563] Daniel P. Homiller, *Patent Misuse in Patent Pool Licensing: From National Harrow to the 'Nine No-Nos' to Not Likely*, 7 DUKE LAW & TECHNOLOGY REVIEW (2006) 3

[564] ULDAGE, *Company Overview*, http://www.uldage.com/company/ company01.html (last visited Oct. 14, 2014)

Currently ULDAGE has three patent portfolios, the ARIB patent pool (16 patent holders, 184 sub-licensees) for digital broadcasting, the CATV patent pool (15 patent holders, 8 sub-licensees) and MPEG-2 patent pool. The owners of the patents are mostly Japanese companies[565] and it collaborates with MPEG LA in providing licenses based on MPEG-2 in Japan.[566]

4.1.5.2 Framework

The licensors jointly establish a patent pool, managed by a licensing administrator (ULDAGE), and licenses all the SEPs owned to the administrator. The administrators sublicense the patent to the implementers.

4.1.5.3 History

Similar to MPEG LA, ULDAGE was founded for the purpose of providing a one-stop licensing service for standard essential patents, Hitachi Maxell, Ltd., JVC KENWOOD Corporation, Mitsubishi Electric Corporation, Panasonic Corporation, Sharp Corporation, Sony Corporation and Toshiba Corporation, each holding 14.29 % of the total stock.[567]

The Japanese standard for digital broadcasting was set by the ARIB, or the Association of Radio Industries and Businesses, a standard setting organization for broadcasting and telecommunication, [568] consisting of 208 members, which are broadcasting companies, telecommunication companies and manufacturers of related products, and four supporting members, one of which is ULDAGE.[569]

Although digital broadcasting started in Japan on December 1st, 2003,[570] and

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[565] *See supra* note 564

[566] *See supra* note 564

[567] *See supra* note 564

[568] ARIB, *ARIB no Goshōkai (Introduction to ARIB)*, http://www.arib.or.jp/syokai/seturitu.html. (last visited Aug. 18, 2016).

[569] Dentsu Inc, *Dentsu hō, Dec. 4 2013, Chideji Hōsō Kaishi 10 shūnen 'Dejitaru Hōsō no Hi' Kinen Shikiten Shikiten Hiraku*, http://dentsu-ho.com/articles/507 (last visited Aug. 18, 2016)

[570] The digitalization is completed on July 24, 2011. *See* Ministry of Internal Affairs and Communications DTV support center, *The Association for Promotion of Digital*

broadcasting was planned to be completely digitalized in the coming years,[571] the TV set manufacturers had a major concern about the actual manufacture of the televisions based on the standards for Japanese digital broadcasting. The patent thicket problem in the field was making the accumulated royalties very expensive, and hindering the dispersion of technology. The shared sense of crisis led to a consensus on creating a patent pool for ARIB standard essential patents by the major television manufactures, though in the market they were competitors.[572]

Upon the creation of the patent pool, a third party license manager was needed so that the trade secrets of each company would not be known by competitors. In order to create a new license management firm, Nakamura left his position with Sony and created a new company, namely ULDAGE. In its eight-year history, ULDAGE has gradually increased the patent pool it manages, and currently ULDAGE manages three patent portfolios, all related to digital terrestrial broadcasting.

4.1.5.4 Significance and limitations

The mode of operation as a license administrator resembles MPEG LA in major aspects such as the legal relationship between the licensors, the licensees and the administrator, royalty distribution method and the process of being included in the pool.

The uniqueness of ULDAGE as a license administrator is that the patent pools are product based (technology for digital terrestrial broadcasting), not technology based, unlike MPEG LA, which focuses on a specific standard regardless of the field or product. This makes it even easier to find infringing activities. The limitation thereof is similar to MPEG-2 patent pools thus will not be repeated here.

Broadcasting, Quick Guide to Digital Terrestrial TV, http://www.soumu.go.jp/main_sosiki/joho_tsusin/dtv/pdf/chideji_hayawakari04_en.pdf (last visited Apr. 2, 2017)

[571] *See supra* note 504 (Mr. Nakamura)

[572] *See supra* note 504 (Mr. Nakamura)

4.1.6 Sample case 3. KASUMI

4.1.6.1 Overview

Mitsubishi Electric, a Japanese electronics company, has been licensing their basic patents on their encryption algorithm, MISTY's basic patents royalty free[573]. The aim of the company was to enter into the encryption technology market and establish their position globally as the leading company in the field through de-facto standardization, in which the company succeeded.[574].

4.1.6.2 Framework

This licensing scheme could be classified as royalty free licensing. However, this should be distinguished from a non-assertion declaration in the sense that Mitsubishi still requires interested entities to sign a licensing agreement prior to use.[575] They also reserve the right to deny a license. [576]

The free license is only offered for basic patents, and Mitsubishi does not provide technical support.[577] For additional support for implementation, Mitsubishi sells software development kits.[578] As the upgraded version of MISTY, KASUMI became the global standard, Mitsubishi products as a whole were perceived as reliable and contributed to enhanced corporate value.[579]

4.1.6.3 History

In 1995, Mitsubishi Electric developed a technology on encryption algorithm, which was named MISTY. In the following year, the specifications were published in

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[573] Mitsubishi Electric Corporation, *Sekai Saisentan no Angō Arugorizumu 'MISTY' no Kihon Tokkyo wo Kokunai Hatsu no Mushōka*, http://www.mitsubishielectric.co.jp/corporate/randd/information_technology/security/code/misty07_b.html. (last visited Aug. 18, 2016).

[574] MINISTRY OF ECONOMY, TRADE AND INDUSTRY, 2013NEN BAN MONOZUKURI HAKUSHO (Ministry of Economy, Trade and Industry 2013) 108

[575] *See supra* note 573

[576] *See supra* note 573

[577] *See supra* note 573

[578] *See supra* note 573

[579] *See supra* note 574

order to allow third party safety assessments. [580]

At that time, Mitsubishi was a latecomer in the field of encryption technology.[581] In order to make their technology a de-facto standard and penetrate the foreign markets, it was decided to license the basic technology out for free.

Due to the enhanced safety and speed of the technology[582] and the licensing strategy, the mobile phone version of MISTY, KASUMI was adopted as the international standard encryption method in 2000 and GSM in 2002.[583]

4.1.6.4 Significance and limitations

This is an example of successful free licensing leading to standardization of the related technologies, and to generate revenue from surrounding products and improved technologies based on that standard. In terms of technology transfer, they have an additional service supporting the implementation, which is subject to extra costs. This may have a positive effect on the dissemination of technology. The remaining problem is how developing country industry would find funding for this, and here exists an important role for governmental institutions, as discussed in "Green technology Sample Case 2, WIPO GREEN."

4.2 Green technology

In the field of environmental technology, there also exists an example similar to Mitsubishi Electric's MISTY. In 2014, Tesla Motors declared that they would not assert their electric vehicles related patent rights. As a firm developing competing fuel cell vehicles related technologies, Toyota Motor Corporation has also declared it would license the technology out for free in the following year. These were examples of strategic licensing aiming at gaining market share and also at encouraging infrastructure building necessary for the use of technology. In the Toyota example, the company retained some control over the terms and conditions of the license and therefore the licensee.

In addition to profit-oriented free licensing, there exists more environmental

[580] *See supra* note 573

[581] *See supra* note 574

[582] *See supra* note 573

[583] *See supra* note 574

protection oriented initiatives such as the Eco Patent Commons and WIPO GREEN. The former is a bundle of non-assertion encumbered patents, and the latter is a licensing matchmaking platform for package licensing.

4.2.1 Sample case 1. Eco-Patent Commons

4.2.1.1 Overview

Eco-Patent Commons is an initiative launched by IBM, Nokia, Pitney Bowes and Sony, together with the World Business Council in 2008.[584] The Commons consists of patents owned by the participating companies which can be used cost-free for environmentally beneficial purposes, without signing a contract.[585]

4.2.1.2 Framework

Patent owners who wish to have their patents in the commons submit a written statement specifying the patent and its environmental benefits.[586] On including the patents in the commons, the patent holder must pledge non-assertion of their patents against environmentally beneficial use.

Once included in the list of patents in the Commons, the patent owner can no longer remove it from the list.[587] However, defensive termination against a non-pledger party that asserts its own patent right against an infringer is allowed.[588] Among the pledgers, defensive termination is restricted to cases which the attacked party's activity provides environmental benefits, and the asserted patents of the attacking party is

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[584] Eco-Patent Commons, *Eco-Patent Commons Ground Rules*, http://www.wbcsd.org/pages/adm/download.aspx?id=314&objecttypeid=7. (last visited Aug. 4, 2016).

[585] *About the Eco-Patent commons*, https://ecopatentcommons.org/about-eco-patent-commons. (last visited Aug. 18, 2016).

[586] *See supra* note 584. Environmental benefits are defined in the ground rules as "those which, either alone or when included in a product or service, exhibit such characteristics as reduced/eliminated natural resource consumption, or reduced/eliminated waste generation or pollution."

[587] *See supra* note 584

[588] *See supra* note 584

included in the classification list of the Eco-Patent Commons.[589]

The liability of the pledgers of consequences arising from the use of the pledged patents are waived in the Eco-Patent Commons Ground Rules.[590]

4.2.1.3 History

The initial idea of Eco-Patent Commons was proposed at the Global Innovation Outlook (GIO) conference, which was a forum in which experts in various fields discussed the important issues of the modern world, held in 2005 to 2006.[591]

During its session, the GIO came up with a scheme under which patent owners could provide their environmental technology for the commons and allow royalty-free use.[592] The scheme does not expect nor request companies to add their important patents to the Commons. Rather, they ask companies to contribute a small portion of their patents that cannot be exploited by themselves in a conventional way but could be used or would be found inspiring by other parties. The use was expected not solely for the implementation of existing technology but also for innovations based on the implementation of the patent in question.[593] In some cases, patents were owned by companies for defensive purposes and were just kept unused. If the licensors could keep the patents for defense while allowing others to use the technology, it would bring more

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[589] *See supra* note 584

[590] *See supra* note 584 "The ELI and each Patent Pledger are not responsible for third party claims arising from any act or failure to act hereunder by any other Patent Pledger. The ELI, the Eco-Patent Commons Executive Board, Members and Patent Pledgers do not warrant or represent to each other or to implementers the success of the Commons, the validity or enforceability of patents pledged, the error-free management of the Commons program, or that any specific patent classification or any specific product, service, or component implemented by any other party is environmentally beneficial or that the patented technology is safe or effective for use, operation, or implementation, and that any party using the patented technology assumes the risk of doing so and hereby releases the Pledger and its affiliates from any and all liability relating in any way to the use of the pledged patents."

[591] Takeshi Ueno, *Eco-Patent Commons*, PATENT STUDIES, No.50 2010/9 (2010) 30

[592] *See supra* note 591 30

[593] *See supra* note 585

value to society than keeping it locked up. [594]

In materializing this idea, companies decided to collaborate with a non-profit organization, the World Business Council for Sustainable Development.[595]In 2008, Eco-Patent Commons was created in order to share environmental knowledge and technology through making patented technology available to everyone for free.[596] This was one of the first organized efforts to address sustainability issues through free licensing of patents.[597] It started with four companies plus the World Business Council, but grew into 13 companies in 2011.[598]

The number of cases of implementation is unclear. However, one paper suggests that there were at least three cases of use before 2010, one of which includes the use of patents of IBM by Yale University, in order to detoxify waste water used in a particular research project.[599]

However, since 2011, no significant interest had been shown by companies to join the pool, and the number of patents included had been stagnant.[600] Therefore, in May 2016, the Board of the Commons decided to cease its operations. The pledged patent could be continuously used after the termination of operation.

4.2.1.4 Significance and limitations

The significance of Eco-Patent Commons was that the companies could reach an agreement to collectively license out the patents free of royalties for environmental purposes. This is an example of how companies can maintain their exclusivity in some areas while opening their proprietary technology for the general public for the public

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[594] *See supra* note 591 32

[595] *See supra* note 591 31

[596] *See supra* note 585

[597] *See supra* note 585

[598] World business council for sustainable development, *World business council for sustainable development*, http://www.wbcsd.org/work-program/capacity-building/eco-patent-commons.aspx. (last visited Aug. 18, 2016).

[599] *See supra* note 591 32

[600] Eco-Patent commons, Eco-Patent commons statement for the E-PC website (2016), https://ecopatentcommons.org/sites/default/files/docs/eco-patent_commons_executive_board_statement.pdf.

benefit, and also how companies can collaborate in order to work for the public benefit in the field of IP.

The commons intended to provide a leadership opportunity for companies who aim at being a part of the solution for environmental problems.[601] Free licensing of patents would have a pro-bono aspect, and the commons rightly promoted it as an opportunity to boost their image as a socially responsible company as well as an incubator for open innovation and potential business chances. This brought a positive social recognition to being part of the initiative and encouraged companies to join the Commons.

However, there are some limits to this model. First of all, the number of pledged patents and the pledgers was relatively small.[602] The sudden termination of the operation due to failure of expansion shows us the difficulty of a non-assertion based patent commons platform.

The reasons for companies not joining may be the rigid nature of the license (non-retractable) or the lack of funding or human resources to identify which patents could be included and which one could not. A non-retractable declaration not to assert patents would be, apart from being able to use it for defense, very similar to surrendering the patent, while still paying maintenance fees.

More importantly, as long as a non-pledger licensee is taking a free license from the commons, they are forbidden to assert any of their patents against the pledged patent owner. This would result in the licensee's technology factually being available for free for the licensors to use. The fairness of this pledge is questionable, although it is understandable that the licensors do not wish to be completely bound by the pledge to the extent that they are rendered entirely defenseless.

Also, the idea to establish a collaborative relationship through patent licensing may have been far-fetched. A patent license granted without meeting the other party would not lead to much mutual interaction. For these purposes, collaborative works were necessary, but the mechanism was not necessarily encouraging the interaction of the parties.

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[601] *See supra* note 585

[602] As of July 11th, 2016, 105 patents from 12 patentees are listed in the patent list.

4.2.2 Sample case 2. WIPO GREEN

4.2.2.1 Overview

In order to actually enable the developing country licensee to implement the technology, know-how transfer is of great importance. For this purpose, a new licensing platform by the World Intellectual Property Organization, WIPO GREEN was founded. The platform emphasizes the importance of package licensing of patents and know-how and connects potential licensors and licensees through their online platform, workshops and through partner technology licensing agents.

WIPO being a UN organization, additional assistance through collaborating institutions is available for addressing the needs for financial and legal assistance. When negotiating for and concluding a licensing agreement, the parties can gain access to legal specialists and funding from international development banks through the platform.[603]

4.2.2.2 Framework

WIPO GREEN is an online platform for matchmaking between potential licensors and licensees in the field of green technology. When a technology holder has a green technology (or preferably a package of technologies) that they could license out, they upload the description of the technology onto the platform database. Those seeking technology can either look up in the database and look for an appropriate technology or post an advertisement seeking the technology. When parties find mutual interest in technology transfer, they could go into negotiations themselves. It supports financing through connecting development banks with licensees and legal assistance through connecting pro bono lawyers with the parties.

The platform further supports matchmaking through conducting need analysis in developing countries and holding workshops[604] inviting potential technology providers, technology seekers and financing institutions.

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[603] World Intellectual Property Organization, *Finding sources of funding*, https://www3.wipo.int/wipogreen/en/network/funding.html. (last visited Aug. 18, 2016).

[604] For example, WIPO has held a "Facilitating the Transfer and Diffusion of Clean Technology: Opportunities from a Pilot Project on Wastewater Treatment in South East Asia" on April 23rd and 24th, 2015 in Manila.

Currently, WIPO GREEN has 90 technology providers offering 728 patents and 30 technology seekers offering 149 patents, apart from patents licensed from Associations of University Technology Managers (AUTM), which constitutes roughly 25% of the total offers. [605]

4.2.2.3 History

WIPO GREEN was first proposed by the Japan Intellectual Property Association (JIPA) under the name of the Green Technology Packaging Program (GTPP) in 2010, in a position paper by JIPA. The initial aim of the program was to address the problem of climate change by means of green technology transfer, in line with the United Nations Framework Convention on Climate Change (UNFCCC) and the protocols and agreements which followed, such as the Kyoto Protocol, in which the importance of the role of technology in the battle against climate change[606].

Naoto Kuji, who has been the IP director for a Japanese company, Honda Motor, was the one initiated the proposal as the president of JIPA. He first came up with the idea of a technology transfer platform during the Fifteenth Session of the Conference of Parties to the United Nations Framework Convention on Climate Change (COP15) in Copenhagen in 2009, when China proposed compulsory licensing for green technologies. China asserted that patents on green technologies have been hindering the dissemination of these technologies in developing countries. A U.S. company which was also a proprietor of green technologies started considering a lobbying activity against this proposal, and asked if Honda wanted to join as well.

Considering this offer, Kuji realized that, for many of the developing countries, the patent system does not have any positive or negative effect in licensing, as they do not have a patent system yet, or even if they have, they have very few patents registered in their jurisdiction. The Chinese assertion seemed to be true for relatively developed and industrialized developing countries, but not for the countries which were more helpless.

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[605] World Intellectual Property Organization, *Providers/Seekers*, https://www3.wipo.int/wipogreen-database/providerSeekerList.htm. (last visited Aug. 18, 2016).

[606] Naoto Kuji & Cynthia Cannady, *Propagating Green Technology: A Japan Intellectual Property Association Proposal*, LES NOUVELLES Jun. 2011 (2011).3

Moreover, even if the patented technologies were to be licensed out under the compulsory licensing system, it was assumed it would be difficult for these countries to actually use the technology without surrounding know-how and personnel training.

On the other hand, he thought that the lobbying activity would not solve the problem of lack of technology transfer, nor be an actual solution to global warming. The Chinese proposal had indeed pointed out an important problem. From an international law perspective, under UNFCC and the Kyoto Protocol, developed member states have a legal obligation to transfer green technologies, but this was not being realized sufficiently, resulting in the impression that the patent system was an obstacle to technology transfer.

At the end, rather than being a part of an endless debate which would not solve the problem, Kuji had chosen to be part of the solution. He was determined to make a technology transfer platform specializing in Green technology, which would solve at least part of the problem that the world faces today.

After coming up with the idea of a new technology transfer platform, he first brought it to the Japan Patent Office, but they were reluctant to pursue the project. He then brought it to WIPO, which accepted the proposal and launched a pilot platform in 2012.[607] In the following year, the platform was officially launched.[608]

4.2.2.4 Significance and limitations

The significance of this platform is that it goes beyond the traditional role of IP related institutions – it attempts to aid users of the IP system to actually use their IP for sharing their knowledge.

For example, the platform attempts to bridge the technology gap by proactively seeking needs through pilot projects in developing countries which assesses the technology needs. This is an important process of technology transfer. However WIPO, being an intellectual property law institution, has its own limitation. Now that a model has been established, it may be time that other institutions such as local governments, NGOs or international organizations specializing in a particular environmental problem get involved and be part of the licensing process.

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[607] World Intellectual Property Organization, *About WIPO GREEN*, https://www3.wipo.int/wipogreen/en/aboutus/. (last visited Aug. 18, 2016).

[608] *See supra* note 607

Another significance is that its flexibility allowed licensors with various expectations to participate in the same forum. Some licensors consider this as an opportunity to fulfill their moral responsibilities as global citizens and are willing to provide an ecologically sound way of development to developing countries. Others see this more as a potential business opportunity and are seeking a symbiotic, win-win relationship between the expansion of their own business and supporting international development. This was made possible because of the platform's flexibility in allowing the space to arrange for a contract term best suited for the parties for licensing deals coming out of the platform.

The fact that it is run by a UN organization adds additional value – it is in a good position to bring together relevant people and institutions. It has the potential to serve as a one-stop service point for green technology transfer by providing technical, legal and financial support in all stages of the course of the transfer.

However, there is still work to be done. The platform is aimed at providing a package license, a license for a combination of technologies suitable for application as a whole. This has still not been so successful due to the complicated nature for creating a package, although it is progress in comparison to earlier initiatives such as Eco-Patent Commons, which merely allows licensees to use the technology freely but without technical support.[609]

The lack of potential licensees is also an issue. Since the launch of WIPO GREEN in 2013, it has attracted a lot of attention in the industry, research institutions and potential licensees around the world. The online database had accumulated numerous technology suppliers as a result of an enthusiastic search for potential licensors by the WIPO GREEN team and a willingness of the international community including business and research institutes to be part of the solution to the global environmental problems.

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[609] The Eco-Patent Commons website states that "[t]here is no requirement for pledgers to provide ongoing support to the businesses interested in using the patents they have pledged. There is certainly an opportunity for collaboration and development of a larger business relationship, however." Eco-Patent Commons, *Frequently asked questions*, https://ecopatentcommons.org/frequently-asked-questions#QA1. (last visited Aug. 18, 2016).

However, very few potential licensees or recipients of technologies uploaded their needs to the webpage. This appears surprising, especially after all the call for enhanced green technology transfer by UNFCCC and the continuous request from developing countries to developed countries to provide technology which would enable them to develop their economy and society with less pollution and damage to the environment.

There are many possible reasons for the potential licensees not utilizing the platform. As WIPO GREEN is a rather new attempt aimed at businesses including SMEs in developing countries, it is likely that more time is needed in order to allow information to penetrate into the potential markets. National governments, especially those of developing countries could make efforts to make it known to their nationals. The reason for the reluctance of potential licensees may also be that they lack the ability to examine an environmental issue and find the technically right solution. SMEs in developing countries may lack this kind of expertise. For these issues, parties need to work with professionals in the field in order to find a technical solution to the phenomena. As is many other things in developing countries, the lack of funding may be a big issue. The funding issue is somehow mitigated due to WIPO GREEN's collaboration with funding institutions, but more could be done in this regard.

4.2.3 Sample case 3. Free licensing by Toyota and Tesla

4.2.3.1 Overview

Toyota and Tesla, competitors in the field of environmentally friendly automobiles, consecutively offered a free license of their vehicle related [610]patents. [611]

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[610] Toyota Motor Sales, *Toyota opens the door and invites the industry to the hydrogen future | corporate*, http://pressroom.toyota.com/releases/toyota+fuel+cell+patents+ces+2015.htm. (last visited Aug. 18, 2016).

[611] IFLScience, *Tesla release electric car patents to public*, http://www.iflscience.com/technology/tesla-release-electric-car-patents-public. (last visited Aug. 18, 2016). This article was based on Elon Musk, *All our patent are belong to you*, http://www.teslamotors.com/blog/all-our-patent-are-belong-you. (last visited Aug. 18, 2016).

Their vehicles are based on two different technologies, Toyota on fuel cell vehicle technology and Tesla on electric vehicle technology, which are competing with each other to obtain market share and to develop related infrastructure. [612].

4.2.3.2 Framework

Tesla took a non-assertion approach, in comparison to Toyota, who took a licensing approach. Tesla stated on their webpage that they "will not initiate patent lawsuits against anyone who, in good faith, wants to use our technology"[613], which would mean that the factual result would be free usage of technology with limitation only occurring from the word "in good faith". Toyota, by contrast to TESLA, requires a licensing agreement prior to the use of their technology, and for some patents the free use is only until 2020, which is the time Toyota anticipates the introduction period would be over[614].

4.2.3.3 History

First, in June 2014, Tesla, a California based electric car manufacturer announced that they will open up their all of their patents in order to disseminate the technology and make electric cars widely available. Toyota Motor Corporation followed Tesla by announcing that they would offer royalty-free licenses on their fuel cell vehicle related technology in January 2015.

4.2.3.4 Significance and limitations

This is an interesting model of using free licensing as a tool to disseminate technology as well as to encourage infrastructure construction in order to facilitate the use of their own technology.

Tesla, being a rather small company, does not have enough production capability to increase the supply of electric cars. Therefore, they needed other companies to supply

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[612] Brooke Crothers, *Toyota replies to fuel cell vehicle critics: Tesla's Elon Musk not excluded*, (Apr. 26, 2015), http://www.forbes.com/sites/brookecrothers/2015/04/26/toyota-replies-to-fuel-cell-vehicle-critics-teslas-elon-musk-not-excluded/.

[613] *See supra* note 611 (Musk)

[614] *See supra* note 611 (Toyota)

electric cars.

Toyota on the other hand has large-scale manufacturing facilities, but they needed hydrogen fuel stations to be build. Toyota had already been granting loans to companies who are operating hydrogen fuel stations in California, and has been jointly developing hydrogen fuel stations in the east coast of the United States[615].

The outcome of their strategy is still uncertain - Toyota's competitor, Honda Motors is continuing with the development of their own technology in the FCV field, in collaboration with General Motors, which would be a competitor in the FCV market. Ford Motors is licensing their electric car technology out to anyone in the field, which is in line with TESLA, but without foregoing royalties[616].

4.3 Pharmaceutical technology

In this field of technology, the use of patent pools was considered difficult as the number of patents required to produce a therapeutic product is often small, licensed exclusively and not subject to standards and the value of patent is relatively high.

Nevertheless, in recent years, the need for affordable licenses in this field due to humanitarian reasons has emerged, and therefore many creative licensing schemes have been brought to life.

Pool licensing for HIV medication for humanitarian purposes is done through UNITAID, an international organization in the field. The pool, Medicines Patent Pool, licenses patented technology to generics in order to provide medicine cheaply in developing countries. Through this license, medication sufficient to treat 720 million patients for one year was produced and the medicine was distributed in 117 countries around the world.[617]

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[615] Toyota Motor Sales, *Toyota opens the door and invites the industry to the hydrogen future | corporate*, http://pressroom.toyota.com/releases/toyota+fuel+cell+patents+ces+2015.htm. (last visited Aug. 18, 2016).

[616] Autoblog JP, *Tesura ya Toyota ni Tuduki Fōdo ga Denkijidōsha Kanren no Tokkyo wo Kaihō*, http://news.livedoor.com/article/detail/10184583/. (last visited Aug. 18, 2016).

[617] Medicines patent pool, *Medicines patent pool*, http://www.medicinespatentpool.org/about/. (last visited Aug. 18, 2016).

Another WIPO initiative in this field is WIPO Re:Search. This is a matchmaking platform between entities that conduct research on neglected tropical diseases, malaria and tuberculosis aiming at enhancing cooperation in the research and development stage. The form of cooperation or licensing is up to the parties; however, the licensing fee shall be free for research and development purposes and also for sales in least developed countries.[618] Ninety-nine agreements have been made under WIPO Re:Search.[619]

4.3.1 Sample case 1. Medicines Patent Pool

4.3.1.1 Overview

Medicines Patent Pool licenses patented technology to generics in order to provide medicine for HIV, viral hepatitis C and tuberculosis at an affordable price in developing countries.[620] It is a United Nations backed organization and is funded by UNITAID, an international organization founded by Brazil, Chile, France, Norway and the U.K.[621]

It includes seven patent holders[622] and ten sub-licensees.[623] Licenses for nine key antiretrovirals and one hepatitis C medicine are available through MPP. The conditions for licensing are open and available online.[624] Through this license, medication sufficient

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[618] World Intellectual Property Organization, *Leading pharmaceutical companies & research institutions offer IP and expertise for use in treating neglected tropical diseases as part of WIPO re: Search*, http://www.wipo.int/pressroom/en/articles/2011/article_0026.html. (last visited Aug. 18, 2016).

[619] As of Apr. 14, 2016. World Intellectual Property Organization, *Collaborations*, http://www.wipo.int/research/en/collaborations/. (last visited Aug. 18, 2016).

[620] *See supra* note 617

[621] "UNITAID identifies health solutions that show promise and invents in them to establish their viability so that partner organisations can then make them widely available." UNITAID, *About UNITAID*, http://www.unitaid.eu/en/who/about-unitaid. (last visited Aug. 18, 2016).

[622] AbbVie, Bristol-Meyers Squibb, F. Hoffman-La Roche, Gilead Sciences, MSD, the NIH, and VIV Healthcare. *See supra* note 620

[623] MEDICINES PATENT POOL, BUILDING PARTNERSHIPS ACCELERATING ACCESS, 2013 ANNUAL REPORT (MEDICINES PATENT POOL 2013) 6

[624] Medicines Patent Pool, *Summaries of licensing agreements*, http://www.medicinespatentpool.org/summaries-of-licensing-agreements/. (last visited

to treat 720 million patients for one year was produced and the medicine was distributed in 117 countries around the world.[625] For one key medicine for an HIV opportunistic infection, prices were reduced by 90%.

4.3.1.2 Framework

The Medicines Patent Pool prioritizes important patents in the field and negotiates with patent holders for voluntary licenses for low-cost manufacturers. It then work as a licensing administrator and sublicenses patents to the manufacturers.

The sublicense to produce is granted in some cases to "qualified entities worldwide"[626], and in other cases to entities in a specific country[627]. The sublicense to sell is granted to middle and low-income countries.[628] Each product has its own licensing terms applicable to all licensees, all transparent and available online.[629] The royalties are in some cases free[630], and in some cases[631] not. The freedom of the licensees to combine products into fixed-dose combinations (FDCs) or develop pediatric formulations, to purchase active pharmaceutical ingredients from a non-licensor source, to supply to countries issuing compulsory licenses for imports, to challenge patents is secured in all licenses.[632] Data exclusivity is waived by the licensor, and the licensor provides the licensee with a list of patents and their status.[633] These generous conditions, uncommon in ordinary commercial licenses, grant a broad freedom to utilize the technology and to

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Aug. 18, 2016).

[625] *See supra* note 620

[626] For example, MPP License for Elvitegravir (EVG)

[627] For example, MPP license for Dolutegravir

[628] 92 to 127 countries are covered by the licenses, depending on the individual license. *See supra* note 620

[629] Medicines Patent Pool, PROGRESS AND ACHIEVEMENTS OF THE MEDICINES PATENT POOL 2010-2015 (Medicines Patent Pool). 6

[630] For example, MPP License for Paediatric Formulations of Abacavir (ABC) is royalty free.

[631] For example, MPP license for Dolutegravir requires royalties for six countries, and for other 67 countries which are the target countries of the license, the royalty is free.

[632] *See supra* note 629

[633] *See supra* note 629

supply essential medicine to developing countries.

4.3.1.3 History

The Medicines Patent Pool was established by UNITAID in July 2010.[634] In September, it had its first licensor, The US National Institutes of Health (NIH). In October 2011, it had its first sub-licensee, Aurobindo Pharma Ltd.[635] Since then, the number of licensors, including pharmaceutical companies and research institutes, and sub-licensees has increased over the years.

4.3.1.4 Significance and limitations

The significance of this licensing scheme is that it is based on the will of the licensor. The licensors and MPP can negotiate terms and create licensing terms applicable for all future licensees of their patents. The terms could be more favorable than compulsory licenses, which may be granted by certain governments if the medication is not available in its jurisdiction.

The licensing scheme also aids in the licensors to recoup their investment and to gain profits from developed countries while providing licenses for free or for affordable royalties and on a non-discriminatory basis by limiting the scope of license to certain countries, both for manufacturing and sales.

The non-discriminatory nature, as well as lower royalties, aids in lowering the price of pharmaceuticals. In the pharmaceutical field, licenses are often granted on a very restrictive basis and the licensing conditions are not disclosed to third parties. However, this license emphasizes on non-discriminatory treatment of licensees and openness of licensing conditions. This invites companies to enter the market of the respective pharmaceutical and to lower the price of it through market mechanisms.

The limitation of the licensing scheme is that the license is based on a voluntary basis. The severe criticism towards pharmaceutical patent holders restricting the availability of patents is certainly a pressure on pharmaceutical companies. However, a scheme which relies on the good will of any party has its vulnerability. More incentives to join the pool, additional protective measures for the rights held by the licensor, or

[634] *See supra* note 623

[635] *See supra* note 623

disincentives to be out of the pool may be necessary to accelerate its expansion.

4.3.2 Sample case 2. WIPO Re:Search

4.3.2.1 Overview

WIPO Re:Search is a matchmaking platform between entities that conduct research on neglected tropical diseases, malaria and tuberculosis aiming at enhancing cooperation in the research and development stage. 98 private companies, governments, public sector research institutes and Universities from all around the world, including entities from developing countries.[636] So far, 105 agreements have been made under WIPO Re:Search.[637]

4.3.2.2 Framework

WIPO Re:Search provides a platform for interaction between entities that conduct research on neglected tropical diseases, malaria and tuberculosis. The form of cooperation or licensing resulting therefrom is up to the parties; however, the licensing fee shall be free for research and development purposes and also for sales in least developed countries.[638]

4.3.2.3 History

WIPO Re:Search was formed based on Pool for Open Innovation against Neglected Tropical Disease (POINT), which was founded by GlaxoSmithKline in

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[636] World Intellectual Property Organisation, *Chakujitsu ni Kakudai suru WIPO WIPO re: Search ni Minkan Sekutā kara shin menbā ga Kamei*, http://www.wipo.int/about-wipo/ja/offices/japan/news/2015/news_0067.html. (last visited Aug. 18, 2016).

[637] World Intellectual Property Organization, *Collaboration Agreements*, http://www.wipo.int/research/en/collaborations/collaborationagreements.html (last visited Mar. 14, 2017)

[638] World Intellectual Property Organization, *Leading pharmaceutical companies & research institutions offer IP and expertise for use in treating neglected tropical diseases as part of WIPO re: Search*, http://www.wipo.int/pressroom/en/articles/2011/article_0026.html. (last visited Aug. 18, 2016).

2009.[639] The aim of POINT was to allow universities and public research institutes access to more than 2300 GSK patents and know-how useful for research on therapeutic products for neglected tropical diseases, under reasonable conditions.[640] Although the name states that it is a patent pool, it is more of a patent commons in the sense that the listed patents are not designed to be licensed out as a package – they are a collection of patents that could be used for many purposes, all of which relate to developing therapeutic products for neglected tropical diseases. Licensing fees were free for pharmaceutical products for sale in LDCs that implement the licensed patents. For sales in other parts of the world, the licensor could negotiate a licensing fee with the licensee, given that it ensures "rates that facilitate access of the therapeutic to the poor."[641]

POINT was an innovative attempt to encourage research for therapeutics for neglected tropical diseases. However, its primary role was somewhat limited to removing the obstacles for such research rather than finding a solution because whether or not relevant know-how was transferred when requested by licensees was left to the parties' discretion. This limitation is understandable, since if the conditions of the grant of the license was too generous to the licensees, the technology holders would possibly not have agreed to join the pool. Stating, in the Core Principles, that "[p]ool contributors have a choice as to whether, and on what terms, they will provide know-how to specific enquiries regarding possible use of technologies that might be of value to an NTD research or development project"[642] to clarify the existence of such an option upon agreement was

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[639] GSK, *Research/open innovation*, http://us.gsk.com/en-us/research/sharing-our-research/researchopen-innovation/. (last visited Aug. 18, 2016).

[640] Jennifer Dent et al., *Open innovation to bolster research and development for neglected and emerging infectious diseases*, JOURNAL OF MEDICINE DEVELOPMENT SCIENCES Volume 1, Issue 1 (2015).47

[641] BIO Ventures for Global Health, *Core Principles, Pool for Open Innovation against Neglected Tropical Diseases*, BIO VENTURES FOR GLOBAL HEALTH, http://www.bvgh.org/LinkClick.aspx?fileticket=BOLmqvC-QGM=. (last visited Jan. 24, 2017).

[642] BIO Ventures for Global Health, *Pool for Open Innovation against Neglected Tropical Diseases Core Principles*, http://www.bvgh.org/LinkClick.aspx?fileticket=BOLmqvC-QGM= (last visited Mar. 14, 2017)

possibly was the furthest from what the parties could agree to.

Despite its limitations, the idea of using IP to support research by third parties rather than blocking them attracted much interest from other companies and WIPO, and it lead to the formation of WIPO Re:Search in 2011.[643] The original pharmaceutical company members were Alnylam, AstraZeneca, Eisai, GSK, MSD, Novartis, Pfizer, and Sanofi.[644] BIO Ventures for Global Health (BVGH) who managed POINT continued to be involved and WIPO also joined in the foundation.[645]

The difference between POINT and WIPO Re:Search was that POINT was a patent commons organized by technology holders, whereas WIPO Re:Search is designed as a consortium of research institutes in the field, including technology providers, seekers and institutions interested in joint research with other institutions.[646] WIPO Re:Search constitutes of three major components: a database, a partnership hub and supporting activities.[647] The database of provided technology includes not only patents but also non-

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[643] *See supra* note 640

[644] *See supra* note 640

[645] *See supra* note 640

[646] World Intellectual Property Organization, *WIPO Re:Search Sharing Innovation in the Fight Against Neglected Tropical Diseases Guiding Principles*, http://www.wipo.int/export/sites/www/research/docs/guiding_principles.pdf (last visited Mar. 14, 2017)

[647] *Supra* note 646, which states the following:

"The Consortium has three major components:

1. A Database, hosted by WIPO, providing details of Intellectual Property available for licensing from a Provider (as defined below), as well as services and other technology or materials not necessarily protected by intellectual property rights which can be accessed by Users (as defined below).

2. A Partnership Hub, managed by a Partnership Hub Administrator, which shall be BVGH or any subsequent competent entity, in cooperation with WIPO, where Members (defined below) and other interested parties that support or are considering supporting these Guiding Principles can learn about the Consortium, available licensing and research collaboration opportunities, networking possibilities, and funding options.

3. A range of specific Supporting Activities, led by WIPO in cooperation with BVGH, to facilitate negotiation of licensing agreements and to address technical matters such as

patent technology and data.[648] In short, it morphed into a platform of interaction for open innovation and moved a step forward from removing obstacles to seeking solutions.

Under the Guiding Principles, the technology providers in the consortium agree to grant a royalty-free license of the IP listed in the WIPO Re:Search database for the research, manufacturing, import and export of "products, technologies or services, for the sole purpose of addressing public health needs for any or all NTDs in LDCs and are sold in LDCs."[649] For developing countries apart from the LDCs, the technology providers agree to "[c]onsider in good faith the issue of access to these products for all developing countries, including those which do not qualify as LDCs. This includes considering in good faith the granting of a license under any relevant Intellectual Property on a case-by-case basis, taking into account the economic development of the countries and the need to facilitate access to disadvantaged populations."[650]

As of date, 105 collaboration agreements were made under WIPO Re:Search,[651] and these agreements frequently involve developing country institutions as a partner and also exchange of researchers including junior scientists. [652]

4.3.2.4 Significance and limitations

The significance of the platform is that it provides a space for open innovation among institutes around the world, including developing countries. To conduct research close to the field is an advantage for researchers in diseases rampant in developing countries, and collaboration allows easy access to the field.

It also encourages technology transfer to developing countries through joint research between world-class leading institutes and research institutes in the field. WIPO Re:Search additionally aids this by providing sabbatical programs for research scientists

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identifying research needs and opportunities, among others, with technical advice from the World Health Organization (WHO)."

[648] World Intellectual Property Organization, *WIPO Re:Search Database FAQs*, http://www.wipo.int/research/en/search/faq.html (last visited Mar. 14, 2017)

[649] *See supra* note 646

[650] *See supra* note 646

[651] *See supra* note 637

[652] *See supra* note 637

from developing countries and IP management training for developing country members,[653] which should also have a positive influence on the research quality of developing country research institutes.

The limitation of the scheme is that the licensing conditions do not necessarily reflect the realities of the distribution of the patients of the disease. Some neglected tropical diseases mainly occur in developed countries but not the least developed. For these countries, the collaboration in innovation may prove useful, but they would not benefit from the royalty-free license.[654]

The issue is not simple – if all developing countries fall under the scope of the free licensing clause, how would the companies benefit at all? In order to solve this issue, the aforementioned Medicines Patent Pool's non-discriminatory affordable licensing approach may be useful.

4.4 Biotechnology

This is also a field of technology that was considered important for humanitarian reasons. However, some characteristics of use of patents in biotech make it difficult to license in a manner that aids in dispersion of technology. The biotech industry generally places a high value on patents and patents are often exclusively licensed. Fewer patents are needed in order to manufacture a product in comparison with the ICT industry.

Despite its difficulty, some attempts at international licensing in this field have been made. The Golden Rice Project is a well-known example of successful university-industry research collaboration and free licensing of the fruits thereof for humanitarian purposes.[655] A prominent example of commercial patent pools in the field is Librassay, managed by MPEG LA, which originally was a patent pool administrator in the ICT field, of which the basis was undermined in recent court cases by the U.S. Supreme Court on

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653 World Intellectual Property Organization, *WIPO re: Search*, http://www.wipo.int/research/en/. (last visited Aug. 18, 2016).

654 Rachel Marusak Hermann, *United Nations*, INTELLECTUAL PROPERTY WATCH, http://www.ip-watch.org/2011/10/27/wipo-research-bridges-public-private-sectors-for-neglected-disease-research/. (last visited Aug. 18, 2016).

655 Golden Rice Humanitarian Board, *Golden Rice and intellectual property*, http://www.goldenrice.org/Content2-How/how9_IP.php. (last visited Aug. 18, 2016).

patentability.

4.4.1 Sample case 1. Librassay

4.4.1.1 Overview

For individualized diagnosis, the conditions for the success of patent pooling were there – many patents were held by many entities and the number of licensees was expected to be large. MPEG LA has formed a commercial licensing platform, Librassay, in order to address this need of patent licensing management.

4.4.1.2 Framework

Unlike the patent pools based on standards, Librassay is not a licensing platform based on a specific standard. It is rather a one-stop licensing platform for patents related to individual diagnostics. The licensees could choose one or more patents to be included in its licensing package. [656]

The royalties are determined by multiplying the royalty rate and collectibles[657], and discounts are also available as the number of licensed patents increase. [658] For educational and research purpose use funded by a university or a non-profit entity, the royalties are free of charge as long as there are no discrete products or services for payment or reimbursement.[659]

4.4.1.3 History

MPEG LA commenced Librassay in September 2012, with the aim of disseminating individualized diagnostics technology through providing a one-stop

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[656] MPEG LA, *Agreement*, http://www.mpegla.com/main/programs/M2/Pages/Agreement.aspx. (last visited Aug. 18, 2016).

[657] Royalty Rate x Collectibles. Royalty rates are determined by the list provided by MPEG LA, based on the number of patents. As the number of patent increases, the royalty rates increase, but in a discounted manner. Collectibles are a "commercial list price of a Royalty-Bearing Product or Use to the extent paid to Licensee directly or indirectly by any party (subject to fair market value determination)"

[658] *See supra* note 656

[659] *See supra* note 656

opportunity to obtain necessary patents.[660] The initial licensors were eights institutes, comprised of universities and research institutes such as Johns Hopkins University and Ludwig Institute for Cancer Research.[661]

In 2013, they had their first licensee, Diagnovus. However, the U.S. Supreme Court's rulings on patent validity in the biotechnology sector have rendered the validity of the included patent unstable and therefore the activity of this project has been limited.[662]

4.4.1.4 Significance and limitations

The significance of Librassay is that it explored the possibility of application of the patent pool method of licensing commercially in the field of biotech. Despite its current stagnant situation caused by external reasons, this example shows that, when the condition that there are many patents owned by many patent holders that need to be licensed out to many licensees, there is potential for a pool-type management to succeed.

On the other hand, this case shows the vulnerability of the licensing (or patent) related businesses to the change in case law or legislations. Stability in that regard provides a condition for more creative licensing schemes to be experimented and to flourish.

4.4.2 Sample case 2. Golden Rice Project

4.4.2.1 Overview

The Golden Rice Project is an example of creative licensing schemes that overcame many existing obstacles in technology transfer. The subject matter of the license was the technology involved in producing Golden Rice, a provitamin A-containing rice variety created by genetic engineering.[663] The patent owners, both conducting academic

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[660] MPEG LA, *Librassay store - media*, https://www.librassay.com/Media.aspx. (last visited Aug. 18, 2016).

[661] *See supra* note 660

[662] Interview with Larry Horn, CEO of MPEG LA (May 2015).

[663] Golden Rice Humanitarian Board, *Golden Rice is part of the solution*, http://www.goldenrice.org. (last visited Aug. 18, 2016).

research at a university, assigned their basic patent to a commercial company in return for further development of the technology to an agriculturally feasible level and to grant the original patent holders a license with a right to sublicense to research institutes and farmers for humanitarian purposes.[664]

4.4.2.2 Framework

The original inventors assign a patent to a commercial enterprise in return for a humanitarian-use license with the right to sublicense. The commercial enterprise develops the technology to an industrially-applicable level. Then the licensees sublicense the technology package to local research institutes which could introgress the favorable trait into the local variety of rice. At the end, the local farmers could use it for humanitarian purposes, namely to produce for self-consumption and sales to a limited extent, and use the seeds for planting the following year.

4.4.2.3 History

The basic technology was originally invented in 1999 by two scientists, Prof. Ingo Potrykus (then ETH Zurich) and Prof. Peter Beyer (University of Freiburg).[665] However, in order for the technology to be implemented, additional research and development was needed.

To bring the technology to a ready-to-use stage, the inventors needed an industry partner who could work on the further development. After six months of negotiations, the inventor concluded an agreement with a for-profit crop protection company in the field, Syngenta in 2000.[666] The inventors assigned the patent rights to Syngentia and in return Syngenta were to conduct further research and development, and to grant a license with a right to sublicense for humanitarian purposes.[667]

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[664] Golden Rice Humanitarian Board, *Golden Rice and intellectual property*, http://www.goldenrice.org/Content2-How/how9_IP.php. (last visited Aug. 18, 2016).

[665] Golden Rice Humanitarian Board, *History of the Golden Rice project*, http://www.goldenrice.org/Content1-Who/who2_history.php. (last visited Aug. 18, 2016).

[666] Id.

[667] Id.

"Humanitarian Use" means (and includes research leading to):
Use in developing countries (low-income, food-deficit countries as defined by FAO)

Due to the lack of biosafety regulations in target countries, which was a prerequisite for the licensing to a specific jurisdiction, the field trial of the golden rice was only possible in 2004, in the United States.[668] The trial proved successful,[669] and was followed by the process of localization of the golden rice.[670]

In 2005, Syngenta decided not to exploit their patents on a commercial basis in developed countries because there are no serious vitamin A deficiencies. However it has continued the support for the Golden Rice Project.[671]

Currently, research is being done in Golden Rice Network Institutes in the Philippines, India, Vietnam, Bangladesh, China, Indonesia and Germany. They are developing the local rice varieties, and field trials were conducted in the Philippines.[672] However, some objections towards genetically modified food had arisen in the

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Resource-poor farmer use (earning less than US$10,000 per year from farming)
The technology must be introduced into public germplasm only.
No surcharge may be charged for the technology (i.e. the seed may cost only as much as a seed without the trait)
National sales are allowed by low-income farmers (in this way urban needs are also covered)
Reusing the harvested grain as seed for the following season is allowed (the farmer is the owner of his seeds

[668] *See supra* note 665

[669] *See supra* note 665

[670] *See supra* note 663

[671] Golden Rice Humanitarian Board, *Golden Rice licensing arrangements*, http://www.goldenrice.org/Content1-Who/who4_IP.php. (last visited Aug. 18, 2016).

[672] Aileen Garcia, Two seasons of Golden Rice trials in the Philippines concluded, http://irri.org/blogs/golden-rice-blog/two-seasons-of-golden-rice-trials-in-the-philippines-concluded. (last visited Aug. 18, 2016).

Philippines[673], resulting in one trial field being vandalized in 2013.[674] The research is going on, but the path to application is still unclear.

4.4.2.4 Significance and limitations

This example is significant in the sense that it addressed the issue of willing licensors such as universities only having basic technologies – great technology but not yet developed to the extent that can be made into a product utilizing their IP. It provided a win-win solution for the universities and professors who wanted to contribute to the nutrition problem in the developing world, companies who would like to cooperate with the technology holder in further development based on commercial and humanitarian reasons, and last but not least, people who got access to this fortified rice as a result of this project.

This licensing scheme is also interesting in the sense that it enables the differentiation of terms for two different implementation targets – commercial and humanitarian. This is enabled only through the IP system which allows some kind of exclusivity to the right holders.

It also succeeded in involving the local government and research institutions as the primary decision maker and to lighten the load of technology providers. "[T]he decision to adopt the technology is a national matter", and the governments are responsible for the results occurring from the implementation of the technology.[675] No warranties are provided by the licensor. [676]

The unfortunate slow progress was caused by anti-genetically modified crops

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[673] For examples, refer to the following articles, GM WATCH, *Philippines farmers uproot golden rice*, http://www.gmwatch.org/index.php/news/rss/14948-phillippines-farmers-uproot-golden-rice. (last visited Aug. 18, 2016).
See also, Greenpeace & Athit Perawongmetha, Golden Rice, http://www.greenpeace.org/seasia/ph/What-we-do/Genetic-Engineering/What-are-GMOs/Greenpeace-and-Golden-Rice/. (last visited Aug. 18, 2016).

[674] Sophie Clayton, *Golden Rice field trial vandalized*, http://irri.org/blogs/golden-rice-blog/golden-rice-field-trial-vandalized. (last visited Aug. 18, 2016).

[675] *See supra* note 671

[676] Id.

sentiment. This paper will not discuss this issue further as it is an external issue unrelated to IP.

4.5 Conclusions

In this chapter, creative licensing schemes in the fields of telecommunications, green technology, pharmaceuticals and biotech were introduced. Not all of these have been successful in terms of dissemination of technology due to limitations originating from the design of the licensing scheme or other external factors. Others, by adequately serving the needs of both the licensor and licensee, have become successful.

Among the licensing scheme addressing global environmental and health issues, the overall trend in technology licensing can be summarized as follows. Firstly, parties and facilitators of international technology licensing schemes are becoming increasingly aware of the limited role of pure patent licenses of existing patented technology and are keener on reflecting the realities of developing countries. As a result, package licensing of patents and trade secrets is becoming increasingly common.

As a step further, an element of open innovation, involving developing countries as research partners, has been added in newer platform schemes. Older schemes included only existing technologies, but the shift was made because of the recognition of the importance of new and adapted technologies in solving modern developing country issues.

Golden Rice Project was an initiative aiming at creating a patent pool for which license could be obtained free of charge. Established eight years later than the Golden Rice patent pool, Eco-Patent Commons was a patent commons that included only patents. In 2009, when the Pool for Open Innovation against Neglected Tropical Disease was established, the possibility of know-how licensing arrangements with technology providers was stated in their webpage, despite it being essentially a pool of patents. POINT evolved into WIPO Re:Search, which focused more on joint development of new technologies with institutions in developing countries. Medicines Patent Pool, established in the same year as WIPO Re:Search, provides a framework for joint development in addition to its patent pools. WIPO GREEN, despite being a platform for existing technologies, put forward the idea of package licensing of patents and relevant know-how, including technical assistance for the deployment of the licensed technology in the field.

Secondly, creative licensing schemes aiming at the dispersion of technology in developing countries are becoming diversified in terms of field of technology. In particular, more and more pharmaceutical companies created and joined licensing platforms for public benefit purposes in the late 2000s, as seen in 4.3. Through these initiatives, availability of medicine has increased greatly and many international research collaborations for future innovations were made possible.

In relation to the second trend, reflecting the change in the subject matter of licenses from patents to know-how and also the diversification of the field of technology, the licensors are requesting increased commitment from the licensees, and vice versa. Royalty-free licenses are also seen, but others require a relatively low payment. In cases such as KASUMI and POINT, the option of surrounding know-how licensing was available, but only against an additional payment.

The fact that the technology providers are willing to provide more valuable technology is an advantage for technology users, but it brought about a problem that some potential users cannot afford the technology. For licensees without financial means, WIPO Re:Search and WIPO GREEN connects licensees with funding institutions.

Lastly, a price differentiation between developed country markets, developing country markets and least-developed country markets has become more common, as seen in the two examples in the pharmaceutical sector. This enables licensees to profit from the sales in developed countries while providing affordable licenses in developing countries.

As one can see from the utilization of the IP system in order to enhance price differentiation, the overall attitude towards IP has seen a gradual shift. Patents used to be seen more as an obstacle to technology transfer in the past, and the focus of efforts were on removing obstacles (allegedly) created by patents. In newer schemes, IP has been used in order to divide the market based on price-zone and to create a symbiotic relationship between business for profits and pro bono activities. Medicines Patent Pool is a successful example of this price differentiation scheme. This paradigm shift shows us the possibility of IP playing a positive role in accelerating technology transfer.

Despite recent positive trends, some issues remain unresolved. Package licenses consisting of patents and know-how are not easy to provide. They most likely need to be tailor-made for each licensee, as all licensees are different in terms of technical ability. It also takes a significant amount of time both on the part of the licensor and the licensee. Risk of know-how leakage exists. In short, know-how licensing is time and effort consuming and risky. Licensors are often skeptical about the protection they could get in developing countries and are reluctant to go into licensing agreements. In order to encourage licensing, increased protection of IP and more reliable enforcement of law is necessary worldwide.

Some legislations are seemingly an obstacle to these licensing schemes. As will be further discussed in Chapter 5, some agreements stated in this chapter would be considered illegal in some jurisdictions, despite their intentions being "good." For example, some jurisdictions do not allow licensors to be exempt from liabilities stemming from the license, to include unilateral grant-back clauses or to include non-assertion clauses. It is permissible for developing countries to set their own licensing regulations under the TRIPS Agreement. However, overly strict regulations may simply kill innovation in creative licensing models

Even if the licensors are willing to provide licenses, the licensees are often financially weak and cannot afford a license. The international efforts of connecting licensees with funding institutions shall be continued. In addition, national governments need to take an active role in determining important technologies and allocate national resources to the import of technologies.

Also, limitations arise from the fact that technology transfers are a means of transferring existing technologies. Many technologies needed to solve the problems of the South still do not even exist. For these purposes, more shift towards joint research is favorable.

In the next chapter, regulations surrounding private licensing and non-voluntary licensing at both international and national levels are discussed in detail.

Chapter 5. International and National Licensing-related Legislations and Agreements

This Chapter elaborates on existing licensing regulations at the international and national level. International licensing regulations covered in this dissertation include international treaties with global coverage, the most important one being the TRIPS agreement, and other discussions on regulations that did not result in an agreement, such as the discussions on establishing an International Code of Conduct on the Transfer of Technology in the 1970s and 80s. These discussions and agreements have led to the establishment of international standards for national regulations that are considered permissible under international law.

National or regional licensing regulations consist typically of contract law, import and export regulations, competition law, patent law and technology transfer regulations. When a country is a member of an international agreement such as the TRIPS Agreement, their legislative options are limited to within what the agreement permits. National or regional regulations directly regulate what a contacting party can do and cannot do as licensor or licensee. In other words it sets the boundaries of freedom of contract with regard to licensing regulations. This paper takes EU, Japan, China and Ghana as examples and explores their licensing-related legislations and regulations.

Licensing agreements can, in principle, be made voluntarily between two parties. In all the target countries and regions, the principle of contractual freedom applies also to licensing agreements. Therefore, as long as it does not violate the mandatory provisions of national laws, the parties are free to agree to whatever best suits their needs. Developing countries often limit the contractual freedom with regard to technology imports and exports more strictly than developed countries, considering the unequal economic and technological status between parties, typically foreign technology providers and domestic technology recipients.

In order to facilitate voluntary licensing, a number of countries have a “license of right” system which enables potential patent licensors to register their patents at the patent office as ready to register under a fixed term. In some countries, the renewal fee of the

patent is reduced[677] in return for facilitating licensing through voluntarily limiting the exertion of their rights.

An increasingly important area of licensing regulations is Standard Essential Patent ("SEP") licensing. Usually, the contributors of technology declare to license their patents under Fair, Reasonable and Non-discriminatory ("FRAND") conditions during the standard setting process. This is a voluntary act, however the patent holders are obliged to follow a certain code of conduct based on antitrust law, other relevant legislations or administrative guidelines once a declaration is made.

Licensing can also be realized through non-voluntary measures. The TRIPS agreement allows national governments to establish a compulsory licensing mechanism which enables the grant of compulsory licenses under certain conditions. [678] Although all the target countries have maintained a cautious attitude toward the actual application of the legislation, all of them recognize the importance attached to this legislation as an emergency remedy to some of the unfavorable consequences of a monopoly the patent system can create.

Although TRIPS allows broad discretion of member states in granting compulsory licenses, "TRIPS plus agreements" in bilateral or multilateral free trade agreements (FTAs) sometimes limit the discretion of its members. The tying in of IP issues in trade agreements is criticized by some as coercion by developed countries against developing countries. On the other hand, developed countries see this as a legitimate tool to further harmonize the IP system. In order to provide an insight into how these clauses influence the parties, the implications of these agreements must also be discussed in this chapter.

Exhaustion principles have a significant influence on the potential licensing parties' licensing strategies and contracts. Therefore, this dissertation also elaborates on the interrelation between exhaustion principles and licensing practices.

[677] *See* detailed discussions in 5.4

[678] TRIPS Agreement art.31

5.1 Regulations on voluntary licensing

Substantial efforts have been made from the legal and public policy perspective to encourage technology transfer in the context of the development of developing countries. Historically, these efforts took two different approaches – first a "regulatory approach", then a "market-based development approach".[679]

A regulatory approach aims at encouraging technology transfer through protections of regulations of recipient countries and direct prohibition of terms in private technology transfer agreements that have adverse effect on development.[680] On the other hand, a market based approach aims at development through free contract between private parties with some obligations on the transferor not to abuse its unequal position.[681] These debates came to the end with the introduction and the almost world-wide acceptance of the TRIPS agreement, which adopted the latter position.[682] This dissertation discusses the two major movements to promote fair technology transfer through international agreements, namely the attempt to draft the ToT code and the TRIPS Agreement in the following sections.

Developing country governments have also made individual efforts to increase the influx of technology into their country while protecting their enterprises and their market. Developing countries attempt to accomplish this task in the legislative field through the relevant provisions in individual laws, which are described in detail in the following chapter through the examples of China and Ghana.

Developed countries on the other hand do not pose a high emphasis on increasing the trade of technology or to protect their enterprises in these transactions. They often stress the importance of freedom of contract and market order. Therefore, licensing regulations often take the form of antimonopoly regulations which regulates licensing

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[679] UNITED NATIONS CONFERENCE FOR TRADE AND DEVELOPMENT (UNCTAD), TRANSFER OF TECHNOLOGY (United Nations Conference for Trade and Development, Internet Edition ed. 2001) 44

[680] *See supra* note 679 44

[681] *See supra* note 679 44

[682] *See supra* note 679 45

activities which could be hazardous to free competition. Examples of these regulations are discussed in detail through the example of Japan and the EU, and when legislations at the EU level is insufficient to explain the situation in Europe, Germany is taken as an example.

5.1.1 Draft International Code of Conduct on the Transfer of Technology

The International Code of Conduct on the Transfer of Technology was drafted several times in the 1970s and the 1980s. Although this has never been finalized, the negotiation process and the resulting draft are of crucial importance in understanding the international debate concerning technology transfer. This section looks into the context, negotiation process, the reason for its failure to reach an agreement the proposed draft and implications for the future.

5.1.1.1 Context

The first move for the increased dissemination of technology came from Latin America. In the 1960s, Brazil and Argentina led the discussion on enhanced technology transfer for development in the United Nations forum as the spokesperson of developing countries. In 1961, Brazil tabled a proposal in the UN General Assembly on patents and technology transfer to developing countries, which was later on approved as a UN General Assembly Resolution. The resolution called for a report to be prepared by the UN secretary general on the effect of the patent system for developing countries, which was actually completed in 1964, though it did not go so far as to suggest holding an international conference on this matter[683].

In the 1960s, not only insufficient technology transfer from the developed world to the less developed but also the unfairness of international trade itself had become a focus of criticism from developing countries. In order to create a "development-friendly international regime"[684], the United Nations Conference on Trade and Development

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[683] Carolyn Deere-Birkbeck, *Developing Countries in the Global IP System before TRIPS*, *in* RESEARCH HANDBOOK ON THE PROTECTION OF INTELLECTUAL PROPERTY UNDER WTO RULES: INTELLECTUAL PROPERTY IN THE WTO (Carlos M. Correa ed., Edward Elgar Publishing 2010) 34

[684] *See supra* note 683 35

(UNCTAD) was established in 1964, which became the main forum of discussion on the TOT Code[685]. In 1970, the UN General Assembly voted for a resolution on the International Development Strategy for the Second UN Development Decade, calling for a program to promote technology transfer and the review of the international patent conventions.

This new trend in the international community may owe to the fact that the composition of the UN member states changed drastically in 1960, and it kept transforming throughout the decade. The international community consisted of more developing nations than before due to the independence of former colonies and represented the views of the developing countries clearer than before. At the beginning of the 1960s, the number of UN member states was 99 – roughly half the current number. During this decade, 28 countries joined the United Nations, the vast majority being former colonies which just achieved independence[686].

In the 1970s, developing nations have called for a "New International Economic Order (NIEO)", resulting in the Declaration on the Establishment of a New International Economic Order[687] of the UN assembly on May 1st, 1974. The preamble of the Declaration reads as follows:

We, the Members of the United Nations……

Solemnly proclaim our united determination to work urgently for the Establishment of a New International Economic Order based on equity, sovereign equality, interdependence, common interest and cooperation among all States, irrespective of their economic and social systems which shall correct inequalities and redress existing injustices, make it possible to eliminate the widening gap between the developed and the developing countries and ensure steadily accelerating economic and

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[685] *See supra* note 683 48

[686] United Nations, *Growth in United Nations membership, 1945-present*, http://www.un.org/en/sections/member-states/growth-united-nations-membership-1945-present/index.html. (last visited Aug. 21, 2016).

[687] Resolution adopted by the GAOR, 3201 (S-VI), Declaration on the Establishment of a New International Economic Order (A/RES/S-6/3201) May 1, 1974

social development and peace and justice for present and future generations……

Key importance was attached to technology as a tool for improving the living standard of humanity.[688] The declaration stated that "[t]echnological progress has also been made in all spheres of economic activities in the last three decades, thus providing a solid potential for improving the well-being of all peoples"[689]. However the inequalities[690] in the sharing of technology among developed and developing countries[691] hindered the poorer population from enjoying the fruits of the advancement of technology. This was at the time the common perception of developing nations, which grew into an overwhelming majority in the General Assembly of the United Nations as new countries were born through independence.

In addition to the shared sense of the criticalities of the technology gap, a sense of "hostility"[692] towards transnational corporations was widespread also in developing nations which also contributed to pushing the negotiation on the ToT code forward. Reflecting this concern, the Declaration also calls for "[r]egulation and supervision of the activities of transnational corporations by taking measures in the interest of the national economies of the countries where such transnational corporations operate on the basis of

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[688] Surendra J. Patel, *From Santiago de Chile (1972) to the Dawn of the Third Millennium*, *in* SURENDRA J. PATEL ET AL. INTERNATIONAL TECHNOLOGY TRANSFER, THE ORIGINS AND AFTERMATH OF THE UNITED NATIONS NEGOTIATIONS ON A DRAFT CODE OF CONDUCT (Wolters Kluwer Law & Business 2000). 180

[689] Resolution adopted by the GAOR, 3201 (S-VI), Declaration on the Establishment of a New International Economic Order (A/RES/S-6/3201) May 1, 1974 art.1

[690] Resolution adopted by the GAOR, 3201 (S-VI). Declaration on the Establishment of a New International Economic Order (A/RES/S-6/3201) May 1, 1974, Declaration on the Establishment of a New International Economic Order, Preamble

[691] Resolution adopted by the GAOR, 3201 (S-VI). Declaration on the Establishment of a New International Economic Order (A/RES/S-6/3201) May 1, 1974, Declaration on the Establishment of a New International Economic Order, art.1

[692] ABDULQAWI A. YUSUF, INTERNATIONAL TECHNOLOGY TRANSFER: THE ORIGINS AND AFTERMATH OF THE UNITED NATIONS NEGOTIATIONS ON A DRAFT CODE OF CONDUCT (Surendra J. Patel et al. eds., Wolters Kluwer Law & Business 2000) xxiii

the full sovereignty of those countries."[693]

Although being one of the main legal instruments that emerged from this historical Declaration, the ToT code had not materialized before developing countries "abandoned their quest for an NIEO"[694] and the NIEO became "entirely forgotten"[695]. Instead, TRIPS, based on a market-based approach, has become the standard for technology-related regulations in developing countries, as discussed below.

The difficulty of the NIEO approach was that it did not reflect the double-sided reality in developing countries with regard to technology and development. The transnational companies, who were the target of criticism, were at the same time the key to technology transfer. They may have been engaging in unfair trade using their dominance. However they still needed to be part of the solution to the issue of technology gap. Therefore, the "shrew" had to be "tamed"[696] and incorporated into the technology transfer scheme rather than excluded. However, the proposed regulations were more focused on regulating the transnational companies rather than trying to incorporate them into the development process.

5.1.1.2 Legislative history

5.1.1.2.1 UNCTAD Conference in Santiago de Chile/Pugwash Conference

On the first meeting of the United Nations Conference on Trade and Development (UNCTAD) in 1964[697], a recommendation to competent international bodies on exploring the possibilities of adapting legislations concerning technology

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[693] Resolution adopted by the GAOR, 3201 (S-VI). Declaration on the Establishment of a New International Economic Order (A/RES/S-6/3201) May 1, 1974, art.4g

[694] *See supra* note 692

[695] Nils Gilman, *The new international economic order: A Reintroduction*, HUMANITY: AN INTERNATIONAL JOURNAL OF HUMAN RIGHTS, HUMANITARIANISM, AND DEVELOPMENT, 6 1–16 (2015).

[696] WILLIAM SHAKESPEARE, THE TAMING OF THE SHREW (Linzy Brady ed., Cambridge University Press 2014).

[697] United Nations Conference for Trade and Development, *Unctad.org*, http://unctad.org/en/Pages/Home.aspx. (last visited Aug. 22, 2016)

transfer was made.[698] Following the recommendation, the United Nations Economic and Social Council requested the Secretary-General to "explore possibilities for adaptation of legislation concerning the transfer of industrial technology to developing countries" and called for "appropriate action in light of the recommendation on this subject" by UNCTAD. [699]

The UNCTAD Secretariat has conducted a number of studies on this topic.[700] Finally, in September 1970, the Intergovernmental Group on Transfer of Technology of UNCAD was established as a part of the formal structure of UNCTAD. [701]
In the early 1970s, there were several UN General Assembly resolutions that encouraged and endorsed UNCTAD to increase their efforts on encouraging technology transfer.[702] Reflecting all the resolutions and other discussions and declarations of UN organizations and other international meetings[703], at the third session of the UNCTAD conference held in Santiago de Chile[704], UNCTAD member states requested the Secretary-General of UNCTAD and the Director-General of the World Intellectual Property Organization (WIPO) to "carry out jointly a study of possible bases for new international legislation regulating the transfer from developed to developing countries of patented and non-patented technology, including related commercial and legal aspects of such transfer".[705]

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[698] Final Act, Proceedings of the United Nations Conference on Trade and Development, Annex A.IV.26 Mar. 23 – Jun. 16, 1964

[699] Resolution 1013 (XXXVII) of the ESCOR, Jul 27 1964

[700] Michael Blakeney, *Transfer of Technology and Developing Nations*, FORDHAM INTERNATIONAL LAW JOURNAL, Vol. 11, Issue 4 (1987).690

[701] *See supra* note 688 183

[702] Examples of these UN General Assembly resolutions are GAOR Resolution 2658 (XXV) of Dec. 7 1970, 2726 (XXV), Dec. 15, 1970 and 2821 (XXVI), Dec. 16, 1971.

[703] For a list of these international discussions and agreements, *see* United Nations Conference on Trade and Development (UNCTAD) Resolution 39(III). Transfer of Technology, adopted at the third session of the UNCTAD conference held in Santiago de Chile, Apr. 13 to May 21, 1972

[704] The third session of the UNCTAD conference held in Santiago de Chile, Apr. 13 to May 21, 1972

[705] UNCTAD Resolution 39(III). Transfer of Technology, II. 9.

However, the difference in opinion between Group 77, a coalition of developing countries established by developing countries at the first UNCTAD meeting in 1964,[706] and Group B, consisting of developed nations,[707] were difficult to reconcile, and Group B prevented the UNCTAD secretariat from going further with the preparatory work on the code of conduct on technology transfer.[708]

Parallel to these developments in the UNCTAD and the General Assembly, there were discussions among scientists who were increasingly concerned about the development of developing countries.[709] This discussion took place at the Pugwash Conferences on Science and World Affairs, which were initially created to discuss, from a scientific perspective, the issues of nuclear weapons and disarmament. [710]

The discussion at UNCTAD being stagnant, a Mexican economist, Miguel Wionczek proposed that the possibility of having a code of conduct on technology transfer be discussed in Pugwash.[711] In the 23rd Pugwash Conference in 1973, the proposal was considered and a working group was established in the following year in order to design the code of conduct. After 5 days of intense discussion of professionals from the North, South, East and West with diversified backgrounds, a 12-page code was drafted.[712]

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[706] *See supra* note 48 49

[707] *See supra* note 706

[708] Geoffery Oldham, *The Pugwash Code*, *in* Abdulqawi A. Yusuf *in* INTERNATIONAL TECHNOLOGY TRANSFER: THE ORIGINS AND AFTERMATH OF THE UNITED NATIONS NEGOTIATIONS ON A DRAFT CODE OF CONDUCT (Surendra J. Patel et al. eds., Wolters Kluwer Law & Business 2000) 194. There also existed a group of socialist countries (Group D) which consisted a third block of countries, which standpoint was in the middle of Group 77 and Group B. *See supra* note 706 49-50

[709] *See supra* note 708 (Oldham) 194

[710] *See supra* note 708 (Oldham) 194. The conference was named after its first location of meeting, Pugwash in Nova Scotia, Canada. *See* Pugwash Conferences on Science and World Affairs, *About Pugwash*, PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS, https://pugwash.org/about-pugwash/. (last visited Jan. 24, 2017).

[711] *See supra* note 708 (Oldham) 194-195

[712] *See supra* note 708 (Oldham) 195

The draft included a list of prohibited clauses in technology transfer agreements[713], mandatory guarantees[714], governing principles for the procedures for jurisdiction and settlements of disputes[715] and a mandate for developing and developed country governments to take legislative and administrative measures to enforce the application of the standards set out in the Code[716]. The draft Pugwash Code shares the basic elements with technology licensing regulations that many developing countries have today.

The draft Pugwash code was brought to the next meeting of the UNCTAD Intergovernmental Group on Transfer of Technology in 1974, which resulted in resuming the negotiations on the technology transfer code.[717]

5.1.1.2.2 Intergovernmental Negotiations in UNCTAD and the United Nations General Assembly

Since the resumption of negotiations at the UNCTAD in 1974, three negotiating sessions were held between 1974 and 1976. Several drafts were prepared during this period and the Groups 77, B and D reached consensus at the Fourth Session of the UNCTAD (UNCTAD IV) in 1976 so that the negotiations could move forward.[718] However, disagreements existed on whether the code should be mandatory (proposed by Group 77)[719] or voluntary (proposed by Group B)[720].

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[713] The Pugwash Conferences on Science and World Affairs Working Group on Code of Conduct on Transfer of Technology Draft Code of Conduct on Transfer of Technology (Report of the Working Group), Geneva 1-5 April 1974 (hereinafter the "Draft Pugwash Code"), III and V

[714] Draft Pugwash Code, V

[715] Draft Pugwash Code, VII

[716] Draft Pugwash Code, VI

[717] *See supra* note 709 195

[718] Proceedings of the United Nations Conference on Trade and Development Fourth Session Nairobi, May 5-31, 1976, Para 139-143. (Hereinafter "UNCTAD IV Proceedings") This conference is commonly referred to as "UNCTAD IV."

[719] UNCTAD IV Proceedings Para 142

[720] UNCTAD IV Proceedings Para 139

Following UNCTAD IV, the draft code was considered by the Intergovernmental Group of Experts appointed by the UNCTAD IV General Assembly, [721] convened in 1975 following the request of the Intergovernmental Group who affirmed the feasibility of the Pugwash Code[722]. The group held 6 sessions during 1976-1978 and some parts of the code reached a consensus but some differences remained.[723]

In the meantime, the Diplomatic Conference on the International Code of Conduct was conveyed by the UN General Assembly in 1977. The first conference was held in 1978 and met another three times until 1981.[724] They had nearly reached a consensus apart from a few important differences between Group 77 and Group B that could not be reconciled.[725]

Therefore, in 1981, the Interim Committee was established in order to accelerate the finalization of the code. They met three times in the following year and provided the ground upon which the fifth Diplomatic Conference had built its efforts in reaching a consensus. However, the sixth and the last session held in May-June 1985[726] could not reach a successful agreement due to the movement stemming from the North to bring the issue into the GATT negotiations.[727] The issue was since discussed in the GATT negotiations, which has resulted in the TRIPS agreement discussed later in this chapter, in "TRIPS Agreement"

5.1.1.3 Proposed draft, discussions and unresolved points

The latest draft of the Code agreed in 1985 consists of a preamble and 9 chapters.

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[721] *See supra* note 688 184, *see* also *supra* note 706 48

[722] *See supra* note 700 691

[723] *See supra* note 688 184

[724] *See supra* note 688 184

[725] *See supra* note 688 185

[726] Milan Bulajic, *International Protection of Intellectual Property in the Context of the Right to Development: Comment on the German Proposal*, *in* THE RIGHT TO DEVELOPMENT IN INTERNATIONAL LAW (Subrata Roy Chowdhury et al. eds., Martinus Nijhoff Publishers 1992). 301

[727] *See supra* note 688 187-189

Chapter 1[728] defines the terminology and the scope of the agreement, followed by Chapter 2[729], which sets out the objectives and principles of the Code. Of all the other chapters, Chapters 3, 6, 7 and 8 are addressed to governments, and Chapters 4, 5, and 9 to parties.[730] Of all the chapters, 1, 4 and 9 have been the focus of intense discussion and the major points of disagreement.

5.1.1.3.1 Chapter 1 Definitions and scope of application

Chapter 1, "Definitions and Scope of Application" broadly defines the definition of "parties" to which the code is applicable to include "any person, either natural or juridicial", regardless whether the parties are private or public.[731] "Transfer of technology" refers to the "transfer of systematic knowledge" and does not include mere sale or lease of goods.[732]

More precisely, the transaction of technology includes the following:

(i) assignment, sale and licensing of IP;[733]

(ii) "provision of know-how or technical expertise";[734]

(iii) "the provision of technical knowledge necessary for the installation, operation and functioning of plant and equipment, and turnkey projects";[735]

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[728] Draft International Code of Conduct on the Transfer of Technology (As of 1985, Put forth in the 6th Diplomatic Conference on the International Code of Conduct, May 13 – Jun.5 1985, hereinafter "Draft ToT Code"), Chapter 1 Definitions and scope of application

[729] Draft ToT code, Chapter 2 Objectives and principles

[730] UNCTAD Secretariat, *The Status of Negotiations: a 1990 Evaluation*, *in* ABDULQAWI A. YUSUF INTERNATIONAL TECHNOLOGY TRANSFER: THE ORIGINS AND AFTERMATH OF THE UNITED NATIONS NEGOTIATIONS ON A DRAFT CODE OF CONDUCT (Surendra J. Patel et al. eds., Wolters Kluwer Law & Business 2000). 145

[731] Draft ToT Code, Chapter 1.1 (a)

[732] Draft ToT Code, Chapter 1.2

[733] Draft ToT Code, Chapter 1.3 (a)

[734] Draft ToT Code, Chapter 1.3 (b)

[735] Draft ToT Code, Chapter 1.3 (c)

(iv) "provision of technical knowledge necessary to acquire, install and use machinery, equipment, intermediate goods and/or raw materials" acquired by the transferee;[736] and

(v) "provision of technological contents of industrial and technical cooperation arrangements"[737].

One could see that in this definition, not only patents but also know-how are covered, with emphasis on enabling the use of IP and goods provided through international transaction.

The final draft of Chapter 1 contains a heading titled "1.4 International transfer of technology transactions", on which an agreement between Group B and Groups 77 and D could not be achieved.[738] The major point of disagreement was whether the Code would be applicable to transactions between parties whose domicile is in the same country but at least one is a branch or a subsidiary of a foreign entity. [739]

The position of Groups 77 and D was that the Code shall apply to technology transfer agreements between companies inside the border of a country when at least one party is a branch or subsidiary of a foreign entity, or acting as an intermediary in the technology transfer.[740] The position of Group B was that the coverage would be too broad and the code should only apply to cross-border transactions in a narrower sense. [741] This difference could not be overcome.

5.1.1.3.2 Chapter 2 Objectives and principles

Chapter 2 "Objectives and principles" were not as controversial as the previous chapter. The "Objectives" consists of 10 subsections [742] and the "Principles" of 9

[736] Draft ToT Code, Chapter 1.3 (d)

[737] Draft ToT Code, Chapter 1.3 (e)

[738] *See supra* note 730 161

[739] *See supra* note 730 161

[740] *See supra* note 730 161

[741] *See supra* note 730 161

[742] Draft ToT Code, Chapter 2.1 (i) - (v)

subsections[743]. The objectives of the code, in sum, is to establish the rules and standards on which parties of technology transfer agreements shall be based[744], to aid the governments in forming, adopting and implementing national policies and legislations on the subject,[745] and to "facilitate and increase the flow of" technology particularly into developing countries.[746] From this it can be seen that the addressee of the Code is both governments and private parties of technology transfer contracts.

The principle of the code is that it is universally applicable in scope[747] and that parties to the contract and states have their respective responsibilities under the code[748]. It stresses on the one hand that technology transfer contracts shall be mutually beneficial[749], and on the other hand that the sovereignty of states shall be recognized[750], the right to adopt measures for facilitating and regulating international technology transfer belongs to individual states[751] and the laws of the recipient country shall be respected[752]. A delicate balance between the North and the South has been targeted.

5.1.1.3.3 Chapter 3 National regulation of transfer of technology transactions

Chapter 3 "National regulation of transfer of technology transactions" affirms the right of states to regulate technology transfer transactions[753] and to take measures on organizational forms and mechanisms[754] having regard to its national development needs[755]. However, at the same time, the Code requires states to protect the rights and interests of parties and to apply the regulations and measures in a fair and consistent

[743] Draft ToT Code, Chapter 2.2 (i) – (iv)
[744] Draft ToT Code, Chapter 2.1 (i), (viii), (ix) and (x)
[745] Draft ToT Code, Chapter 2.1 (vii)
[746] Draft ToT Code, Chapter 2.1 (iii) - (vi)
[747] Draft ToT Code, Chapter 2.2 (i)
[748] Draft ToT Code, Chapter 2.2 (v)
[749] Draft ToT Code, Chapter 2.2 (ii), (vi), (vii) and (ix)
[750] Draft ToT Code, Chapter 2.2 (iii)
[751] Draft ToT Code, Chapter 2.2 (ii)
[752] Draft ToT Code, Chapter 2.2 (ix)
[753] Draft ToT Code, Chapter 3.4 (a) - (i)
[754] Draft ToT Code, Chapter 3.4 (j) – (q)
[755] Draft ToT Code, Chapter 3.3

manner. It states that effective protection of IPRs and other relevant rights shall be ensured[756], and these national regulations and measures should take into account, in an equitable manner, the legitimate interests of all parties[757] and that it should be applied "fairly, equitably and on the same basis to all parties in accordance with established procedures of law and the principles and the principles and objectives of the Code."[758]

The measures and regulations may deal with financial policies, setting of terms, conditions and criteria for the renegotiation of transactions, regulations on technical aspects of transactions and establishing organizational forms mechanisms for the facilitation and regulation of international technology transfer.[759]

The chapter rightly emphasizes the importance of regulations as well as the protections of IP and other relevant rights. However, the draft ToT Code only covers the regulation aspect. The TRIPS Agreement provides a holistic approach to this issue by setting global standards of IP protection and at the same time allowing room for individual regulations by member states on technology licensing.

5.1.1.3.4 Chapter 4 No agreed title

Chapter 4 on restrictive business practices contained issues that were "perhaps the most crucial to the fate of the entire Code"[760], and the participants of the negotiations could not reach a consensus. The parties could not even agree on the title, and there exists multiple titles for the Chapter in the last remaining draft.[761] It was envisioned that the preamble would include the purpose of the Chapter, however the participants could not agree on what kind of practices should be prohibited. [762]

Group B asserted that only anticompetitive practices, such as abuse of dominant

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[756] Draft ToT Code, Chapter 3.3

[757] Draft ToT Code, Chapter 3.1 (iii)

[758] Draft ToT Code, Chapter 3.2

[759] Draft ToT Code, Chapter 3.4

[760] *See supra* note 730 162

[761] Titles under consideration were [The regulation of practices and arrangements involving the transfer of technology][Restrictive business practices][Exclusion of political discrimination and restrictive business practices]

[762] *See supra* note 730 162-163

position and restrictive licensing arrangements, which were prohibited under their own anti-competition law, shall be regulated.[763] Group 77 asserted on the other hand that any practice with an adverse effect on the development of developing countries shall be prohibited[764], and was indifferent towards antitrust issues[765].

Reflecting on this difference in position, Group B argued against blanket prohibitions, as some anticompetitive behaviors can have other positive effects on the economy and should be prohibited only after a case-by-case analysis on whether the act is harmful or beneficial as a whole, by adding the term "unreasonably" to all the listed practices in Chapter 4.[766] Group 77 did not agree to the proposal of Group B and insisted that had a concern that the term "unreasonably" could lead to arbitrary behavior of the supplying party.[767] Instead they suggested that the provisions allow discrimination against suppliers if relevant national authorities deemed the discriminative measures to be for the benefit of public interest. Group B was against the proposal as they feared that arbitrary discrimination of foreign technology suppliers by the recipient country authority would happen, [768] and requested national treatment of all parties. Group 77 insisted on reserving the right to discriminate against foreign parties, considering their unequal bargaining power and the need for development of their local firms and industries.[769]

However, through the course of the negotiations, the participants somehow could agree on some points. Group 77 initially proposed a list consisting of 40 restricted practices, but finally agreed on cutting the list to 14, as seen below. The list was consistent with relevant legislations in the developed world at that time and was seen as "unilateral concessions" by Group 77 in order to reach an agreement.[770]

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[763] *See supra* note 730 162
[764] *See supra* note 730 162-163
[765] *See supra* note 730 162
[766] *See supra* note 730 162-163
[767] *See supra* note 730 163
[768] *See supra* note 730 163
[769] *See supra* note 730 162-163
[770] *See supra* note 730 164

(1) *Grant-back provisions.* It was agreed that exclusive grant-back provisions which constitute an abuse of dominant market position, or on an exclusive basis "without offsetting consideration or reciprocal obligations from the supplying party" be restricted. However, whether or not a non-exclusive unilateral grant-back provisions should be allowed remained a point of disagreement.

(2) *Challenges to validity.* Group B wanted the restrictions on challenges to validity to be only prohibited when they were unreasonable, and the others agreed on a blanket prohibition. This difference could not be reconciled.

(3) *Exclusive dealing.* The parties agreed to prohibit unreasonable restrictions on the freedom of the acquiring party to sell, represent or manufacture similar or competing technologies or products.

(4) *Restrictions on research.* The participants agreed that "unreasonable" restrictions on the acquiring parties to do research and development for the purpose of adaptation of technology to local conditions or development of new products, processes or equipment should be restricted, but whether reasonable restrictions were to be allowed was the point of discussion. Group B and Group D argued that reasonable restrictions should be allowed, but Group 77 insisted on a blanket restriction.

(5) Restrictions on use of personnel. To require the recipient to use personnel designated by the supplier of technology or to influence the use of personnel in the recipient country beyond the time when trained personnel are available should be prohibited, except for when the designation is necessary to ensure the efficient transmission and the implementation of the transferred technology. Group B insisted that the restriction should only apply to "unreasonable" restrictions while the others disagreed.

(6) *Price fixing*. It was agreed that unreasonable price fixing of products or services resulting from the implementation of technology be restricted. However, the question whether this prohibition should extend to all price fixing rather than only unreasonable cases remained unresolved. Group B

insisted that the restriction shall be only applicable to unreasonable price fixing but the others were for blanket restriction.

(7) Restrictions on adaptations. Unreasonable restrictions on adaptations, or posing unreasonable obligations to make unwanted or unnecessary design or specification changes are not allowed when the acquiring party makes the changes without using the name, trade or service marks or trade names. Whether all restrictions or obligations on adaptations are prohibited remained undecided, due to Group B's dissent in this matter. However it was agreed that exceptions shall be permitted when the supplying party or its related entities request the restriction on adaptations or obligations to make changes due to its rendering the product or service unsuitable, as a receiver of the supplied product or services.

(8) Exclusive sales or representation agreements Requiring the acquiring party to grant exclusive sales or representation rights to any entity designated by the supplier, including the supplier itself, is restricted. Exemptions are given to when the contract is a subcontracting or manufacturing arrangement in which the parties have agreed that all or part of the products will be supplied to the designated entity.

(9) Tying arrangements Imposing acceptance of unwanted additional technology, both current and future, goods or services or restricting sources of technology, goods or service as a condition of the technology transfer is prohibited. Group B asserted that this shall apply only to undue impositions, while others disagreed. However, the participants agreed that, granted that adequate specification of the technology, goods or services is not feasible or would require additional disclosure of secrets, the application of this article is exempted when it is necessary for fulfilling the guarantee on performance or when the supplier's trade or service mark is used and the quality of the product or service needs to be assured.

(10) Export restrictions For this article, the text does not appear in the draft of 1985.

(11) Patent pool or cross-licensing arrangements and other arrangements Restrictions arising out of patent pool or cross-licensing arrangements or the like, on territories, quantities, prices, customers or markets which unduly limits access to newly developed technology or results in abusive domination of an industry or market with negative effects on technology transfer are prohibited, unless these restrictions are appropriate and are ancillary to cooperation arrangements.

(12) Restrictions on publicity Restrictions on advertising or publicity are not allowed, unless it is necessary to avoid product liability on the part of the supplying party, for consumer safety purposes, to secure the confidentiality of the transferred technology. Where the advertisement or publication mentions the name, trade or service marks of the supplier, the necessity to prevent injury to the supplier's good will or reputation may also be a reason for exception.

(13) Payments and other obligations after expiration of industrial property rights The participants agreed that imposing payments or other obligations in return for the continued use of invalidated, cancelled or expired IP rights shall be "dealt with by the appropriate applicable law and the terms of the agreement to the extent consistent with that law."

(14) Restrictions after expiration of arrangement. The text of the article does not appear in the draft of 1985.[771]

5.1.1.3.5 Chapter 5 Responsibilities and Obligations of Parties

Chapter 5, "Responsibilities and Obligations of Parties" was less controversial than the previous chapter. It states the responsibilities and obligations of parties during both negotiating phase and contractual phase.

During the negotiating phase, the code states that each party should be responsive to the development objectives of the respective countries take into account the other party's request regarding if it is technically and commercially feasible.[772] Measures for this purpose include;

[771] Draft ToT Code, Chapter 4. 1-14

[772] Draft ToT Code, Chapter 5.2

(a) use of locally available resources, including material, technologies and technical skills, services, and human resources.

(b) rendering of technical services

(c) unpackaging of transferred technology.[773]

During negotiations, the parties shall abide by fair and honest business practices and both potential parties should negotiate in good faith with the aim of achieving an agreement under fair and reasonable commercial terms and conditions.[774] The price or considerations shall be fair, reasonable and clearly indicated in a manner which allows comparison between the prices of similar technologies.[775] Provision of information on prior arrangements which may affect the transfer to the extent appropriate should be considered[776] and confidentiality of information received from the other party shall be protected.[777] Negotiations can be terminated if either one of the parties determines that a satisfactory agreement cannot be concluded.[778]

The prospective acquiring party has the obligation to provide the following information: technical conditions, official development objectives, legislation of the acquiring country and use of the subject matter technology.[779]

The prospective supplying party on the other hand has the obligation to disclose the issues concerning the implementation of the technology already known to or that has been drawn the attention of the supplier.[780] This obligation arises specifically when implementing the technology, specifically, where the technology, when implemented in a manner to which the party would agree upon, would not meet requirements on health, safety and environment in the recipient country.[781] Any serious risk imposed on health, safety and environment upon implementation known to the supplier shall also be

[773] Draft ToT Code, Chapter 5.2

[774] Draft ToT Code, Chapter 5.3 (a)(i)(i)

[775] Draft ToT Code, Chapter 5.3(a)(i)(ii)

[776] Draft ToT Code, Chapter 5.3(ii)

[777] Draft ToT Code, Chapter 5.3(iii)

[778] Draft ToT Code, Chapter 5.3(iv)

[779] Draft ToT Code, Chapter 5.3(b)

[780] Draft ToT Code, Chapter 5.3(c) (i)

[781] Draft ToT Code, Chapter 5.3(c) (i)

disclosed.[782] Furthermore, any issues concerning the existence or the validity of the technology shall also be disclosed.[783] In addition to these obligations, the supplying parties must consider the provision of supplies necessary to implement the technology to the extent feasible.[784]

Once the negotiations bear fruit and an agreement is signed, then comes the contractual phase. The agreement shall include, where appropriate, contractual obligations including the following[785]:

(i) access to improvements
(ii) confidentiality
(iii) dispute settlement and applicable law
(iv) description of the technology (including the guarantee of the supplier that the technology meets the description)
(v) suitability for use
(vi) rights to the technology (including a representation that third party rights which would be infringed by the implementation of the subject matter do not exist to the best knowledge of the supplier)
(vii) commitment of both parties to avoid taking actions intending to injure the other party's good will or reputation, and commitment to maintaining the quality level on the part of the recipient where the recipient uses the supplier's trademarks, trade names or other identifications of good will.
(viii) performance guarantee based on specification of technical performance parameters
(ix) transmission of relevant technical documentation and other data from the supplier to the recipient
(x) training of personnel and provision of accessories, spare parts and components

[782] Draft ToT Code, Chapter 5.3(c) (i)
[783] Draft ToT Code, Chapter 5.3(c) (ii)
[784] Draft ToT Code, Chapter 5.3(c) (iii)
[785] Draft ToT Code, Chapter 5.4

(xi) Liability upon non-fulfillment of responsibilities under the technology transfer contract[786]

5.1.1.3.6 Chapter 6 Special treatment for developing countries

Chapter 6 provides for special treatment for developing countries that should be taken by governments of developed countries, either directly or through appropriate international organizations. The specific measures include[787]:

(i) facilitation of access by developing countries to information concerning technology

(ii) transfer of technology to the "freest and fullest" extent possible when the transfer is subject to decisions of public entities

(iii) facilitate access to technology when the transfer is subject to decisions of private entities

(iv) cooperation in development of scientific and technological resources in developing countries

(v) assist building technological capacity in developing countries

(vi) cooperation in establishing or strengthening national, regional and/or international institutions for development and acquisition of technology and skills

(vii) encourage the adaptation of research and development, engineering and design to make it suitable for developing countries

(viii) cooperation in measures for greater utilization of personnel and institutions of developing countries

(ix) encouragement of training of personnel from developing countries.[788]

Governments of developed countries should take into account requests from developing countries as a part of international development assistance and cooperation[789] to;

[786] Draft ToT Code, Chapter 5.4 (i) – (xi)

[787] Draft ToT Code, Chapter 6.1

[788] Draft ToT Code, Chapter 6.1 (i) – (x)

[789] Draft ToT Code, Chapter 6.2

(i) contribute to the development of national technology through provision of experts

(ii) provide training on development of technologies or adaptation of technologies for research, engineering, design personnel and other necessary personnel from developing countries

(iii) assist and cooperate in the development and administration of laws and regulations facilitating technology transfer

(iv) support projects in developing countries for the development and adaptation of technology suitable for their countries

(v) grant credits on favorable conditions for the financing of development projects concerning technology transfer

(vi) assist and cooperate in the development of laws and regulations for avoiding health, safety and environmental risks associated with technology[790]

Furthermore, developed countries should incentivize enterprises and institutions to[791]:

(i) assist in the development of technological capabilities of enterprises in developing countries, including training

(ii) undertake the development of technology appropriate to the needs of developing countries

(iii) undertake R&D activity in developing countries of interest to such countries, as well as to improve co-operation between enterprises and scientific and technological institutions of developed and developing countries

(iv) assist in projects by enterprises and institutions in developing countries for the development and adaptation of technologies suitable to

[790] Draft ToT Code, Chapter 6.2

[791] Draft ToT Code, Chapter 6.3, shortened by the author

developing countries.

In implementing the special treatment described in this chapter, economic and social objectives of each country, especially that of developing countries, should be taken into account.[792]

5.1.1.3.7 Chapter 7 International collaboration

In this chapter, the states recognized the need to strengthen international collaboration for increased flow of technologies in order to strengthen the technical capability of all countries.[793] The chapter goes on by listing possible forms of such collaborations, namely as follows[794]:

(i) Exchange of available information on the availability and description of technologies and technological alternatives

(ii) Exchange of information on experience in seeking solutions to problems relating to technology transfer, particularly restrictive [business] [795] practices

(iii) Exchange of information on development of technology transfer-related national legislation

(iv) Promotion of the conclusion of international agreements which should provide equitable treatment for both technology supplying and recipient parties and governments

(v) Consultations which may lead to greater harmonization, where appropriate, of technology transfer-related national legislation and policies

(vi) Promotion, where appropriate, of common programs for searching for, acquiring and disseminating technologies

(vii) Promotion of programs for the adaptation and development of

[792] Draft ToT Code, Chapter 6.4

[793] Draft ToT Code, Chapter 7.1

[794] Draft ToT Code, Chapter 7.2

[795] This article was not agreed upon by the parties.

technology in the context of development objectives

(viii) Promotion of the development of scientific and technological resources and capabilities stimulating the development of indigenous technologies

(ix) Action through international agreements to avoid, as far as possible, imposition of double taxation on earnings and payments arising out of transfer of technology transactions.

5.1.1.3.8 Chapter 8 International Institutional Machinery

Member states of this Code are obligated in this chapter to take "appropriate steps at the national level to meet their commitment to the Code."[796]

An "International Institutional Machinery" is envisioned in this chapter. Although not much is agreed to, some structure and function of the Machinery was decided. Its major role was to "provide a forum and modalities for consultations, discussion, and exchange of views between States on matters related to the Code, in particular its application and its greater harmonization, and the experience gained in its operations"[797] and to conduct research and produce publications and reports relating to the code[798]. It shall not be involved in a dispute between member states regarding specific technology transfer transactions or "act like a tribunal or otherwise pass judgment on the activities or conduct of individual Governments or of individual parties in connection with a specific transfer of technology transaction."[799]

The UNCTAD secretariat would also function as the secretariat of the Machinery and they shall consult with and render assistance in countries (especially developing countries) meeting the requirements of the Code.[800]

5.1.1.3.9 Chapter 9 Applicable law and settlement of disputes

This chapter has not yet been formally drafted.[801] Broad consensus was formed

[796] Draft ToT Code, Chapter 8.1 (c)

[797] Draft ToT Code, Chapter 8.2.1 (a)

[798] Draft ToT Code, Chapter 8.2.1 (b) – (h)

[799] Draft ToT Code, Chapter 8.2.2

[800] Draft ToT Code, Chapter 8.4

[801] *See supra* note 730 146

on conciliation and arbitration, but differences could not be reconciled on the choice of law.[802]

5.1.2 TRIPS

5.1.2.1 Legislative history

IP protection first became an agenda of General Agreement on Tariffs and Trade (GATT) negotiations in the 1970s, in the Tokyo Round.[803] Trademark infringing products were the issue then, however no agreement was reached during this Round.[804]

In the 1980s, the U.S. Government shifted its policy towards enhanced IP protection for the recovery of their industrial competitiveness. [805] Multilateral negotiations became a tool for strengthening IP protection rules internationally.[806]

At that time, the member states of the Paris Convention was meeting to discuss revisions of the Convention for a similar purpose.[807] However, the states could not reach an agreement due to the difference in positions between developed and developing countries.[808] The U.S. believed, and the EC and Japan agreed, that this forum was failing to meet its needs of protecting their IP, especially because it was not possible under WIPO based conventions such as the Paris Convention to impose legitimate sanctions on parties violating the agreement.[809] Reflecting these requests, it was decided at the GATT Punta Del Este Ministerial Conference that the IP issues would be a part of the agenda at the

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[802] *See supra* note 730 146

[803] Akira Ojima, CHIKUJŌ KAISETSU TRIPS KYŌTEI WTO CHITEKI ZAISANKEN KYŌTEI NO KONMENTĀRU (DETAILED ANALYSIS OF THE TRIPS) (Nihon Kikai Yushutsu Kumiai 1999) 1

[804] *See supra* note 803 1

[805] *See supra* note 803 1

[806] *See supra* note 803 1

[807] Prabu Natarajan, THE GATT TRIPS AGREEMENT NEO-CLASSICISM OR NEO-COLONIALISM: AN APPRAISAL OF THE POLITICAL ECONOMY OF THE INTERNATIONAL PATENT SYSTEM BEFORE AND AFTER THE TRIPS AGREEMENT (National Library of Canada = Bibliothèque nationale du Canada 1995) 125

[808] *See supra* note 807

[809] *See supra* note 803 1

Uruguay Round.[810] In 1986, upon the commencement of the Round, the Trade Related Aspects of Intellectual Property Rights (TRIPS) Group was formed and negotiations were started.[811]

From the beginning of the negotiations, stark differences between developing countries and developed countries were observed. Developed countries aimed at establishing a general rule on substantial IP protection and judicial procedures through TRIPS.[812] However, developing countries were opposed to such rules in fear that they would be put at a disadvantage, considering that developed countries own much of the technology existing on earth.[813] They were comfortable with the existing international order under the Paris Convention, which allowed them a space to design an IP system that suited their needs for looser IP protection within their jurisdiction,[814] and suggested that this issue should not be an agenda of GATT.[815] For two years, they could not agree on whether IP rules should be a part of GATT and continued with this debate on "Gattability."[816] The issue of Gattability was tentatively settled by postponing the decision on the legal status of the TRIPS Agreement.[817]

The first tentative text was drafted in November 1990 in preparation for the planned venue of final agreement, the Brussels Ministerial Conference.[818] It reflected the Gattability argument and had one version with the standard of substantial rights protection and procedures of assertion of rights (suggested by developed countries), and another with only regulations on trade of illegal goods (suggested by developing countries).[819] Other points of disagreements were marked with brackets.[820]

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[810] *See supra* note 803 1
[811] *See supra* note 803 2
[812] *See supra* note 803 3
[813] *See supra* note 803 3
[814] *See supra* note 807 134
[815] *See supra* note 803 3
[816] *See supra* note 803 3
[817] *See supra* note 803 4
[818] *See supra* note 803 4
[819] *See supra* note 803 4
[820] *See supra* note 803 4

The Uruguay Round could not be brought to an end in Brussels and was continued on until the next year.[821] Negotiations were continued during the year, and on December 20th 1991, the "Dunkel Draft", named after the Director General Arthur Dunkel of the GATT, was proposed.[822] The Dunkel text was drafted on the agreement that the Director General, under his responsibility, makes a decision on points that could not be agreed upon by the parties.[823] Changes could be made only when all the negotiating states agree to it.[824] The Dunkel Text took a single undertaking approach, meaning that the negotiating states could accept or reject it only as a whole. No reservations were allowed.[825] At the end, developing countries accepted the TRIPS Agreement, as they had seen the WTO as a whole to be beneficial for them.[826]

After the Dunkel Text, no substantial changes were made to the draft until the Marrakesh Agreement establishing the WTO came into effect on January 1st, 1995.[827]

5.1.2.2 Content of licensing related articles

Apart from Article 7,[828] which discusses transfer and dissemination of technology as one of the purposes of the protection and the enforcement of IP rights, TRIPS has only one article on voluntary licensing, namely Article 40. Unlike the aforementioned draft ToT Code, it does not directly prohibit any licensing practices. It merely declares the negative effects of anticompetitive licensing practices and provides space for discretion of member states to regulate such practices.

The first paragraph declares that certain anticompetitive licensing practices may

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[821] *See supra* note 803 4-5

[822] *See supra* note 803 5

[823] *See supra* note 803 5

[824] *See supra* note 803 5

[825] *See supra* note 803 5-6

[826] *See supra* note 803 290

[827] *See supra* note 803 7

[828] TRIPS Agreement art.7 The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

have negative effects on trade and may obstruct the transfer and dissemination of technology.[829]

The second paragraph allows the discretion of individual member states to specify "in their legislation licensing practices or conditions that may in particular cases constitute an abuse of intellectual property rights having an adverse effect on competition in the relevant market."[830] It also allows member states to take measures against such abuse of IP rights such as "exclusive grant-back conditions, conditions preventing challenges to validity and coercive package licensing".[831]

Earlier drafts of Paragraph 2 included a longer list of restrictive practices, and stated examples of adequate countermeasures that could be taken by member states such as compulsory licensing or invalidating a clause.[832] It also stated that member states could specify licensing acts and clauses that constitute an abuse of rights or negatively influences competition in the relevant market. All these points were unacceptable for developed countries and the developing countries made compromises on this point in the end. [833]

The third paragraph obligates member states to enter into consultations with other member states, where the latter have reasons to believe that a national or a domiciliary of the former is conducting practices in violation with the latter's law with regard to anticompetitive practices.[834] The addressed member shall afford adequate opportunity for consultation and cooperate through supply of publicly available information or other information available to the member state in accordance with domestic law, given that necessary confidentiality measures are taken.[835] Irrespective of such consultations, both parties can take measures under their own law.[836]

Developed countries initially opposed the idea of setting an obligation to consult

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[829] TRIPS Agreement art.40 Para 1

[830] TRIPS Agreement art.40 Para 2

[831] TRIPS Agreement art.40 Para 2

[832] *See supra* note 803 195-196

[833] *See supra* note 803 195-196

[834] TRIPS Agreement art.40 Para 3

[835] TRIPS Agreement art.40 Para 3

[836] TRIPS Agreement art.40 Para 3

with other countries when their own companies are allegedly conducting anticompetitive practices abroad, as they found it unnecessary.[837] The obligation to provide information to other countries was a major point of disagreement.[838] Developed countries opposed this idea in fear that confidential information not available to the member states but available to the party would be required, especially because the confidentiality protection was "subject to and dependent upon the assurance" "given by the requesting PARTY".[839] In the end, it was made clear in the text that only publicly available information and information available to the state was subject to the disclosure, and the confidentiality protection was required to be "mutually satisfactory".[840]

The fourth paragraph provides for the opportunity for a member state whose nationals or domiciliaries are subject to proceedings for alleged anticompetitive practices in another member state to have consultation.[841] This paragraph was added to alleviate the concern of developed countries that developing countries would apply antitrust law to regulate foreign enterprises.[842]

5.1.3 A reflection on the international efforts to create a binding treaty covering technology transfer

It seems on the surface that the developing countries' attempt to create a regulation on technology transfer ended unsuccessfully, seeing that the TRIPS Agreement does not include any of the regulations discussed during the UNCTAD sessions and the discussions during the drafting process of the TRIPS Agreement.

However, when studied in detail, the regulations are largely realized through national legislations and are enforced by national governments through collaborations with tax authorities, as mentioned in the following sections. This was made possible through the discretion the TRIPS agreement allowed member states. This approach allows

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[837] *See supra* note 803 196

[838] *See supra* note 803 196-197

[839] *See supra* note 803 196-197

[840] *See supra* note 803 196-197

[841] TRIPS Agreement art.40 Para 3

[842] *See supra* note 803 196-198

more flexibility depending on the development stage of a specific country and could be even more favorable for developing countries as a tool to enhance technology transfer while protecting local entrepreneurs. Developing countries have been attempting to utilize these so-called TRIPS flexibilities to their favor. In the following sections, regulations in the four target countries are discussed.

5.1.4 Regulations on voluntary licensing in Japan

5.1.4.1 Relevant laws and authorities

Currently, Japan has competition law based licensing regulations, which are provided by Guidelines for the Use of Intellectual Property under the Antimonopoly Act (2007, revised 2016, hereinafter "IP Guidelines") and the Guidelines on Standardization and Patent Pool Arrangements (2005, revised 2007, hereinafter "Patent Pool Guidelines") issued by the Japan Fair Trade Commission. They both provide the detailed rules concerning the application of the Antimonopoly Act to licensing of IP.[843]

The authority in charge of enforcing the antimonopoly law is the Japan Fair Trade Commission (hereinafter "JFTC"). When a violation of the Antimonopoly Act occurs, the JFTC issues a cease and desist order.[844] An entity which experienced damages due to a violation can claim for damages under strict liability principles.[845]

The Antimonopoly Act prohibits private monopolization, [846] unreasonable restraint of trade (cartels)[847] and unfair business practices[848] as well as other acts not directly related to licensing. For private monopolization and unreasonable restraint of

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[843] Shitekidokusen no Kinshi oyobi Kōsei Torihiki no Kakuho ni kansuru Hōritsu [Antimonopoly Act] (2015) (hereinafter "Antimonopoly Act")

[844] Japan Fair Trade Commission, *Dokusen Kinshi hō no Gaiyō: Kōsei Torihiki Īnkai (独占禁止法の概要：公正取引委員会)*, http://www.jftc.go.jp/dk/dkgaiyo/gaiyo.html. (last visited Aug. 29, 2016).

[845] *See supra* note 844

[846] Antimonopoly Act art.3

[847] Antimonopoly Act art.3

[848] Antimonopoly Act art.19

trade and some unfair business practices, violators must pay surcharges.[849] For severe cases of private monopolization and unreasonable restraint of trade, criminal penalties may be imposed on the violating entity and related individuals.[850]

5.1.4.2 Foreign Exchange Control Law and Foreign Investment Law

Japan had a rather strict licensing regulation after the Second World War, up until the end of the 1970s. This was for the purpose of increasing the influx of technology from abroad while spending limited money in the most effective manner.[851]

The history of licensing regulations in post-war Japan starts with the Antimonopoly Act of 1947, which was enacted under the direction of the General Headquarters (GHQ).[852] Its Section 6 prohibited entering into "an international agreement or an international contract which contains such matters as constitute unreasonable restraint of trade or unfair business practices" and required that reports for all international agreements, including technology transfer and licensing, be filed at the Fair Trade Commission.[853]

Regulations specifically for technology transfer came out later, in 1949. Foreign Exchange and Foreign Trade Control Law (Foreign Exchange Control Law) was the first of such law.[854] In the following year, the Law Concerning Foreign Investment (Foreign Investment Law) was introduced. These laws required the pre-approval of the licensing

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[849] *See supra* note 844

[850] Japan Fair Trade Commission, *Dokusen Kinshi hō Ihan Jiken no Shori Tetsuzuki Zu: Kōsei Torihiki Īnkai (独占禁止法違反事件の処理手続図：公正取引委員会)*, http://www.jftc.go.jp/dk/seido/shorizu.html. (last visited Aug. 29, 2016).

[851] MICHIKO ARIGA, *Restrictive Business Practices and International Controls on Transfer of Technology*, *in* CONTROLLING INTERNATIONAL TECHNOLOGY TRANSFER: ISSUES, PERSPECTIVES AND POLICY IMPLICATIONS (Tagi Sagafi-nejad et al. eds., Pergamon Press 1981) 194

[852] *See supra* note 852 193-194

[853] *See supra* note 852 194

[854] TERUTOMO OZAWA, *Technology Transfer and Control Systems: The Japanese Experience*, *in* CONTROLLING INTERNATIONAL TECHNOLOGY TRANSFER: ISSUES, PERSPECTIVES AND POLICY IMPLICATIONS (Tagi Sagafi-nejad et al. eds., Pergamon Press 1981) 379-380

agreement by relevant authorities.[855] Especially in the 1960s, administrative guidance was given to Japanese firms to avoid "undesirable" competition for similar technologies.[856] In other cases, they were informally instructed by the Ministry of International Trade and Industry (MITI, now Ministry of Economy, Trade and Industry, METI) to negotiate with a specific foreign company.[857] This was aimed at lowering the royalty rates and to limit the payments to foreign countries, as well as strengthening the bargaining power of the licensor.[858] The Ministry of International Trade and Industry (MITI, now Ministry of Economy, Trade and Industry, METI), one of the relevant authorities of technology licensing approval, would in some cases delay the approval of licenses or to condition the approval upon lowering the royalty rates.[859]

The guidance also interfered with other aspects of the licensing agreement such as the scope of the technology, privileged access for Japanese Partners to foreign markets, sub-licensing, use of technology after the expiration of the contract, term of the contract and automatic renewal.[860] The interference was usually in the favor of the Japanese licensee.[861]

The government regulations in Japan at that time were "purposely left undefined and unspecific to give greater discretionary power to the administrative bureaucracy"[862], and the internal ministerial rules and regulations ("naiki") undisclosed to outsiders governed the procedures for the case-by-case screening.[863]

These strict and opaque approval system made the foreign companies

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[855] *See supra* note 854

[856] *See supra* note 854 381

[857] *See supra* note 854 381

[858] *See supra* note 854 381

[859] *See supra* note 854 381

[860] *See supra* note 854 383 (quoting a statement by the Committee for Invisible Transactions of the OECD in 1968)

[861] *See supra* note 854 383 (quoting a statement by the Committee for Invisible Transactions of the OECD in 1968)

[862] *See supra* note 854 382

[863] *See supra* note 854 383

"frustrated"[864] but they nevertheless continued on with their technology transfer due to the expectation of increased revenue from a growing market.[865]

Liberalization of these regulations started gradually, already starting in the late 1950s. The industry rapidly strengthened their technical capacity and thus the need for protection diminished.[866] The external pressure for liberalization has also increased as Japan rapidly developed and became a member of international economic organizations.[867]

The first small step was taken in 1959, when "less significant" technologies were allowed as a subject matter of technology transfer. Prior to this, there were restrictions on technology imports to technologies which would positively contribute to the balance of Japan's payments and the development of important industries in order to use what little resources Japan had to strengthen the industry devastated by the war.[868]

The approval of contracts continued to be loosened in the 1960s, and finally in 1968, automatic approval of technology contracts for payments less than $50,000 realized, apart from technologies in seven restricted fields, namely aircraft, weapons, explosives, nuclear energy, space exploration, computers, and petrochemicals.[869] Japan experienced a sharp increase in technology transfer contracts this year, and this increase continued until 1974, which was the end of Japan's period of rapid economic growth.[870] In 1974, automatic approval was extended to all areas of technology for contracts below the aforementioned threshold.[871]

In the 1980s, the control over technology transfer contracts has been further liberalized. The Foreign Investment Law was abolished in 1980 and the control of the Foreign Exchange Control Law was liberalized in the 1980s. Currently, Japan has no

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[864] *See supra* note 854 382
[865] *See supra* note 854 382
[866] *See supra* note 854 387
[867] *See supra* note 854 387
[868] *See supra* note 851 194-195
[869] *See supra* note 854 388
[870] *See supra* note 854 390-391
[871] *See supra* note 854 388

technology transfer regulations apart from regulations based on competition laws.

5.1.4.3 JFTC Guidelines

Guidelines for the Use of Intellectual Property under the Antimonopoly Act (2007, revised 2016, "IP Guidelines")[872] and Guidelines on Standardization and Patent Pool Arrangements (2005, revised 2007, "Patent Pool Guidelines") [873]are the current licensing regulation in Japan based on the antimonopoly act. The Patent Pool Guidelines are a guideline specific to standardized technology and standard-based patent pools. For all aspects not covered by the Patent Pool Guidelines, the IP guidelines apply.[874]

They apply to IP concerning technology, especially licensing agreements (or the denial of license) and specifies "the principles by which the Antimonopoly Act is applied to restrictions pertaining to the use of technology"[875], and to restrictive conducts, namely "(i) any conduct of inhibiting any other party from using the technology, (ii) any conduct of licensing other parties to use the technology within a limited scope and (iii) any conduct of imposing restrictions on activities conducted by other parties licensed to use the technology".[876]

In Japan, as a general principle, the Antimonopoly Act "shall not apply to such

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[872] CHITEKI ZAISAN NO RIYŌ NI KANSURU DOKUSEN KINSHI HŌ JŌ NO SHISHIN [CHIZAI GAIDORAIN] [IP GUIDELINES], Japan Fair Trade Commission (2016)

[873] HYŌJYUNKA NI TOMONAU PATENTO PŪRU NO KEISEI TŌ NI KANSURU DOKUSEN KINSHI HŌ JYOU NO KANGAEKATA [PATENTO PŪRU GAIDORAIN] [Patent Pool Guidelines], Japan Fair Trade Commission (2007)

[874] Patent Pool Guidelines Part 1, "The Fair Trade Commission ("FTC") published guidelines for patent and know-how licensing agreements under the Anti-Monopoly Act ("Patent and Know-How Licensing Guidelines") in 1999. The effect on competition of pooling and licensing patents is basically examined in accordance with the principles explained in these Guidelines. However, in view of growing concerns about the use patent pools to facilitate standardization of specifications, the FTC clarified principles under the Anti-Monopoly Act ("AMA") to examine the activity of standardizing specifications and pool patents for the specifications to license them."

[875] IP Guidelines Part 1 (2)

[876] IP Guidelines Part 1 (2)(ii)

acts recognizable as the exercise of rights under…., the Patent Act".[877] The act shall be substantially recognizable as the exercise of right, which means that it is not found to be deviating from or running counter to "the intent and objectives of the intellectual property systems, which are, namely, to motivate entrepreneurs to actualize their creative efforts and make use of technology, in view of the intent and manner of the act and its degree of impact on competition."[878] If not, the Antimonopoly Act applies to such acts.

The IP Guidelines lists some activities that *may* be prohibited by the Act, but whether or not they actually violate the law depends on a case-by-case analysis.

Refusal to grant a license constitutes a violation of the antimonopoly act in some

[877] Antimonopoly Act art.21

[878] IP Guidelines Part 2 (1)

cases.[879] The limitation on the scope of the license within the authorized use[880], such as

[879] The Guidelines lists the following act as private monopolization: refusal to grant a license to a specific entity when a patent pool is formed (Part 3 (1)(i)(a))
acquiring rights to influential technologies used by numerous entrepreneurs and blocking others from using it (Part 3 (1)(i)(b))
acquiring rights to technologies used by a competitor and blocking its use of technology without using the technology itself (Part 3 (1)(i)(c))
refusal of grant of license after pushing for the technology to be accepted in a standard through deceptive means (Part 3 (1)(i)(d))
refusal to license (or seek injunction based on) a FRAND-encumbered SEP to a willing licensee after retraction of the FRAND declaration (Part 3 (1)(i)(e))
Concerning the definition of a willing licensee, the Guidelines Part 2 (1) (e) provide that "Whether a party is a "willing licensee (who willing to take a license on FRAND terms)" or not should be judged based on the situation of each case in light of the behavior of the both sides in licensing negotiations etc. (For example, the presence or absence of the presentation of the infringement designating the patent and specifying the way in which it has been infringed, the presence or absence of the offer for a license on the conditions specifying its reasonable base, the correspondence attitude to the offers such as prompt and reasonable counter offers and whether or not the parties undertake licensing negotiations in good faith in light of the normal business practices.) Even if a party which intends to be licensed challenges dispute validity, essentiality or possible infringement of the Standard Essential Patent, the fact itself should not be considered as grounds to deny that the party is a "willing licensee" as long as the party undertakes licensing negotiations in good faith in light of the normal business practices."
Some of the aforementioned acts are considered as an "unfair trade practice" if "such conduct tends to impede fair competition by degrading the competitive function of the entrepreneur in the product market." *See* Part 4 (2)(iii). The acts restricted under Part 4 with regard to refusal to grant is to inhibit the use of technology through:
acquiring rights to a technology used by a competitor with the recognition of the use and of the difficulty to replace the technology and then to refuse to license with the intention to block the competitor from its use (Part4 (2)(i)),
refusing to grant a license after urging others to use the technology through unjustifiable means and rendering the use of alternative technologies difficult (Part4 (2)(ii)),
discriminatorily refusing to license to a particular entrepreneur without reasonable grounds, when a number of licensees conducts business activities in the product market

limiting the quantity of products or the number of times the technology is used in manufacturing, or limiting export quantities and price, or to oblige to export via an entrepreneur designated by the licensor, or limiting the price export price[881] can be also considered as a violation of the antimonopoly act.

Restriction of sales such as the following is considered to be an unfair trade practice. Establishing a maximum of quantity of products or the number of times the technology can be used[882], restrictions on the sales counterparts of the products[883], imposing the use of a trademark, when the licensee is required to use only the specific trademark and the trademark is a "material means of competition",[884] restrictions on selling and resale price[885] or restrictions on the manufacture and sale of competing products or on transactions with competitors[886] are on this list.

Restrictions on the procurement such as tying in the purchase of other technologies or products without reasonable grounds[887], or posing limitations on the purchase of raw materials and components, when not necessary "to ensure the functions and effect of the technology, to maintain safety and to prevent the disclosure of

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based on the technology (Part 4(2)(iii)), and
refusal to license (or seek injunction based on) a FRAND-encumbered SEP to a willing licensee after retraction of the FRAND declaration (Part4 (2)(iv)).

[880] *See* Part 3(1)(ii). For unfair trade practices, *see* Part 4(3).

[881] This may be recognized as constituting an unfair business practice. *See* Part 4(3)(b)(iii)(e)

[882] "[S]uch conduct may constitute an unfair trade practice if the rights are recognized as having been exhausted in Japan or in the case where know- how is licensed, and there is a tendency to impede fair competition." IP Guidelines Part 4(4)(ii)(a)

[883] IP Guidelines Part 4(4) (ii)(b)

[884] IP Guidelines Part 4(4)(ii)(c)

[885] IP Guidelines Part 4(4)(iii) Acts falling under this article are in principle recognized as constituting an unfair trade practice.

[886] IP Guidelines Part 4(4)(iv)

[887] *See* IP Guidelines Part 4(5)(iv). When the patent is a standard essential patent, Part 3 (1)(iii)(c) also applies.

confidential information"[888] is also prohibited as an unfair trade practice.

Imposing other unfair conditions may also be a violation of antimonopoly law. These acts include restrictions on the development of alternate technologies[889], obligations not to contest to the validity of the IP, when such obligation "is found to tend to impede fair competition by continuing rights that should be invalidated and by restricting the use of the technology associated with the said rights"[890], imposing unilaterally disadvantageous terms on the licensee, when other Antimonopoly Act-infringing restrictions take place and the imposition is used to ensure the effectiveness of such restrictions[891], imposing the payment of royalties not related to the use[892], restrictions after the extinction of rights or obligations to pay royalties, unless the payment is "within the permissible extent of an installment or the deferred payment of royalties"[893], compulsory addition of functions, when such compulsory addition deprives other entrepreneurs of opportunities to offer applied technologies[894], non-assertion of rights[895], exclusive grant-backs of subsequent inventions (in principle recognized as constituting an unfair business practice), or non-exclusive grant-backs with limitations on the parties who could use the technology[896], imposing reports of obtained knowledge and experience, when it means, factually, that the licensee shall grant a license for their know-how to the licensees.[897]

In terms of creative licensing schemes, some arrangements may constitute an unreasonable restraint of trade. The formation of patent pools between patent holders of *substitute* technologies in a particular technology market and jointly setting licensing

[888] IP Guidelines Part 4(4)(i)
[889] IP Guidelines Part 3 (1)(iii)(b)
[890] IP Guidelines Part 4 (4)(vii)
[891] IP Guidelines Part 4 (5)(i)
[892] IP Guidelines Part 4 (5)(ii)
[893] IP Guidelines Part 4 (5)(iii)
[894] IP Guidelines Part 4 (5)(v)
[895] IP Guidelines Part 4 (5)(vi)
[896] IP Guidelines Part 4 (5)(viii) and (ix)
[897] IP Guidelines Part 4 (5)(x)

conditions for their mutually substituting technologies [898] is considered to be an unreasonable restraint on trade. Collusion based on patent pools that causes a substantial restraint of competition in the product market, such as inhibiting the improvement of the technology both by the licensors and licensees[899], jointly determining the price, quantity or customers of their products by competitors in the product market through the formation of patent pools[900], refusing to license without reasonable grounds, where a patent pool, which is the sole licensor for the implementers, is formed by competitors in a product market[901].

For standard essential patent pools, the Patent Pool Guidelines apply as well. The Guidelines recognizes that "[p]ooling patents for specifications is an effective means of granting the necessary licenses efficiently and adjusting the licensing fees so that they do not become excessive when summed. In this way, pooling patents encourages competition by facilitating the production and marketing of new products."[902] However, they also acknowledge the possibility of limiting competition through "mutually restricting the use of the patents" and "restricting licensees' business in downstream markets."[903]

When the market share of the pool is less than 20%, or if four other competing specifications are available, the patent pool would not pose problems under the Antimonopoly Act, unless obviously problematic agreements such as "fixing the product price or quota" are made.[904] If these conditions are not met, then whether the agreement violates the Antimonopoly Act is determined on a case-by-case basis, taking into consideration the market conditions both in the product market and technology market.[905]

When only standard essential patents are included in the pool, there is no risk of violating the Act as long as the assessment of the essentiality is done in a fair manner.[906]

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[898] IP Guidelines Part 3 (2)(i)(b)

[899] IP Guidelines Part 3 (2)(i)(b)

[900] IP Guidelines Part 3 (2)(i)(c)

[901] IP Guidelines Part 3 (2)(i)(d)

[902] Patent Pool Guidelines Part 3 1 (1)

[903] Patent Pool Guidelines Part 3 1 (1)

[904] Patent Pool Guidelines Part 3 1 (2)

[905] Patent Pool Guidelines Part 3 1 (3)

[906] Patent Pool Guidelines Part 3 1. (1)2.a

When non-SEPs are included in the pool, the effects on competition are evaluated on a case-by-case basis taking into account whether the pooling is reasonably necessary or has a pro-competitive effect, and whether patent owners can license the technology without going through the pool and the prospective licensees can choose to license only the patents necessary for them.[907]

In order to prevent anticompetitive practices, access to the confidential business information collected for the purpose of managing the pool shall be restricted.[908] The licenses shall be granted on a non-discriminatory basis absent a reasonable necessity to differentiate the licensing terms.[909] Limiting further development of the licensed technologies or competing technologies will "will run the risk of restricting competition in the product and technology market" and thus may be considered as a violation of the Act.[910] Mandatory grant-backs for patents on improvements or developments of the technology is prohibited as it "will" restrict competition unless the improved technology would also be a standard essential patent of the pool.[911] Non-challenge clauses[912] or non-assertion[913] clauses may be regarded as a violation of the Act.

In the case of multiple licenses for a specific technology, restriction of sales in the form of issuing instructions on "selling price, sales quantity, customers and other factors concerning the products supplied with the use of the technology" in multiple licensing schemes[914], restricting the "scope of the use of technology, and selling price, sales quantity, customers or the like with respect to the product manufactured using the technology" under the mutual understanding that all licensees and the licensor are under

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[907] Patent Pool Guidelines Part 3 1. (1)2.b

[908] Patent Pool Guidelines Part 3 2(3)

[909] Patent Pool Guidelines Part 3 3(1)

[910] Patent Pool Guidelines Part 3 3(2)

[911] Patent Pool Guidelines Part 3 3(3)

[912] This refers to prohibiting the challenge of the validity of the licensor's patents. *See* Patent Pool Guidelines Part 3 3(4)

[913] This refers to prohibiting the assertion of the licensee's patents against the licensor. *See* Patent Pool Guidelines Part 3 3(5)

[914] IP Guidelines Part 3 (1)(iii)(a)

the same restriction[915] or restricting the research and development or use of improved technology or substitute technologies under a multiple license scheme[916] that causes substantial restraint of competition in the product market is considered to be an unreasonable restraint of trade.

Cross-licensing arrangements that causes substantial restraint of competition in the product market[917] are considered to unreasonably restrain trade. Jointly setting forth the scope of the license for each participating entity in cross-licensing agreements[918] is also an act listed as an act that may violate the antimonopoly law.

5.1.5 Regulations on voluntary licensing in the EU

5.1.5.1 Relevant laws and authorities

The European Commission and the national authority of the member states are the competition authorities in the EU. Both the European Commission and the national authorities are empowered to apply the EU competition rules.[919] The EU competition rules apply as long as it "may affect trade between Member States".[920] The Commission and the national authorities both have full power to apply the same EU antitrust rules.[921] When the national authorities apply national competition law to "agreements, decisions by associations of undertakings or concerted practices within the meaning of Article 81(1)[922] of the Treaty" or to "any abuse prohibited by Article 82 of the Treaty", they shall apply the articles of the treaty as well.[923]

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[915] IP Guidelines Part 3 (2)(ii)

[916] IP Guidelines Part 3 (2)(ii)

[917] IP Guidelines Part 3 (2)(iii)(b)

[918] IP Guidelines Part 3 (2)(iii)(c)

[919] European Commission, *Antitrust: Overview – competition - European commission*, http://ec.europa.eu/competition/antitrust/overview_en.html. (last visited Sep. 6, 2016).

[920] Consolidated Version of the Treaty on the Functioning of the European Union art. 101,102, 2008 O.J. C 115 47 [hereinafter TFEU]

[921] *See* Sofia Alves et al., *Principles for the Independence of Competition Authorities*, COMPETITION LAW INTERNATIONAL Vol.11 No.1 (2015). 13

[922] TEFU art. 101

[923] Council Regulation (EC) No 1/2003 O.J. L1/1 of 16 December 2002 on the

When a violation is found, the national authorities may issue a request to cease the infringement, order interim measures, accept commitments, "imposing fines, periodic penalty payments or any other penalty" provided for in the respective national law.[924] The Commission on the other hand may require the infringement is ceased[925], impose a behavioral or structural remedy[926], order interim measures[927], and make the party's commitment binding[928].

Relevant regulations at the EU level are the Treaty on the Functioning of the European Union (TFEU) Articles 101 and 102, the Technology Transfer Block Exemption Regulation (TTBER) (2014) and the Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements (Technology Transfer Guidelines, 2014) [929] issued by the Commission.[930]

These all regulate technology transfer from a competition law aspect rather than contract law or patent law, similarly to the Japanese regulatory framework. The major difference is that the EU regulations have hardcore restrictions, and acts that fall under the restrictions are automatically rendered void, whereas the Japanese regulations consider the applicability of antimonopoly rules to licensing agreement on a case-by-case basis.

The TFEU Articles 101 and 102 are general competition rules. It broadly prohibits "all agreements between undertakings, decisions by associations of undertakings and

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implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty (hereinafter "Council Regulation (EC) 1/2003") art.3

[924] Council Regulation (EC) 1/2003 art.5

[925] Council Regulation (EC) 1/2003 art.7

[926] Council Regulation (EC) 1/2003 art.7

[927] Council Regulation (EC) 1/2003 art.8

[928] Council Regulation (EC) 1/2003 art.9

[929] Communication from the Commission, Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements, 2014 O.J. C 089

[930] Slaughter and May, THE EU COMPETITION RULES ON INTELLECTUAL PROPERTY LICENSING (Slaughter and May 2010)

concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market"[931] and "[a]ny abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States." [932]

The Technology Transfer Block Exemption Regulation provides an exemption from Article 101(1) for certain technology-related agreements, accompanied by the Guideline.

5.1.5.2 Treaty on the Functioning of the European Union (TFEU) Articles 101 and 102

The TFEU Article 101 prohibits agreements between independent actors in the market which leads to the restriction of competition. An agreement or decision which violates the regulation of Article 101 are rendered automatically void.[933]

Article 101 provides a list[934] of prohibited agreements, namely the following:

a) directly or indirectly fix purchase or selling prices or any other trading conditions

b) limit or control production, markets, technical development, or investment;

c) share markets or sources of supply;

d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;

e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

Some common clauses in licensing agreements may violate the aforementioned prohibitions. However, if the agreement "contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing

[931] TFEU art.101

[932] TFEU art.102

[933] TFEU art.101 2.

[934] TFEU art.101 1.

consumers a fair share of the resulting benefit" and does not impose non-dispensable restrictions nor have the possibility for eliminating competition "in respect of a substantial part of the products", Article 101 does not apply. [935]

Article 102 applies to undertakings who abuse a dominant position in the market. Such abuse may consist of the following conducts[936]:

a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions
b) limiting production, markets or technical development to the prejudice of consumers
c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage
d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

Licensing agreements involving parties with dominant position that abuses a dominant position will be prohibited under Article 102 without exception.

5.1.5.3 Technology Transfer Block Exemption Regulation (TTBER)

The Technology Transfer Block Exemption Regulation (hereinafter "TTBER")[937], accompanied by the Technology Transfer Guidelines[938], outline the block exemption of technology transfer agreements from the application of Article 101(1)[939], based on Article

[935] TEFU Art.101 3.

[936] TEFU Art.102

[937] Commission Regulation (EU) No 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements, 2014, O.J. L 93 (hereinafter "TTBER")

[938] Communication from the Commission — Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements, 2014, O.J. C 89 (hereinafter "Technology Transfer Guidelines")

[939] Technology Transfer Guidelines 3.1 Para 40

101(3)[940]. Note that it does not provide a block exemption from Article 102 prohibiting abuse of dominant position. Agreements that fulfill the required conditions of the TTBER are legally valid and enforceable, unless the block exemption is withdrawn by the Commission.

The position of the TTBER is that technology transfer agreements "will usually improve economic efficiency and be pro-competitive as they can reduce duplication of research and development, strengthen the incentive for the initial research and development, spur incremental innovation, facilitate diffusion and generate product market competition."[941] The anticompetitiveness of the agreement depends on the market power of the parties concerned and on the extent the parties face competition with other entities owning substitute technologies (inter-technology competition [942]) or manufacturing substitute products (intra-technology competition[943]).[944]

The TTBER applies to technology transfer agreements[945], of which the subject matter is know-how, patents, utility models, design rights, topographies of semiconductor products, supplementary protection certificates, plant breeder's certificates and software copyrights.

The conditions for the block exemption are that the subject matter rights are valid, and for know-how, are kept secret.[946] The combined relevant market share of all parties has to be below 20% for competing undertakings, and for non-competing undertakings,

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[940] TTBER Preamble (1)

[941] TTBER Preamble (4)

[942] Technology Transfer Guidelines 2.2 Para 11

[943] Technology Transfer Guidelines 2.2 Para 11

[944] TTBER Preamble (5)

[945] Technology transfer agreement means either (i) a technology rights licensing agreement entered into between two undertakings for the purpose of the production of contract products by the licensee and/or its sub-contractor(s), or (ii) an assignment of technology rights between two under- takings for the purpose of the production of contract products where part of the risk associated with the exploitation of the technology remains with the assignor;

[946] TTBER art.2.2

the relevant market share of each party shall be below 30%.[947]

When the contracting parties are competing entities, the exemption from the TFEU Article 101 is not granted if the agreement has the following as their object (hardcore restrictions):

a) the restriction on price of the products of one party[948]
b) the limitation of output[949]
c) allocation of markets or customers[950]
d) limitations to the ability of the licensee to exploit its own technology or limiting the ability of any party to conduct research and development[951]

When the contracting parties are non-competing entities, the exemption from the

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[947] TTBER art.3

[948] TTBER art.4.1(a)

[949] TTBER art.4.1(b) Excluding "limitations on the output of contract products imposed on the licensee in a non- reciprocal agreement or imposed on only one of the licensees in a reciprocal agreement".

[950] TTBER art.4.1 (c) states that exceptions are granted when
"(i) the obligation on the licensor and/or the licensee, in a non-reciprocal agreement, not to produce with the licensed technology rights within the exclusive territory reserved for the other party and/or not to sell actively and/or passively into the exclusive territory or to the exclusive customer group reserved for the other party,
(ii) the restriction, in a non-reciprocal agreement, of active sales by the licensee into the exclusive territory or to the exclusive customer group allocated by the licensor to another licensee provided the latter was not a competing undertaking of the licensor at the time of the conclusion of its own licence,
(iii) the obligation on the licensee to produce the contract products only for its own use provided that the licensee is not restricted in selling the contract products actively and passively as spare parts for its own products,
(iv) the obligation on the licensee, in a non-reciprocal agreement, to produce the contract products only for a particular customer, where the licence was granted in order to create an alternative source of supply for that customer".

[951] TTBER art.4 1 (d) Exceptions are provided when such "restriction is indispensable to prevent the disclosure of the licensed know-how to third parties."

TFEU Article 101 is not granted if it has the following as their object (hardcore restrictions):

a) the restriction on price of the products of one party[952]
b) the restriction of territory of sales[953]
c) the restriction of sales to end-users by a licensee operating at a retail level, who is a member of a selective distribution system[954]

The exemptions also do not apply to the following individual obligations:

a) exclusive grant-back of the licensee's improvements or new applications of the licensed technology[955]
b) non-challenge of other party's IP rights[956]

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[952] TTBER art.4.2 (a) It is nevertheless possible to impose "a maximum sale price or recommending a sale price, provided that it does not amount to a fixed or minimum sale price as a result of pressure from, or incentives offered by, any of the parties."

[953] TTBER art.4.2 (b) states that exceptions are provided when
"(i) the restriction of passive sales into an exclusive territory or to an exclusive customer group reserved for the licensor,
(ii) the obligation to produce the contract products only for its own use provided that the licensee is not restricted in selling the contract products actively and passively as spare parts for its own products,
(iii) the obligation to produce the contract products only for a particular customer, where the licence was granted in order to create an alternative source of supply for that customer,
(iv) the restriction of sales to end-users by a licensee operating at the wholesale level of trade,
(v) the restriction of sales to unauthorised distributors by the members of a selective distribution system".

[954] TTBER art.4.2 (c) It is nevertheless possible to prohibit a member of the system from operating out of an unauthorised place of establishment.

[955] TTBER art.5.1 (a)

[956] TTBER art.5.1 (b)

c) limitations to the ability of the licensee to exploit its own technology or limiting the ability of any party to conduct research and development, where the undertaking parties are non-competing entities[957]

The exemption provided by the TTBR also does not apply when the "cumulative effect of parallel networks of similar restrictive agreements" restricts access of third parties' technology to the market or the access of potential licensees to the market are restricted.[958]

5.1.6 Regulations on voluntary licensing in Ghana

5.1.6.1 Relevant laws and authorities

The current law and regulation concerning patents Ghana are the Patents Act no 657 of 2003 and Patent Regulations (as amended, 1996). The Patent Law no 305 of 1992 was revised in order to comply with the TRIPS Agreement and the 2003 law is the result of the revision. However the 1996 Patent Regulations have not yet been revised and this is causing confusions among practitioners.[959] Therefore the Regulations are currently under revision.[960]

In addition to the Patents Act, there exists regulations specific to technology transfer including not only patent licensing but other IP licensing that involves the transfer of technology, the Technology Transfer Regulations (1992). The Ghana Investment Promotion Centre Act (2013) also has a section[961] on the role of the Centre in reviewing

[957] TTBER art.5.2 Exceptions are provided when the research and development "such latter restriction is indispensable to prevent the disclosure of the licensed know-how to third parties."

[958] TTBER art.6 1

[959] U.S. Department of State, *IIP Digital*, http://photos.state.gov/libraries/ghana/481515/PDFs/PATENTS.pdf. (last visited Apr. 2, 2017) 1

[960] Interview with Mr. Samuel Anum, Consultant for the Ghana-Swiss IP Project, Ghana and Ms. Grace Isahaque, Chief State Attorney at the Registrar-General's Office, Ghana (Dec. 2015)

[961] Ghana Investment Promotion Centre Act (2013)§37

and registering technology transfer contracts.

The relevant authorities of technology licensing are the Registrar and the Ghana Investment Promotion Centre (GIPC). According to the Patent Act, all patent licensing agreements shall be recorded at the Registrar.[962] In addition to this requirement, for all technology transfer agreements (including patent licensing) shall be recorded in writing at the GIPC.

The Registrar only requires that the existence of the agreement is recorded, but the GIPC requires that it reviews the agreement and "ensure compliance with the terms and conditions of the agreement".[963] The licensing agreement comes into effect on the date of the registration following the review.[964]

5.1.6.2 Patents Act

Apart from the sections regarding non-voluntary licensing discussed below, in "Compulsory licensing", the Patents Act has a section that requires the registration of voluntary licensing agreements at the Registrar, of which the content could also be confidential.[965] A licensing agreement without registration does not have any effect against third parties.

5.1.6.3 Technology Transfer Regulations (1992)

Technology Transfer Regulations require the registration of all technology licensing contracts, both international and domestic contracts.[966] The duration of contracts shall not exceed ten years, but the agreement could be renewed whenever the parties so wish.[967]

It has a ban on fifteen restrictive business practices. First of all, concerning the subject matter of the contract, transferring technology which is freely and easily available

[962] Patents Act (2003)§29

[963] Ghana Investment Promotion Center Act art.37 (2)

[964] Ghana Investment Promotion Center Act art.37 (5)

[965] Patents Act§29

[966] Technology Transfer Regulations 1(1)

[967] Technology Transfer Regulations 8

in Ghana is impermissible under the regulation.[968] The manufacture or sales of products based on transferred technology shall not be prohibited even after the agreement has expired.[969] The use of "licensed technical know-how acquired from the use of the licensed technical know-how acquired from the use of the licensed technology" shall be allowed after the expiration of the agreement.[970] Payments for patents or other IP rights after their term has expired, terminated or invalidated is not permissible.[971]

The scope, volume of production or the sale or resale prices of the products shall not be limited by the licensor.[972] Obligating the licensee to sell all of the products produced under the transferred technology at a priced fixed by the licensor to the licensor or to any other entity designated by the licensor is impermissible, except in cases where a) the licensee produces intermediary goods of which the licensor is the sole potential buyer, or b) the requirement is exclusively for certain export markets, or c) the transferor can prove that it is able to market the products more efficiently than the transferee.[973] The production by the licensee of products or similar products not covered by the license shall not be prohibited.[974]

Concerning sales in the licensee's country, restricting volume of production or sale of the transferee's products is prohibited. Concerning exports, a complete ban on exportation, or a complete ban on exportation to specific geographical areas, of the licensee's products is prohibited. This does not apply to geographical areas for which the licensor has already granted exclusive rights. The control of export cannot take the following forms: prior permission, exclusive export through the licensor, imposing unfavorable terms, additional royalty on export sales.[975]

With regard to inputs, such as materials or parts, obliging a licensee to obtain them from a specific source is impermissible except in cases where they are not commercially

[968] Technology Transfer Regulations 4(a)
[969] Technology Transfer Regulations 4 (i)
[970] Technology Transfer Regulations 4 (i)
[971] Technology Transfer Regulations 4 (h)
[972] Technology Transfer Regulations 4 (n)
[973] Technology Transfer Regulations 4 (o)
[974] Technology Transfer Regulations 4 (l)
[975] Technology Transfer Regulations 4 (d)

available elsewhere, are specific to the technology, or required to meet the product specification of the product produced under the license. Use of complementary technologies by the licensee shall not be prohibited.[976] Unreasonably obligating the licensee employ personnel appointed by the transferor at the transferee's expenses is prohibited.

Concerning subsequent inventions, the licensor shall not prohibit further research and development conducted by the licensee,[977] and prior approval of licensors of modifications shall not be required, unless the licensed technology is used to "manufacture specific products under a license or a trademark".[978] Obligatory transfer of improvements or innovations, including patents, of the licensee to the licensor is prohibited.[979] Where the agreement to transfer is mutual or reciprocal, it may be permissible, but obligatory patent transfer is not permissible.[980]

There are mandatory obligations for the licensors. Technology transfer agreements shall include a clause that provides for the training of licensors.[981] The licensor shall provide full description of the technology and necessary documents in English,[982] and guarantee the "efficient performance" of the technology and the availability of spare parts during the time of the contract.[983] For large products involving complicated technology that was not fully explained to the licensee at the time of the negotiation or before the front-end payment, the licensor must provide a process performance warranty.[984] The licensor shall inform the licensee of the improvements on the technology made by the licensor and supply them on mutually acceptable terms.[985]

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[976] Technology Transfer Regulations 4 (l)
[977] Technology Transfer Regulations 4 (k)
[978] Technology Transfer Regulations 4 (m)
[979] Technology Transfer Regulations 4 (g)
[980] Technology Transfer Regulations 4 (g)
[981] Technology Transfer Regulations 5
[982] Technology Transfer Regulations 7(1)
[983] Technology Transfer Regulations 7(2)
[984] Technology Transfer Regulations 13
[985] Technology Transfer Regulations 7(3)

Taxes due on royalties are to be paid by the licensor.[986]

The licensee has an obligation to keep the licensed know-how confidential and to use it only for its own production.[987] The confidentiality obligation extends to after the termination of the license, but the licensee can also use the know-how after the expiration of the contract.[988] Given that the maximum term of contract is ten years and the renewal is subject to the consent of the parties, this would mean that, once know-how is licensed out, it can be used by the licensee for free, forever after the first ten years. Sub-licensing of know-how is not allowed without the consent of the licensor to the sublicensing and its terms.[989]

Maximum royalty rates are also set. For patents and other industrial property rights, the royalty rate shall be between 0 and 6% of the net sales of by the recipient of the technology.[990] Fee for technical service and assistance shall be between 0 and 5% and for know-how between 0 and 2%.[991] Both running royalties and lump-sum payments are acceptable under the Regulations. However, for contracts requiring continued service, running royalties are favored.[992] When the parties wish to set a higher rate, it is subject to the approval of the GIPC.[993]

Clauses "designed" to prevent the licensee from challenging the validity of IP rights are not permissible.[994]

The Regulation does not allow the freedom of choice of law – the law governing the agreement shall be Ghanaian law.[995] Because of the aforementioned restrictive nature of the Ghanaian regulations, this would be a problem for licensors. When a dispute occurs and the parties cannot settle amicably through discussions, the dispute could be submitted

[986] Technology Transfer Regulations 6
[987] Technology Transfer Regulations 8(1)
[988] Technology Transfer Regulations 8(1)
[989] Technology Transfer Regulations 8(2)
[990] Technology Transfer Regulations 14
[991] Technology Transfer Regulations 15 (1) (2)
[992] Technology Transfer Regulations 3
[993] Technology Transfer Regulations 18
[994] Technology Transfer Regulations 4(j)
[995] Technology Transfer Regulations 10

to arbitration.[996]

5.1.7 Regulations on voluntary licensing in China

The Chinese government have recognized technology licensing as a tool for technology transfer.[997] It has made the licensing of technology to domestic enterprises condition for market entry of foreign enterprises in some cases.[998] As a way to regulate the contents of the technology transfer, an array of regulations have been set on the course of their marketization of their economy.

5.1.7.1 Relevant laws and authorities

The main regulations on voluntary international patent and know-how licensing in China are the Contract Law of the People's Republic of China,[999] the Patent Law of the People's Republic of China [1000] and Regulations of the People's Republic of China on Administration of Import and Export of Technologies. [1001] Recently, in some cases,

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[996] Technology Transfer Regulations 11

[997] Takahiro Ueno, TECHNOLOGY TRANSFER TO CHINA TO ADDRESS CLIMATE CHANGE MITIGATION (Resources for the Future 2009) 14-15.

[998] *See* supra note 997, which lists examples of cases in which Chinese government's localization policy required technology transfer in the energy sector. For example, to bid for some parts of a powerplant construction project, it was required that the manufacturing entity was a Chinese company. This meant that foreign technology holders had to license the technology to a Chinese company in order to participate in the bidding. In other cases, the overall percentage of local content in wind turbines was required to be 70% or above. *See* also, Johannes Holthuis, TECHNOLOGY TRANSFER AGREEMENTS WITH CHINA (EU SME Centre, 2014)2

[999] Zhonghua Renmin Gongheguo Hetongfa (中华人民共和国合同法) [Contract Law of the People's Republic of China]（1999）(Hereinafter "Chinese Contract Law", or when the country is obvious from context, "Contract Law.")

[1000] Zhonghua Renmin Gongheguo Zhuanlifa (中华人民共和国专利法) [Patent Law of the People's Republic of China] (As amended 2008) Hereinafter "Chinese Patent Law", or when the country is obvious from context, "Patent Law."

[1001] Zhonghua Renmin Gongheguo Jishu Jinchukou Guanli Tiaoli (中华人民共和国技术进出口管理条例)[Regulations of the People's Republic of China on Administration of Import and Export of Technologies] (2008) Hereinafter "Regulations on Administration

especially with regard to licensing of FRAND patents, the Anti-Monopoly Law[1002] has been applied to technology transfer contracts.[1003] The Contract Law and the Patent Law apply to all domestic and international licensing agreements and the Regulations on Administration of Import and Export of Technologies applies only for international technology licensing where one party is a foreign entity and another is a Chinese entity. In interpreting the law in case of disputes, the judiciary follows the "Interpretation of the Supreme People's Court concerning Some Issues on Application of Law for the Trial of Cases on Disputes over Technology Contracts".[1004]

The Director of Foreign Trade and Economic Cooperation under the State Council administers the import and export of technology[1005] in a unified manner[1006]. The Director of Foreign Trade and Economic Cooperation of provinces, autonomous regions and municipalities under the direct control of the Central Government have the responsibility to administer the import and export of technology within their respective administrative areas.[1007]

Anyone who wishes to dispute the decision of the competent foreign trade department under the State Council concerning "approval, license, registration of, or administrative penalty" may apply for administrative reconsideration or institute legal

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of Import and Export of Technologies", or when it is obvious from context which regulations are referred to, "Regulations."

[1002] Zhonghua Renmin Gongheguo Fanlongduanfa (中华人民共和国反垄断法)[Anti-Monopoly Law of the People's Republic of China](2008) Hereinafter "Anti-Monopoly Law"

[1003] *See* 5.1.7.7.2

[1004] Zuigaorenminfayuan guanyu Shenli Jishuhetong Jiufen Anjian Shiyong Falü Ruogan Wenti de Jieshi (最高人民法院关于审理技术合同纠纷案件适用法律若干问题的解释)[Interpretation of the Supreme People's Court concerning Some Issues on Application of Law for the Trial of Cases on Disputes over Technology Contracts] (2005), hereinafter "Interpretation of the Supreme People's Court."

[1005] Regulations on Administration of Import and Export of Technologies, art.6

[1006] Regulations on Administration of Import and Export of Technologies, art.3

[1007] Regulations on Administration of Import and Export of Technologies, art.6

proceedings in the People's Court.[1008]

Three Anti-Monopoly Law enforcement authorities exist in China: the State Administration for Industry and Commerce ("SAIC," for non-price related anticompetitive behaviors), the National Development and Reform Commission ("NDRC," for price related anticompetitive behaviors), and the Ministry of Commerce ("MOFCOM," for merger control). [1009] They are all under the Anti-Monopoly Commission established by the State Council, which is in charge of policy making and coordination in enforcement. [1010]

Since licensing regulations in China are scattered in many laws and regulations, this paper first introduces the relevant laws and regulations and then looks into the relevant content thereof in a uniform manner.

5.1.7.2 Historical developments

In 1985, the Regulations of the People's Republic of China on the Administration of Technology Acquisition Contracts (hereinafter "1985 Regulations") [1011], the first

[1008] Regulations on Administration of Import and Export of Technologies, art.53

[1009] *See* Zhaofeng Zhou, *Hō to Keizai no Jyānaru, Chūgoku no Dokkinhō Tōkyoku ga Nihon Kigyō wo Tsugitsugi Tekihatsu, Sono Yobō no Tame niha(中国の独禁法当局が日本企業を次々摘発、その予防のためには)*, http://judiciary.asahi.com/fukabori/2015112100001.html (last visited Mar. 23, 2017)

[1010] Anti-Monopoly Law art.9 The State Council shall establish the Anti-monopoly Commission, which is in charge of organizing, coordinating, guiding anti-monopoly work, performs the following functions:
(1) studying and drafting related competition policies;
(2) organizing the investigation and assessment of overall competition situations in the market, and issuing assessment reports;
(3) constituting and issuing anti-monopoly guidelines;
(4) coordinating anti-monopoly administrative law enforcement; and
(5) other functions as assigned by the State Council.
See also supra note 1009.
The State Council shall stipulate composition and working rules of the Anti-monopoly Commission.

[1011] Zhonghua Renmin Gongheguo Jishu Yinjin Hetong Guanli Tiaoli (中华人民共和国

international technology transfer regulations in China, were promulgated by the State Council.[1012] In 1988, the Detailed Rules for the Implementation of the Regulations on Administration of Technology[1013] Import Contracts of the People's Republic of China (hereinafter "1988 Rules"), which provided further details of the 1985 Regulations, were promulgated. These attempted at regulating restrictive commercial practices that were becoming increasingly common as the marketization of the economy moved forward.[1014] Note that this was only regulating imports of technology, as the policy makers considered China to be at a technologically primitive stage[1015].

The main purpose of the 1985 Regulations and the 1988 Rules was to control restrictive practices by foreign technology providers, and therefore the regulations were mainly focused on protecting Chinese licensees and allowing them to make the best of the agreement. From a modern day perspective, the regulations do not allow much contractual freedom in some crucial aspects.

One of such aspects are trade secret transfer. The 1988 Rules stated that, absent special circumstances and prior approval of relevant authorities, the confidentiality obligation of the licensee of the trade secret could not exceed the term of the contract.[1016] The 1985 Regulations stated that, the term of the contract cannot exceed 10 years, unless the parties obtain special permission from relevant authorities.[1017] Two clauses combined,

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技术引进合同管理条例) [Regulations on Administration of Technology Import Contracts of the People's Republic of China](1985) Hereinafter "1985 Regulations"

[1012] LIANGZHAO CHE, GUOJI JINGJIFA GAIYAO（国际经济法概要） (Qinghua Daxue Chubanshe, 2003) 251

[1013] Zhonghua Renmin Gongheguo Jishu Yinjin Hetong Guanli Tiaoli Shishi Xize(中华人民共和国技术引进合同管理条例实施细则) [Detailed Rules for the Implementation of the Regulations on Administration of Technology Import Contracts of the People's Republic of China](1988) Hereinafter "1988 Rules"

[1014] *See supra* note 1012, 252

[1015] Mingde Li, Zhongguo Jishu Jinchukou Zhidu de Xinfazhan（中国技术进出口制度的新发展）, http://www.iolaw.org.cn/showArticle.aspx?id=168. (last visited Mar. 5, 2017).

[1016] 1988 Rules, art.13

[1017] 1985 Regulations, art.8

this meant that, in principle, the licensees were not obliged to keep the know-how confidential after 10 years has passed since the contract had taken effect. As trade secrets are considered to be a protected property only when it is kept secret, this would mean that, after the contract expires, the destiny of the trade secret is dependent on how the licensee treats it and the licensor cannot control its disclosure. This reflects the "ignorance" towards IP and the characteristics of trade secrets at the time.[1018]

As a related but separate issue, the prohibition of use of IP after the expiration of contracts was also prohibited by the 1985 Regulations.[1019] Combined with the aforementioned rule that the term of the license cannot exceed 10 years[1020], this would factually mean that the licensor has to give up the licensed trade secret[1021] after 10 years.[1022] This was also caused by an unclear understanding of the concept of technology licensing, as contrary to technology assignment.[1023]

As China continued to develop, the 1985 Regulations became obsolete in many ways, and came to be regarded as an obstacle to the commercial activities of Chinese enterprises.[1024] Therefore, in 2001, the 1985 Regulations were annulled and the Regulations of the People's Republic of China on Administration of Import and Export of Technologies was promulgated.[1025]

Recently, a revision of the Regulations is being discussed at the State Council. The drafts are not public yet, but it is probable that the classification of technology (see

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[1018] *See supra* note 1015

[1019] 1985 Regulations, art.9(8)

[1020] 1985 Regulations, art.8

[1021] For patents, use after the expiration of the patent would be considered to be patent infringement, according to Chinese Patent Attorney, Mr. Guoxu Yang. Interview with Mr. Guoxu Yang (Feb. 2017)

[1022] *See supra* note 1015

[1023] *See supra* note 1000

[1024] *See supra* note 1015,which states that the 1985 Regulations, which strictly divided domestic and international technology transfers, did not comply to international standards and caused an unnecessary issue for Chinese companies and individuals that wished to transfer technology.

[1025] The Regulations were enacted on Jan. 1st, 2002.

5.1.7.6. below) will be altered or abolished and the registration requirements will be abolished.[1026]

In recent years, some cases concerning the licensing of FRAND-encumbered patents in the ICT sector have been dealt with under the Anti-Monopoly Law, even when the Regulations could have been applied. This is because the Anti-Monopoly law allows more flexibility and serves the purpose of obliging the parties to agree to a lower royalty rate better.[1027] Any violation of the Regulations results in the clause being unenforceable,[1028] but the application of Antimonopoly law enables the authorities to keep the contract valid while modifying the content of the contract to be compliant to the law.

5.1.7.3 Contract Law

The Contract Law dedicates an entire chapter, namely Chapter 18[1029], on technology contracts. This does not only cover patent licensing but also other technology licensing. This chapter, consisting of 4 sections and 43 articles, sets out the basic requirements of technology contracts. For the purpose of this dissertation, Section 3 "Technology transfer contracts" is of general importance and therefore is discussed later in this section.

5.1.7.4 Patent Law

Some jurisdictions such as the Philippines include voluntary licensing regulations in their patent law. However, China instead has placed them in their Contract Law. Therefore the patent law only plays a minor role in regulating voluntary licensing activities.

The Patent Law was first introduced into China in 1984, and it has gone through several revisions up to now. The latest draft at the moment is the December 2015 version

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[1026] *See supra* note 1021, interview with Mr. Yang.

[1027] *See supra* note 1020, interview with Mr. Yang.

[1028] The direct application of mandatory clauses of Chinese law to foreign-related civil relations cannot be avoided, according to the Zhonghua renmin gongheguo Shewai minshi guanxi falü shiyong fa(中华人民共和国涉外民事关系法律适用法)[Law of the People's Republic of China on Choice of Law for Foreign-related Civil Relationships].

[1029] Contract Law, Chapter 18 Technology Contracts, art.322-364

and it is expected that it will be codified in 2016 or early 2017. It includes several important changes, the most important one being the introduction of the license of right system[1030] mentioned in sections below. However, Article 12, which merely sets out the general requirements that a patented technology shall only be used by third party under licensing agreements and in return to royalty payments shall remain unchanged.

5.1.7.5 Regulations of the People's Republic of China on Administration of Import and Export of Technologies

For imports and exports of technology through licensing, the "Regulations of the People's Republic of China on Administration of Import and Export of Technologies" and "Administrative Measures for the Registration of Technology Import and Export Contracts" also apply. [1031] The "Administrative Measures for the Registration of Technology Import and Export Contracts" provides the details of the procedures described in the "Regulations of the People's Republic of China on Administration of Import and Export of Technologies".

These regulations are specialized regulations on international technology transfer agreements, therefore when these two regulations and the Contract Law and the Patent Law are in conflict, the regulations shall take precedence.

The "Regulations of the People's Republic of China on Administration of Import and Export of Technologies" was adopted by the 46th Regular Meeting of the State Council (Guowuyuan Changwu Huiyi) of the People's Republic of China in 2001 and has been in force since Jan. 1st 2002.

This regulation is applicable to all international transfers[1032] of technologies, "by

[1030] Patent Law art.82-84

[1031] Contract Law art.355 Applicability of Other Laws or Administrative Regulations. Where the relevant laws or administrative regulations provide otherwise in respect of technology import/export contracts or in respect of patent contracts or contracts for patent applications, such provisions prevail.

[1032] Regulations on Administration of Import and Export of Technologies, art.2 Such transfer includes assignment of patent rights or rights to apply for patents, licensing of rights to implement patents, assignment of technical know-how, technical service and etc.

way of foreign trade, investment, or economic or technological cooperation." [1033]

5.1.7.6 Definitions and classifications

Technology Contracts. The definition of technology contracts is stated in Contract Law Article 322, as follows:

Article 322 Definition of Technology Contract A technology contract is a contract whereby the parties describe their rights and obligations in respect of the development or transfer of technology, or in respect of technical consulting or service.

According to this article, technology transfer contracts fall under the scope of Chapter 18 of the Contract Law. Technology contracts shall be "conducive to the advancement of science and technology, and expedite the conversion, application and dissemination of scientific and technological achievements" [1034] . Therefore, "[a] technology contract which illegally monopolizes technology, impairs technological advancement or infringes on the technology of a third party is invalid". [1035]

Technology Transfer Contracts. Specifically for technology transfer agreements, Chapter 18 Section 3 "Technology Transfer Contracts" provides the general rule. "Technology transfer contracts" in this section include assignment of patent or its application right, transfer of technical secrets and patent licensing.[1036]

Classification of Licenses. According to the "Interpretation of the Supreme People's Court", Article 25, technology licenses[1037] could be an exclusive license, a sole license or a non-exclusive license. When the agreement does not specify the type of license, it is assumed it is a non-exclusive license.[1038] The licensee does not have a right

[1033] Regulations on Administration of Import and Export of Technologies, art.2
[1034] Contract Law, art.323
[1035] Contract Law, art.329
[1036] Contract Law, art.342
[1037] This applies both for patents and technical trade secrets.
[1038] Interpretation of the Supreme People's Court art.25

to sublicense[1039] unless the licensing agreement states otherwise. These are classifications based on the exclusivity. Cross licensing and sub-licensing are also seen in practice.[1040]

Classification of Technology and Relevant Regulations. Under the Regulations on Administration of Import and Export of Technologies, technologies are categorized into three types – "allowed"[1041], "restricted"[1042] and "prohibited"[1043].

The State encourages[1044] the import of "advanced and useful technologies"[1045] and the export of "well-developed industrialized technology"[1046] and permits free trade of technology unless prohibited under other laws and regulations.[1047]

[1039] Contract Law, art. 346, Patent Law art.12

[1040] For classifications of licenses, *see supra* note 1084

[1041] Regulations on Administration of Import and Export of Technologies, art.17, art.39

[1042] Regulations on Administration of Import and Export of Technologies, art.8, art.31

[1043] Regulations on Administration of Import and Export of Technologies, art.8, art.31

[1044] There is another category of technology, namely "encouraged." This is not a classification under the Regulation, but is under the catalogue of technologies and products encouraged to be imported, issued by the Ministry of Commerce. *See* supra note 998 (Holthuis, 2014) 7. "Encouraged technologies can be subject to specific policy benefits, such as access to loans and interest discounts, premium subsidies, allocation of land for production and other (local) benefits."

[1045] Regulations on Administration of Import and Export of Technologies, art.7

[1046] Regulations on Administration of Import and Export of Technologies, art.30

[1047] Regulations on Administration of Import and Export of Technologies, art.5

Items falling under the scope of the Foreign Trade Law Article 16[1048] and 17[1049]

[1048] Zhonghua Renmin Gongheguo Duiwai Maoyifa (中华人民共和国对外贸易法)[Foreign Trade Law of the People's Republic of China] (revised 2004), hereinafter "Foreign Trade Law" art.16

The State may restrict or prohibit the import or export of relevant goods and technologies for the following reasons that:

(1)the import or export needs to be restricted or prohibited in order to safeguard the state security, public interests or public morals,

(2)the import or export needs to be restricted or prohibited in order to protect the human health or security, the animals and plants life or health or the environment,

(3)the import or export needs to be restricted or prohibited in order to implement the measures relating to the importations and exportations of gold or silver,

(4)the export needs to be restricted or prohibited in the case of domestic shortage in supply or the effective protection of exhaustible natural resources,

(5)the export needs to be restricted in the case of the limited market capacity of the importing country or region,

(6)the export needs to be restricted in the case of the occurrence of serious confusion in the export operation order,

(7)the import needs to be restricted in order to establish or accelerate the establishment of a particular domestic industry,

(8)the restriction on the import of agricultural, animal husbandry or fishery products in any form is necessary,

(9)the import needs to be restricted in order to maintain the State's international financial status and the balance of international payment,

(10)the import or export needs to be restricted or prohibited as laws and administrative regulations so provide, or

(11)the import or export needs to be restricted or prohibited as the international treaties or agreements to which the state is a contracting party or a participating party so require.

（Translation available at Investment Promotion Agency of Ministry of Commerce (CIPA), *Foreign Trade Law of The People's Republic of China (Revised in 2004)* http://www.fdi.gov.cn/1800000121_39_1531_0_7.html (last visited Apr. 2, 2017)）

[1049] Foreign Trade Law art. 17 Article 17 The State may take any necessary measure to safeguard national security on the import and export of goods and technologies relating to fissionable and fusionable materials or the materials from which they are derived, and with respect to the import and export of arms, ammunition or other military materials.

are subject to either restriction or prohibition[1050]. Technology classified as "prohibited" is not allowed to be imported[1051] or exported[1052].

For technology classified as "restricted", the import and export thereof needs and is subject to prior approval of the competent foreign trade department under the State Council[1053] or when applicable, other relevant departments[1054]. When an application is approved, the "License of Import of Technologies" shall be issued by the director of the competent foreign trade department. The licensing agreement shall be effective on the date when the "license of import of technology" is granted.

For the exportation of technology, there are further restrictions concerning the field of technology, such as "nuclear technology, a relevant technology of nuclear products for both military and civil purposes, a technology for supervising or monitoring the manufacture of chemicals, a technology for military purposes, or any other technology under export control".[1055] Technology in these fields shall be exported according to relevant administrative laws and regulations.[1056]

All licensing contracts of which the subject matter is a freely transferable technology, the registration of the contract under the competent foreign trade department

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The State may, in the time of war or for the protection of international peace and security, take any measures as necessary in respect of import or export of goods and technologies. Translation available at World Trade Organization, *Notifications of Laws and Regulations under Articles 18.5, 32.6 And 12.6 Of The Agreements*, https://www.google.co.jp/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwiPn5nmi4TTAhUJW7wKHWeSB8QQFgghMAE&url=http%3A%2F%2Fenforcement.trade.gov%2Ftrcs%2Fdownloads%2Fdocuments%2Fchina%2FG_ADP_N_1_CHN_2_Supp4.doc&usg=AFQjCNEioap7mXy_05MP_gZjGPgPORtH_A&sig2=YlIMKEDWwQSJCDNsB4ZKkQ&bvm=bv.151325232,d.dGc (last visited Apr. 2, 2017)

[1050] Regulations on Administration of Import and Export of Technologies, art.11, art.31

[1051] Regulations on Administration of Import and Export of Technologies, art.9

[1052] Regulations on Administration of Import and Export of Technologies, art.32

[1053] Regulations on Administration of Import and Export of Technologies, art.11, art.31

[1054] Regulations on Administration of Import and Export of Technologies, art.11, art.31

[1055] Regulations on Administration of Import and Export of Technologies, art.45

[1056] Regulations on Administration of Import and Export of Technologies, art.45

under the State Council is necessary. [1057] The registration of the contract is not a precondition of the contract taking effect.[1058] However, the license of import (export) of technology or the certificate of registration is necessary for the procedures concerning foreign exchange, banking, taxation and customs.[1059] This means that the contract is valid from the signing date, but no transfer of royalties or other licensing related fees could be transferred out of China until the registration of the contract.

Upon registration, the following three documents shall be submitted: (1) an application for registration of the technology import (export) contract; (2) a copy of the technology import (export) contract; and (3) any regulatory document certifying the legal status of the two parties to the contract.[1060]

During the registration process, the authorities basically act upon the principle of freedom of contract and do not interfere with the content of the contract. One government officer[1061] commented that her office intentionally does not give any advice to the parties, even when asked, in order not to interfere with private trade activities. [1062]

When the contract is registered, the first step is to register the contract in a unified system.[1063] The officers also check if the submitted documents are with all the necessary official stamps.[1064] Additionally, they look into the contract and if the contract violates the compulsory regulations of Chinese laws and regulations, it will not be registered.[1065] The certificate of registration will be issued within three working days from the date of

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[1057] Regulations on Administration of Import and Export of Technologies, art.17, art.18, art.39

[1058] Regulations on Administration of Import and Export of Technologies, art.17, art.39

[1059] Regulations on Administration of Import and Export of Technologies, art.20, art.42

[1060] Regulations on Administration of Import and Export of Technologies, art.18, art.40 translation available at Ministry of Commerce of the People's Republic of China, Public Information Services, Foreign trade law of the people's Republic of China (revised in 2004), http://www.fdi.gov.cn/1800000121_39_1531_0_7.html.

[1061] See supra note 396

[1062] *See supra* note 1061

[1063] *See supra* note 1061

[1064] *See supra* note 1061

[1065] *See supra* note 1061

receipt of the documents.[1066]

In practice, some licensing agreements are not registered due to the following reasons. In many cases, the cooperation between the companies already exists and on the course of the development of the relationship the need for technology transfer occurs. The licensing agreement is already valid on the day of signing[1067] and it is legitimate to transfer technology without registering. However in order to go through procedures concerning international banking, the registration certificate is necessary for the transfer[1068], and only then the parties sign an agreement and register[1069]. This causes delay in registration and difficulty in grasping the actual number of international technology transfer deals.[1070]

5.1.7.7 Regulations on clauses of licensing agreements

5.1.7.7.1 Applicable Law

The reason why the applicable law for technology transfer agreements is of crucial importance that it dictates the efficacy of the national regulations. No matter how strict the national licensing regulations of developing countries are, if there is ample opportunity to evade the application of the law, the law would not be sufficiently effective.

Developing countries in principle try to protect their companies from being forced into unfair agreements. As a part of this effort, there are often some regulations restricting the evasion of the domestic law. In the Philippines for example, it is prohibited to choose foreign law as the applicable law.[1071] The same applies for Ghana, as mentioned above. China, unlike the Philippines or Ghana, allows the choice of law, but not without limits, as will be discussed below.

On the other hand, foreign companies are sometimes "in fear" of the laws in unfamiliar jurisdictions[1072] and are hesitant to go into contract under the law of the

[1066] Regulations on Administration of Import and Export of Technologies, art. 19

[1067] Regulations on Administration of Import and Export of Technologies, art.17

[1068] Regulations on Administration of Import and Export of Technologies, art.20

[1069] *See supra* note 1061

[1070] *See supra* note 1061

[1071] IP Code (Phil.) §88.1

[1072] Interview with Prof. Xiang Yu, Department of Technological Management and

licensee's domicile. Despite the law not being as strict as in Ghana, this is also the case in China - some foreign companies consider the compulsory warranty requirements of Article 24 of the Regulations on Administration of Import and Export of Technologies to be an obstacle for technology transfer into China, for example.[1073]

For international technology transfer contracts, foreign law can also be the law applicable for the settlement of disputes.[1074] When the parties have not made the choice, "law of the country to which the contract is most closely connected" is applied.[1075] Nevertheless, "[w]here a mandatory provision of the law of the People's Republic of China ("PRC") exists with respect to a foreign-related civil relation, that mandatory provision shall be applied directly."[1076] For example, for anti-monopoly or anti-dumping related cases, the law of China shall be directly applied even when the applicable law determined by the parties is a foreign law[1077].

Apart from the question of the selection of law in case of disputes, the "factual" screening of contracts upon registration is also a practical issue. In this regard, it must be

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Intellectual Property, School of Management, Huazhong University of Science and Technology (Jan. 2016)

[1073] Japan External Trade Organization (JETRO), *Chūgoku Gijyutu Yushutunyū Kanli Jōrei Ni Kansuru Gijyutu Kyōyosha No Risuku Teigen No Tameno Keiyaku Jōkōan to Keiyaku Sukīmu No Kentō (中国技術輸出入管理条例に関する技術供与者のリスク低減のための契約条項案と契約スキームの検討)* (Japan External Trade Organization 2015) 116

[1074] Minfa Tongze (民法通则)[General Principles of the Civil Law of the People's Republic of China] (1986), Hereinafter "General Principles of the Civil Law" art.145 Section 1. *See* also, Law of The People's Republic of China on the Laws Applicable to Foreign-related Civil Relations, art.47.

[1075] General Principles of the Civil Law, art.145 Section 2

[1076] Law of The People's Republic of China on the Laws Applicable to Foreign-related Civil Relations ("Zhonghua Renmin Gongheguo Shewai Minshi Guanxi Falü Shiyongfa")

[1077] Interpretation of the Supreme People's Court on Several Issues Concerning the Application of the Law of the People's Republic of China on Foreign-Related Civil Relations (I)

noted that, regardless of what law is chosen to be the governing law of the agreement, the mandatory articles of Regulations on Administration of Import and Export of Technologies cannot be avoided if the licensee is a Chinese entity for practical reasons. When the parties bring a contract not complying with the mandatory regulations to the competent foreign trade department under the State Council, they will not be able to register the agreement, resulting in not being able to transfer the royalties out of China. [1078]

Therefore, the only possible way to entirely[1079] avoid the application of Chinese law[1080] as a foreign licensor is to choose foreign law as the governing law and license the technology to a foreign entity, for example a foreign[1081] subsidiary of the "true" licensee. (See figure below[1082])

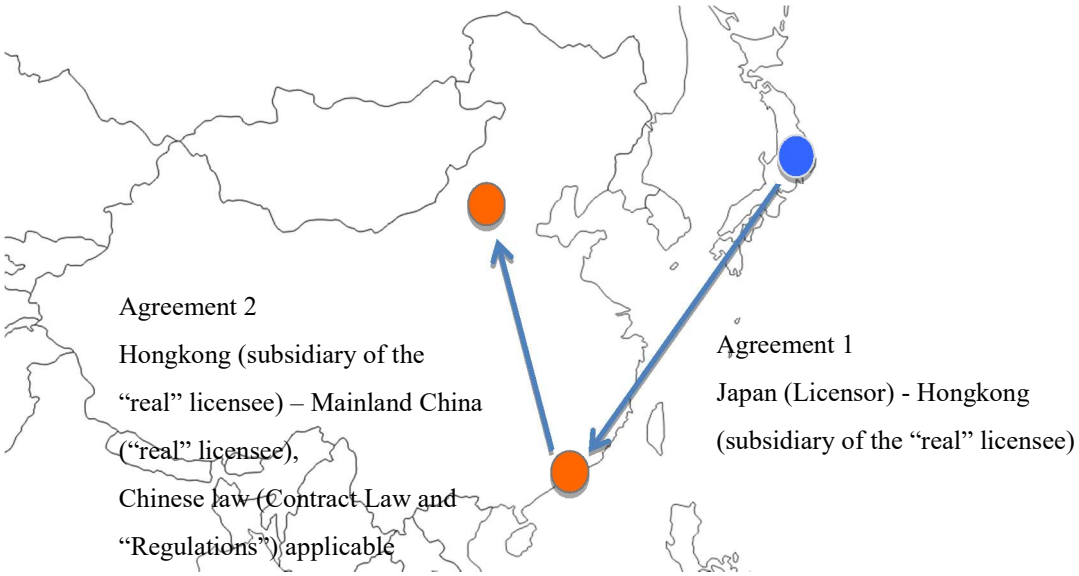
[1078] *See supra* note 1061

[1079] If the licensor (parent company) licenses the technology first to a foreign subsidiary of itself and from there to the Chinese licensee, the parent company can avoid the application of the contract such as liabilities occurring from the license, but the subsidiary is still liable.

[1080] More precisely, under this scheme the licensor can avoid the application of Chinese law. The "real" licensee, being a Chinese entity, cannot avoid the application of the compulsory articles of the Chinese law. The licensing agreement between the Hong Kong subsidiary and the Chinese parent company is subject to all the compulsory articles of the Chinese law.

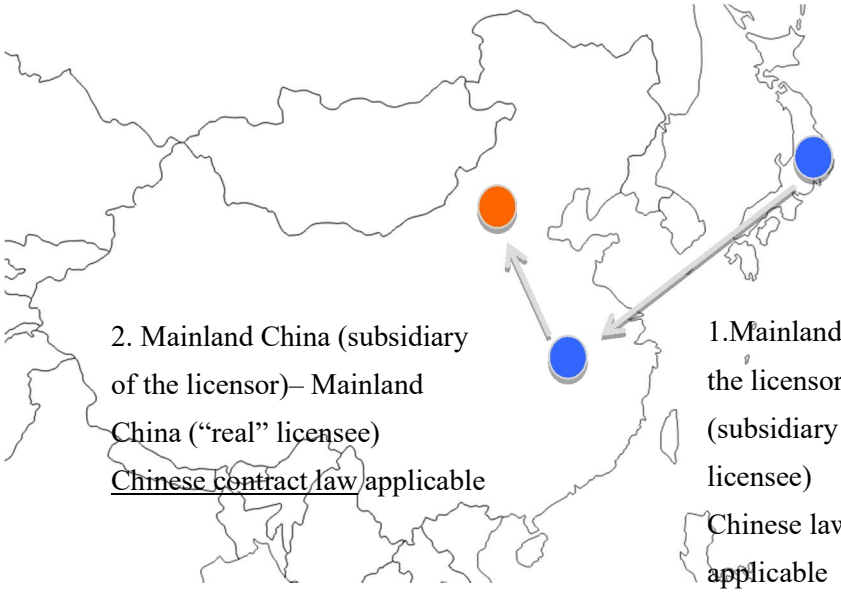
[1081] Civil relations involving Hong Kong is regarded as a foreign-related civil relation under the Interpretation of the Supreme People's Court on Several Issues Concerning the Application of the Law of the People's Republic of China on Foreign-Related Civil Relations (I) (2012).

[1082] The original map is available here
d-maps, D-maps.com: Free maps, free blank maps, free outline maps, free base maps (2007), http://d-maps.com.



Another possibility to limit the applicability of the Regulations on Administration of Import and Export of Technologies is to license the technology out to a Chinese subsidiary of the licensor and sublicense to the "real" licensee. Under this scheme, the liabilities would be limited to the subsidiary and would not involve the parent company. Also, the Regulations on Administration of Import and Export of Technologies, which are stricter than the Contract Law does not apply to the contract between the Chinese subsidiary and the licensee. There are no prohibitions on this kind of evasion of the application of Regulations on Administration of Import and Export of Technologies.[1083]

[1083] *See supra* note 1072



5.1.7.7.2 Formalities of the Agreement

Concerning the formalities of the agreement, patent law does not provide much. Article 12, which is the only article referring to voluntary licensing agreement states as follows:

Article 12 Any unit or individual that intends to exploit the patent of another unit or individual shall conclude a contract with the patentee for permitted exploitation and pay the royalties.

In previous versions of the patent act, it was required that the agreement be in writing. However, in the 2008 revision, the requirement was deleted due to the necessity of accepting implied licenses as a form of license.[1084]

The Contract Law Article 342 on the other hand states that all technology transfer agreements should be made in writing.[1085] Since patent licensing falls under the category of technology transfer agreements[1086], the two articles are inconsistent. Despite the efforts of the State Intellectual Property Office on briefing the National People's Congress Law

[1084] YIN XINTIAN, ZHONGGUO ZHUAN LI FA XIANG JIE (introduction to the patent law of china) (Zhi shi chan quan chu ban she 2011) 170-172

[1085] Contract Law, art.342

[1086] Contract Law, art.342

Committee on the discrepancy, the law is yet to be revised.[1087]

In order to solve the "mystery" of the discrepancy, one must look into the definition of the term "technology transfer."[1088] This discrepancy was caused by the fact that articles had been directly imported from the Technology Contract Law[1089].[1090] In the context of the Technology Contract Law, the focus is on the "enablement" – regardless of whether the ownership is transferred through assignment or the licensee is merely allowed to use the technology, the licensee is enabled to use the technology.[1091] Therefore the differentiation between the "assignment" of rights and "licensing" of rights was not clear and required all technology transfer agreements to be registered.[1092]

Since the two articles are in conflict, the patent law is applied to all patent licenses, as the special law is preferentially applied over the general law.[1093] For technical trade secret licensing, there are no specialized laws, therefore the licensing agreement shall be in writing.

Regardless of which articles apply, the contract, even if unwritten, is deemed to exist under the following circumstances

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[1087] *See supra* note 1084 170

[1088] This idea is based on *supra* note 1084 169-170

[1089] Technology Contract Law of the People's Republic of China ("Zhonghua Renmin Gongheguo Jishu Hetongfa") (1987), art.9 The formation, modification and termination of a technology contract shall all be in written form.
Translation available at Beijing Municipal Science and Technology Commission, *Technology contract law of the People's Republic of China*, http://www.bjkw.gov.cn/n244495/n244634/2658328.html. (last visited Sep. 12, 2016).
The law was replaced by the Contract Law in 1999. Chen Xuebin, *China enacts a new Contract Law for the new millennium*, CULTURE MANDALA: THE BULLETIN OF THE CENTRE FOR EAST- WEST CULTURAL AND ECONOMIC STUDIES Vol. 4 Issue 1, Article 2. (2016).

[1090] *See supra* note 1084 169

[1091] *See supra* note 1084 169

[1092] *See supra* note 1084 169

[1093] *See supra* note 1084 170

(1) one party has substantially performed its obligation and the other party has accepted the performance; or

(2) before a written contract has been executed, one party has performed its major obligation and the other party has accepted the performance.[1094]

Note that, for "restricted" technologies, the existence of the contract still relies upon the approval of the relevant administrative authorities.[1095]

The terms of the contract are to be decided by the contracting parties. However, for patent licensing it shall include the name of the invention, the patent applicant and the patentee, application date, application number and the term of the patent.[1096]

For all technology contracts, the law suggests[1097] that the following are included:

(i) Project name
(ii) Contents, scope and requirement of the subject matter
(iii) The plan, schedule, period, place, territory and method of performance
(iv) Confidentiality of technical information and materials
(v) Allocation of responsibilities for risks
(vi) Ownership of the technology and allocation of benefits accrued from it
(vii) Standards applicable to and method of acceptance test
(viii) Price, remuneration or licensing fee and the method of payment
(ix) Liquidated damages or method for calculation of damages
(x) Method of dispute resolution
(xi) Definition of terms and phrases.

In addition to the aforementioned clauses, technology contracts could also include materials relating to the performance of the contract such as "technical background information, feasibility studies and technical evaluation reports, project task matrix and

[1094] CHINA INTELLECTUAL PROPERTY LAW GUIDE (Kluwer Law International ed., Kluwer Law International 1st ed. 2005). "Requirement for written form" 80-410 (2004)
[1095] Regulations on Administration of Import and Export of Technologies, art.10, art.3
[1096] Contract Law, art.324
[1097] Contract Law, art.324

project plan, technical standards, technical specifications, original designs and technique documents, as well as other technical documentation."[1098]

5.1.7.7.3 Subject Matter

The subject matter of a technology licensing agreement can be patents including inventions, utility models, and designs[1099], or trade secrets. Only proprietary technologies can be the subject matter of a licensing agreement.[1100]

For patent licensing, the agreement is valid only during the period the patent is valid[1101], therefore an invalid patent or a patent of which protection period has expired cannot be the subject matter of a licensing agreement.

As stated in 5.1.7.6, under the Regulations on Administration of Import and Export of Technologies, technologies are categorized into three types – "allowed"[1102], "restricted"[1103] and "prohibited"[1104]. In order for a technology to be the subject matter of the license, it needs to be either in the "restricted" or "allowed" category. One of the obstacles the parties face when seeking to conclude an agreement is that some technologies have a dual use.[1105] The interpretation by relevant authorities of what falls into the "restricted" category is broad, and every licensing agreement of which subject matter is a "restricted" technology would have to go through the complicated approval process.[1106]

5.1.7.7.4 The Scope of License

Anyone who wishes to "exploit" another's patent rights needs to obtain a license

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[1098] Contract Law, art.324

[1099] In this dissertation, all of them are referred to as "patents" or "patent". The Patent Law covers all three types of "invention-creations". *See* Patent Law art.2

[1100] *See* supra note 1094 "Subject matter of technology transfer" 80-010 (2004)

[1101] Contract Law, art.344

[1102] Regulations on Administration of Import and Export of Technologies, art.17, art.39

[1103] Regulations on Administration of Import and Export of Technologies, art.8, art.31

[1104] Regulations on Administration of Import and Export of Technologies, art.8, art.31

[1105] Interview with Mr. Beat Weibel, Chief IP Counsel, Senior Vice President and Head of Corporate Intellectual Property, Siemens AG. (Mar. 2017)

[1106] *See supra* note 1105

from the rights holder.[1107] The exploitation of patents can take the following form: "manufacture, use, offer to sell, sell, or import the patented products, use the patented method, or use, offer to sell, sell or import products that are developed directly through the use of the patented method" for production or business purposes.[1108] Therefore, logic follows that all the aforementioned acts of third parties shall be done under a license. However, there is an important exception: China follows the international exhaustion principle and therefore imports of products which are placed in the market by the rights holder or under the approval of the right holder are not regarded as infringement, therefore a license is not needed to import such products.[1109]

The scope of the license can be freely determined by the parties unless the limitation of the scope restricts technological competition and technological development.[1110] According to the Interpretation of the Supreme People's Court, "the scope of the license" includes, but is not limited to, the period, geographical area, method of use and persons allowed access to the technical trade secret.[1111] If the period of use is not agreed among the parties or the agreement is insufficiently clear, the period of use will not be restricted.[1112]

In terms of exportation of products embodying licensed technology, both the Interpretation of the Supreme People's Court and the Regulations on Administration of Import and Export of Technologies prohibits unreasonable restrictions on exports.[1113] Whether the prohibition is "unreasonable" is dependent on the details of the cases. However, competing rights such as an exclusive license granted in another jurisdiction are considered to be a reasonable ground for restriction.[1114]

[1107] Patent Act art.12

[1108] Patent Act art.11

[1109] Patent Act art.69, Subsection 1

[1110] Contract Law, art.343

[1111] Interpretation of the Supreme People's Court, art.28

[1112] Interpretation of the Supreme People's Court, art.28

[1113] Interpretation of the Supreme People's Court, art.10 Subsection 3, Regulations on Administration of Import and Export of Technologies, art.29 Subsection 7

[1114] Interview with Mr. Hao Ma, Director of CCPIT Patent and Trademark Law Office (Jan 2016)

5.1.7.7.5 Determination of Licensing Fees and the Payment thereof

The parties can freely agree on the calculation and payment method of the licensing fees. In some business sectors, there are regulations which sets a royalty cap of 5%, which is a widely accepted royalty rate in China.[1115]

It is for the benefit of foreign licensors to agree on a lump-sum payment rather than royalties contingent on the volume or income of the product "due to pervasive gamesmanship and under-reporting of royalties in China", as one law firm blog puts it.[1116] When the parties agree to royalties contingent on the volume or income generated, it is advisable to define the base of calculation in as much detail as possible to avoid future conflicts.[1117] Where the licensing agreement is a mixed agreement of for example trade secrets and patent licensing or an agreement to license out multiple patents, it is better to clearly define which part of the payment is attributable to which part of the subject matter. Otherwise, when a part of the subject matter is invalidated or otherwise put in the public domain, which means that the knowledge becomes subject matter ineligible, the parties would face difficulties in determining the royalties after the number of subjects covered has been reduced.[1118]

When the agreement on licensing fees is not made or is insufficiently clear, the People's Court may decide based on the following considerations: the research and development cost, the progressiveness of the technology, the degree of commercialization and application, the benefits and responsibilities of the parties and the economic benefits of the technology.[1119]

Where one of the parties has still not fulfilled its main obligation stated in the contract 30 days after an interpellation, the other party may dissolve the contract based

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[1115] *See supra* note 998 (Holthuis, 2014)

[1116] Chris Neumeyer, *Best practices for licensing patents to companies in china*, http://techlaw.biz/best-practices-licensing-patents-companies-china/. (last visited Sep. 12, 2016).

[1117] *See supra* note 1072

[1118] *See supra* note 1072

[1119] Interpretation of the Supreme People's Court, art.14 Subsection 1

on Contract Law Article 94, Subsection 3.[1120]

When the licensee fails to pay the licensing fees, the licensee must "pay the overdue licensing fee and liquidated damages" in accordance with the contract. [1121] When the licensee fails to pay the licensing fee or liquidated damages, it shall cease the exploitation of the patent and the use of the technical secret and return the technical materials provided from the licensor. In this case the licensee would be liable for the breach of contract.[1122]

All payments to foreign licensors or from foreign licensees are preconditioned by the registration or approval of the contract.[1123]

5.1.7.7.6 Warranties

For all technology transfer contracts both domestic and international, the Contract Law sets out the mandatory warranties the licensor must provide the licensee. The licensor shall guarantee that the licensor is the legitimate holder of the subject matter and that the technology provided is "complete, free from error, and capable of achieving the prescribed goals".[1124] The licensor is also liable when the exploitation of the technology by the licensee infringes the lawful interests of third parties, unless otherwise agreed by the parties. [1125]

Under the Regulations on Administration of Import and Export of Technologies Articles 24 and 25, extra sets of mandatory warranties are given for technology imports and exports. The Regulations, as well as the Contract Law, state that the supplier of the technology shall ensure that it has the right to license out the technology.[1126] It is considered that the warranty could also be legitimately limited by adding the phrase

[1120] Interpretation of the Supreme People's Court, art.15

[1121] Contract Law, art.351

[1122] Contract Law, art.352

[1123] Regulations on Administration of Import and Export of Technologies, art.20, art.42

[1124] Contract Law, art.349. This could be a problem for foreign universities or research institutes licensing early stage technologies,

[1125] Contract Law, art.353

[1126] Regulations on Administration of Import and Export of Technologies, art.24

"according to the best knowledge of the licensee".[1127]

The licensor must also warrant that the technology is complete, accurate, effective and capable of achieving the agreed technical object.[1128] It is mandatory for all licensors to comply without any reservations.[1129] This is one of the clauses that legitimizes a licensee's request to the licensor for additional know-how[1130] by claiming that that they cannot meet the agreed technical object without it. If the licensor does not provide relevant additional know-how, the licensor bears the risk of being taken to court and having their contract invalidated.[1131] The decisive point in this case is whether the requested know-how is truly necessary for the licensee to achieve the agreed technical target.[1132] Therefore it is very important to decide, in sufficient detail, and to limit what the agreed target is.

Concerning third party rights infringement, the agreement states that, when the receiver of the technology is accused of infringing third party rights, it shall immediately notify the supplier and the supplier shall assist the receiver in removing the obstacle for the implementation of the technology.[1133] When the recipient of the technology is found to infringe a third party right, the supplier shall bear the liability.[1134] Unlike the provision in the contract law[1135], this is considered to be a mandatory provision as it does not allow the parties to agree otherwise[1136]. However, it is considered that, it is sufficient to warranty

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[1127] *See supra* note 1072

[1128] Regulations on Administration of Import and Export of Technologies, art.25

[1129] *See supra* note 1072

[1130] China SME IPR Help Desk, TECHNOLOGY TRANSFER TO CHINA: GUIDANCE FOR BUSINESSES (European Communities, 2008) 2. For example, "State Owned Enterprises may be obliged to abide by local and State industry policy which requires them to gain more know-how transfer and R&D investment rather than maximizing short term profits."

[1131] *See supra* note 1021, interview with Mr. Yang.

[1132] *See supra* note 1021, interview with Mr. Yang.

[1133] Regulations on Administration of Import and Export of Technologies art.24

[1134] Regulations on Administration of Import and Export of Technologies, art.24

[1135] Contract law art.353

[1136] Contract law art.353 explicitly allows parties to agree that the liability of third party right infringement not be borne by the licensee but Regulations of the People's Republic of China on Administration of Import and Export of Technologies art.24 does not.

that the licensor does not know, according to its best knowledge, that any third party rights are infringed by the implementation of the subject matter technology.[1137]

For product liabilities, it is not necessary for the licensor to provide warranties.[1138]

For transfer of technical secrets, the transferor shall supply the technical materials and provide technical guidance as stated in the contract. The obligation to maintain the secrecy occurs both for the licensor and the licensee. [1139]

Even for patent licensing, it is obligatory that the licensor not only permits the use of the patented technology but also provide relevant technical materials and guidance[1140], depending on the circumstances[1141]. If the aim of the contract cannot be reached without technical materials owned by and guidance from the foreign technology supplier, then the supplier has a legal obligation to provide technical assistance. [1142] When additional technical assistance not stated in the contract becomes necessary, the licensee may be required to pay fees for the assistance depending on individual cases.[1143]

5.1.7.7.7 Obligations of the Parties

There are special articles for liabilities for both the licensors and licensees for the importation of technical trade secrets[1144]. Both parties are under the obligation to keep the technical trade secret within the period stated in the contract. [1145] However, if the

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[1137] *See supra* note 1072

[1138] *See supra* note 1072

[1139] Contract Law, art.347

[1140] Contract Law, art.345

[1141] *See supra* note 1114

[1142] *See supra* note 1114

[1143] *See supra* note 1114.

[1144] According to the Interpretation of the Supreme People's Court art.1, Technical trade secrets are technical information of commercial value not known to the public, for which necessary protective measures are taken. The direct translation of the original word", "jishu mimi" is "technical secret". However, since the English term referring to secrets of commercial value not known to the public is trade secret and "technical secret" does not sufficiently reflect the commercial value aspect, the author uses the word "technical trade secret" as a translation for "jishu mimi".

[1145] Contract Law Articles 348 (stating the obligation of the provider) and 350 (stating the

confidentiality ceases to exist due to causes not attributable to either party, the confidentiality obligation of that party shall be terminated immediately.[1146] According to the Interpretation of the Supreme People's Court, this confidentiality obligation does not interfere with the right of the licensor to seek a patent application for the subject matter, unless the parties agree otherwise.[1147]

5.1.7.7.8 Prohibited Clauses

The Contract Law Article 329 states that technology licensing contracts which illegally monopolize technology, or impair technological advancement are invalid. Although the terms are vague, there is an interpretation done by the Supreme Court which elaborates on this matter. The Regulations on Administration of Import and Export of Technologies[1148] have a list of prohibited clauses applicable to international contracts, which is similar to the lists provided in the interpretation.

According to the Interpretation of the Supreme People's Court, a contract would be deemed to be "illegally monopoliz[ing] technology", or "impairing technological advancement" under the following circumstances[1149] and thus would be deemed invalid;

(1) Restricting technological development by either party based on the licensed technology or setting unequal conditions on trading technological advancements. This includes agreements that require the assignment of the improvement of one party to the other without compensation, non-reciprocal assignment of the improvement of one

obligation of the recipient)

[1146] Regulations on Administration of Import and Export of Technologies art.26 … Within the time of confidentiality, the obligation of one party to protect the confidentiality shall terminate immediately after the confidential technology is disclosed for reasons not of his or its own.

[1147] Interpretation of the Supreme People's Court art.29

[1148] Regulations on Administration of Import and Export of Technologies art.29

[1149] Interpretation of the Supreme People's Court art.10

party to the other, or exclusive or shared ownership of the improvement of one party to another party without compensation.[1150]

(2) Restricting one party from obtaining technology similar to or in competition with the technology provided through the license from other providers.[1151]

(3) Restricting one party from sufficiently implementing the technology in a reasonable manner, including unreasonably restricting the quantity, sort, price, sales channels and export of the product or the service provided by the licensee. [1152]

(4) Requesting the licensee to accept conditions which are not essential for the implementation of the technology, such as purchasing non-essential technology, raw materials, products, equipment, service or accepting unnecessary workers.[1153]

(5) Unreasonably restricting the licensee's source of purchase of raw materials， parts, products or services. [1154]

(6) Prohibit or subject to condition the opposition of the validity of the intellectual property right.[1155]

When a licensing agreement of which subject matter is a technical trade secret and the agreement is deemed invalid based on Contract Law Article 329, the party who obtained the license without fault may continue the use of the technical trade secret within the scope the license allowed given that reasonable royalties are paid and confidentiality obligations are undertaken.[1156] However, when the licensee knew or should have known that the implementation of the agreement infringed third party rights at the time of the agreement or during the implementation, the act of the parties consist

[1150] Interpretation of the Supreme People's Court art.10 (1)

[1151] Id. (2)

[1152] Id. (3)

[1153] Id. (4)

[1154] Id. (5)

[1155] Id. (6)

[1156] Interpretation of the People's Supreme Court, art.12.

joint infringement and are subject to joint and several liability.[1157] In such cases the licensee may not continue the use of the technical trade secret.[1158] When there is dispute on the licensing fee, the parties may request the court to decide.[1159] Upon determining the license fee, the court may refer to royalties the right holder receives normally or the payment the right holder receives upon the transfer of the technical trade secret, considering elements such as the research and development cost, the extent of commercialization and application, the scale of use by the implementer and economic benefits. [1160] If the licensee does not pay the licensing fee, the court may demand the halt of the use of technology when requested to do so by the right holder.[1161]

Regulations on Administration of Import and Export of Technologies Article 29 prohibits any of the clauses mentioned below. Many of the articles are similar, but Subsections 3, which prohibits the restriction on making improvements on the subject matter technology and 7, which prohibits the undue restriction of export channels are specific to the Regulations. On the other hand, the Regulations do not explicitly prohibit the restriction of opposition to the validity of the intellectual property rights by the licensee unlike the Interpretation[1162], but to add such restrictions is prohibited in any case, as the Interpretation applies to all contracts including international contracts.

(1) requiring the receiving party to accept any additional condition unnecessary for the technology import, including buying any unnecessary technology, raw material, product, equipment or service;
(2) requiring the receiving party to pay exploitation fees for a technology when the term of validity of the patent right has expired or the patent right of which has been invalidated, or to undertake other relevant obligations;
(3) restricting the receiving party from improving the technology supplied by the

[1157] Id.
[1158] Id.
[1159] Interpretation of the People's Supreme Court, art.13.
[1160] Interpretation of the People's Supreme Court, art.13.
[1161] Interpretation of the People's Supreme Court, art.13.
[1162] Interpretation of the People's Supreme Court, art.10, Subsection 6

supplying party, or restricting the receiving party from using the improved technology;
(4) restricting the receiving party from obtaining technology similar to that supplied by the supplying party from other sources or from obtaining a competing technology;
(5) unduly restricting the receiving party from purchasing raw material, parts and components, products or equipment from other channels or sources;
(6) unduly restricting the quantity, variety, or sales price of the products the receiving party produces; or
(7) unduly restricting the receiving party from utilizing the channel for exporting products manufactured using the imported technology.

Note that for (5) through (7) the word "unduly" is added before "restricting". This means that the regulation allows some space to permit the restrictions. What qualifies as a valid reason for restriction is not necessarily clear. However, there are some common understanding of the application.

For (5) which prohibits the undue restriction of the licensee's procurement of "raw material, parts and components, products or equipment from other channels or sources"[1163], the decisive points in deciding the legitimacy are the technical necessity and price. If the restriction of procurement is necessary to reach a certain quality necessary for a product to properly function or to protect consumer safety, the restriction shall not be deemed undue. Also, the price shall be within the reasonable price range. If the price is unreasonably high compared to similar products available on the market without any significant differentiation in quality or function, it is likely that the restriction will be considered as undue.[1164]

For (6) which prohibits the undue restriction of the quantity, variety, or sales price of the products produced by the licensee, the consideration is based on commercial reasonableness – for example, price restrictions enabling the setting of national unified prices may be regarded as permissible.[1165] Another example of possibly permissible restriction is to restrict the quantity of production in order to maintain the price when the

[1163] Regulations on Administration of Import and Export of Technologies, art.29
[1164] *See supra* note 1114
[1165] *See supra* note 1114

demand for the product is limited.[1166]

For (7) which prohibits utilizing the channel for exporting products manufactured using the imported technology, the word "unduly" is interpreted quite narrowly – conflicting rights in countries such as the existence of exclusive licensees are considered to be a legitimate reason. [1167]

Under the contract law, grant-back clauses are allowed as long as they are based on the principle of mutual benefit. Article 352 states that the parties may freely agree to share subsequent improvements earned from the exploitation of the subject matter based on the principle of mutual benefit. If the method of sharing is not described clearly enough in the contract and could not be determined, the parties could supplement the agreement according to Contract law Article 61.[1168] If the parties fail to reach an agreement, "such term shall be determined in accordance with the relevant provisions of the contract or in accordance with the relevant usage".[1169] In such a case, according to Article 354, neither party shall be allowed access to the improved technology.[1170] Note that the provision concerning the sharing of improvements shall be based on "mutual benefit"[1171].

However, based on the Regulations on Administration of Import and Export of Technologies Article 27, subsequent inventions based on the technology concerned belong to the party who made the improvement. This means that grant back clauses are not allowed. Even if the contract is mutual, grant-back clauses are categorically not allowed. For example, an agreement stating that the improvements made by both parties would be jointly owned may be fair, but it is not allowed under Article 27. This shows an unreasonable overprotectiveness of licensees from having extorted from them the fruits

[1166] *See supra* note 1114

[1167] *See supra* note 1072

[1168] Contract Law, art.61 Indeterminate Terms; Supplemental Agreement If a term such as quality, price or remuneration, or place of performance etc. was not prescribed or clearly prescribed, after the contract has taken effect, the parties may supplement it through agreement….

[1169] Contract Law, art.61

[1170] Contract Law, art.354

[1171] Contract Law, art.354

of their efforts in technical advancement based on the time of the legislation, which is now out of date. [1172] Nevertheless, licensing of the improved technology to the licensor of the original technology could be allowed as long as it does not cause antimonopoly law violations.

5.1.7.8 Violations of regulations

5.1.7.8.1 Regulations on Administration of Import and Export of Technologies

The violation of the law by private parties is either regarded as a criminal offence and criminal law shall be applied, or when the violation is minor, administrative penalties based on the Customs Law shall be applied.

The prohibited acts are as follows.

(1) Importing or exporting prohibited technology, or importing or exporting restricted technology without approval [1173]. The parties shall "shall be prosecuted for criminal liability according to the provisions for the crimes of smuggling, illegal business operation, or divulging national secrets or other crimes under the Criminal Law"[1174]. When the violation is not serious to the extent it deserves criminal liability, Customs Law-based penalties are imposed, or a warning is issued by the competent foreign trade department under the State Council.[1175] In addition, illegal income shall be confiscated and/or fines amounting to one to five times the amount of the illegal income are imposed. [1176] The foreign trade department may additionally revoke the foreign trade business license.[1177]

(2) Importing or exporting restricted technology by exceeding the scope of the approval by the foreign trade business department. [1178] The parties shall be criminally prosecuted for the crime of illegal business operation etc. [1179] When

[1172] *See supra* note 1141

[1173] Regulations on Administration of Import and Export of Technologies, art.46

[1174] *Id.*

[1175] *Id.*

[1176] *Id.*

[1177] *Id.*

[1178] Regulations on Administration of Import and Export of Technologies, art.47

[1179] *Id.*

the violation is not serious to the extent it deserves criminal liability, Customs Law-based penalties are imposed, or a warning is issued by the competent foreign trade department under the State Council.[1180] In addition, illegal income shall be confiscated and/or fines amounting to one to three times the amount of the illegal income shall be imposed.[1181] The foreign trade department may additionally suspend or revoke the foreign trade business license.[1182]

(3) "Forging, mutilating, selling or buying technology import and export licenses or certificates of registration of contract" for international technology transfer.[1183] The parties shall be criminally prosecuted for "the crime of illegal business operation, or for the crimes of forging, mutilating, selling or buying official documents, certificates, and seals of State authority".[1184] When the violation is not serious to the extent it deserves criminal liability, Customs Law-based penalties are imposed, or a warning is issued by the competent foreign trade department under the State Council.[1185] The foreign trade department may additionally revoke the foreign trade business license.[1186]

(4) Acquiring technology import and export licenses through fraudulent and illegal means.[1187] The foreign trade department shall cancel the license and suspend or revoke the business license for foreign trade for the parties.[1188]

Also for the competent foreign trade department under the State Council and other relevant departments, including their employees, obligations to abide by the law are stated in the Regulations of the People's Republic of China on Administration of Import and Export of Technologies. The acts of divulging State secrets or trade secrets are punishable

[1180] *Id.*

[1181] *Id.*

[1182] *Id.*

[1183] Regulations on Administration of Import and Export of Technologies, art.48

[1184] *Id.*

[1185] *Id.*

[1186] *Id.*

[1187] Regulations on Administration of Import and Export of Technologies, art.49

[1188] *Id.*

by relevant provisions of criminal law.[1189]They also have a confidentiality obligation for technical trade secrets they obtained access to on the course of performing their functions concerning international technology transfer. [1190] When employees violate their confidentiality obligations, they are subject to administrative penalties or criminal prosecution.[1191]

5.1.7.8.2 The Anti-Monopoly Law

An important case with regard to Anti-Monopoly law violations and technology licensing was the IDC Investigation case in 2014. In May 2013, an investigation was opened by the National Development Reform Commission against a U.S. Company, IDC, which has numerous standard essential patents in the telecommunications field.[1192]
The allegations made from the Chinese companies were as follows:[1193] Imposing unfairly high license fees against Chinese device manufacturers in comparison with foreign manufacturers, imposing grant-back clauses that requires free grant back of improvement of the technology, and tying up the license of standard essential patents (SEPs) with non SEPs.

All of these are vertical agreements which do not involve horizontal agreements, and according to the classification above the existence of violation would be determined by the rule of reason.[1194]

Note that, regardless of the Anti-Monopoly Law, unilateral grant-back clauses are highly likely to be not permissible under the Contract Law Article 352, as it requires a grant-back agreement to be mutually beneficial. Since the licensing agreement is an international contract, this article is in any case not permissible under the Regulations on

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[1189] Regulations on Administration of Import and Export of Technologies, art.51

[1190] Regulations on Administration of Import and Export of Technologies Articles 23 and 44

[1191] Regulations on Administration of Import and Export of Technologies art.51

[1192] Lexology, *A second look at IDC investigation case in china*, http://www.lexology.com/library/detail.aspx?g=bd34e778-468d-4a6b-8428-4ebc148dec0a. (last visited Sep. 6, 2016).

[1193] *See supra* note 1192

[1194] *See supra* note 1084 509-510.

Administration of Import and Export of Technologies Article 27, which explicitly states that the improved technology belongs to the party who made the improvement. However, the Anti-Monopoly Law allows more flexibility in this regard, as stated in 5.1.7.2.

At the beginning of the investigation, IDC refused to cooperate with the NDRC in fear that their officials would be detained or arrested. However, since January 2014 they vowed to fully cooperate with the investigation.[1195]

On March 4th 2014, the company applied for suspension of the investigation. The application included commitments made by the company to terminate the discriminatory treatment[1196] against Chinese manufacturers, halt the tie-in of SEPs and non-SEPs, and not to impose grant-back clauses or unreasonable licensing conditions by threatening litigation.

In response to the application, the NDRC decided to suspend the investigation as the proposed measures would eliminate the anticompetitive effects of the company's monopolistic practice.[1197]

Another more recent case concerns Qualcomm Technologies, Inc., which was fined $975 million for antitrust law violations by the National Development and Reform Commission (NDRC) on February 9th, 2015. They were found to have abused their market dominance by requesting grant-backs for non-essential technologies and by not providing a list of patents included in the licensing agreement and by requesting a fixed royalty despite their relevant patents expiring. As a result, they were required to lower royalties.[1198]

[1195] *See supra* note 1192

[1196] What constitutes a "discriminatory treatment" could be disputable, as the conditions of the license does not only include the licensing fees, but other conditions such as the price of the end-product which embodies the patented technology, the production cost, the licensing negotiation cost, and existence of cross-licensing arrangements. *See supra* 2.2.4.4 for more detailed discussion.

[1197] *See supra* note 1192

[1198] ZHONGHUA RENMIN GONGHEGUO GUOJIA FAZHAN HE GAIGE WEIYUANHUI XINGZHENG CHUFA JUEDINGSHU FAGAIBAN JIAJIAN CHUFA(中华人民共和国国家发展和改革委员会行政处罚决定书 发改办价监处罚〔2015〕1 号)

Possibly reflecting the potential licensee-friendly environment, a case was brought to the Beijing Intellectual Property Court by Apple, Inc. in January 2017. Apple alleged that Qualcomm was not compliant with its FRAND duties when seeking overly high royalties and it was also violating the Anti-Monopoly Law.[1199]

China is becoming an attractive forum for technology users, not only for Chinese companies but also for foreign companies, with its strong tendency to apply Anti-Monopoly Law to FRAND-encumbered patent licensing cases. This could possibly be a relatively new strategy of the government to lower licensing fees through laws and regulations.

5.1.8 Summary of voluntary licensing regulations in the target countries

The most widely adopted international law with regard to technology licensing is the TRIPS Agreement. Although TRIPS led to an unprecedented level of harmonization of domestic IP law[1200], it did not substantially harmonize licensing regulations. It instead provides broad discretion to the member states with regard to national licensing regulations.

The draft ToT code failed to become the code of conduct at the end of the day. However, many of its aspects were included in technology transfer regulations in developing countries. Since in many cases developing countries have licensing related laws and regulations that makes it mandatory for parties to choose their domestic law as the governing law, or at least to comply with the mandatory articles of their law, the endeavor to protect the developing country's enterprises from being extorted through licensing regulation has been largely accomplished.[1201]

[1199] Diane Bartz, *Apple sues Qualcomm in Beijing Seeking 1 billion yuan*, REUTERS (Jan. 25, 2017, 1:07 PM), http://www.reuters.com/article/us-apple-qualcomm-china-idUSKBN159264. (last visited Mar. 31, 2017)

[1200] ANNETTE KUR, *From Minimum Standards to Maximum Rules*, *in* TRIPS PLUS 20: FROM TRADE RULES TO MARKET PRINCIPLES: 2016 (Hanns Ullrich et al. eds., Springer-Verlag Berlin and Heidelberg GmbH & Co. K 2016).

[1201] The issue with enforcement still remains, but this is outside the scope of this dissertation.

Now the remaining issue is to balance the protection of local industries while encouraging technology transfer. Japan and China once had stringent regulations but they gradually loosened up in order to allow more flexibility in contracts. Japan does not have any licensing regulations apart from one from an antitrust perspective, and China is considering another revision of its regulations, which would further liberalize the regulations.

Ghana has yet to revise its licensing policy, and has very strict regulations at the moment. It is understandable because Ghanaian industry is weaker than China (or Japan's in the 1970s, when Japan shifted towards liberalization). However, this defensive attitude may prove to be an obstacle to development. Overprotecting national companies from being extorted does not always help a nation to become industrialized. A strategic allocation of resources is necessary to import technologies best suited for development, and the importation of "useful" technologies should be encouraged. Japan realized it through the control of influx of technology, and Ghana could do the same. In this regard, the Philippines has an interesting article in their Intellectual Property Code §91, which authorizes the Documentation, Information and Technology Transfer Bureau to exempt the parties from the requirements when "substantial benefits will accrue to the economy, such as high technology content, increase in foreign exchange earnings, employment generation, regional dispersal of industries and/or substitution with or use of local raw materials" based on a case by case analysis. This may be something of reference value.

5.2 Compulsory licensing

Compulsory license is a license granted by the government without the consent of the patentee.[1202] It is discussed often in the context of IP law and development especially for pharmaceutical goods. However, the potential scope of compulsory licensing extends beyond that. Many developed countries including Japan, the United States and Germany have provisions for compulsory licensing and some governments occasionally utilize it

[1202] The WTO defines compulsory licensing in a similar manner. *See* World Trade Organization, *Intellectual property (TRIPS) - TRIPS and public health: Compulsory licensing of pharmaceuticals and TRIPS*, https://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm. (last visited Aug. 28, 2016).

as a remedy to anticompetitive conduct or to address other public interest issues[1203].

Compulsory licenses are mere permissions to use a patented technology[1204] without the owner's consent. Therefore the rights are not taken away from the licensor. However the licensing fees granted are typically low, and therefore the patent holder is less likely to maximize their benefit compared to a voluntary license. This is why compulsory licenses could work as a "big stick" that threatens a potential licensor to sit at the same table with the licensees.[1205]

While in some cases the prices of products produced or imported under a compulsory license is lower than internationally procured medicine without a compulsory license, a recent study[1206] suggests that this is not always the case, especially because of numerous initiatives by private and public actors to lower the prices of pharmaceuticals for humanitarian purposes. In 19 cases out of 30 cases, internationally procured medicine was cheaper than medicine produced under a compulsory license, when compared within the same period of procurement.[1207] The justification of compulsory licensing based on the need to lower the price of pharmaceuticals has become weaker in the past few years.

5.2.1 Compulsory licensing under TRIPS

The TRIPS negotiations regarding compulsory licensing experienced several

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[1203] For U.S. examples *see* Knowledge Ecology International (KEI), KEI RESEARCH NOTE: RECENT UNITED STATES COMPULSORY LICENSES MARCH 7, 2014 (2014) http://keionline.org/sites/default/files/Annex_A_US_Compulsory_Licenses_7Mar2014_8_5x11.pdf.

[1204] A Krattiger et al., *Compulsory Licensing: How to Gain Access to Patented Technology Editor's Summary, Implications and Best Practices*, *in* IP HANDBOOK OF BEST PRACTICES (Anatole Krattiger ed.).

[1205] *See* Philipp Maume, *Compulsory Licensing in Germany*, *in* COMPULSORY LICENSING: PRACTICAL EXPERIENCES AND WAYS FORWARD (Reto M. Hilty & Kung-Chung Liu eds., Springer-Verlag Berlin and Heidelberg GmbH & Co. K 2014). 2

[1206] R. F. Beall et al., *Compulsory licensing often did not produce lower prices for Antiretrovirals compared to international procurement*, 34 HEALTH AFFAIRS 493–501 (2015).

[1207] *See supra* note 1206 496

impasses as there were major differences even among developed countries.[1208] The big picture was that developing countries required looser conditions on granting compulsory license and the developed country required stricter rules. However, for several occasions, the United States argued for less restrictions for government use, as discussed below. Japan has argued for the grant of compulsory licenses to the "second patent" holders whereas the United States have disagreed. These disagreements among developed countries complicated the negotiations. However, compromises were made in the end. Considering that this issue has been discussed since the 1970s in WIPO, this agreement was a significant achievement.[1209]

Article 31 of the agreement (Other Use Without Authorization of the Right Holder) provides a detailed standard to which national legislations should comply. This article covers compulsory licensing in a narrow sense, namely when the license is granted to a third party by the government, but also in a broader sense, namely when the technology can be legitimately used without the consent of the licensor.

The Agreement takes a "condition approach" [1210] in determining under circumstances a compulsory licensing can be granted, in contrast to a "grounds approach" which determines the grounds on which a compulsory license can be granted. The grounds approach was asserted by the U.S., Japan, Switzerland and Australia, who all feared that compulsory licenses could be granted based on public interest grounds which they considered to have the risk of unclear and abusive application of national compulsory licensing regulations. However, the EU did not support this position possibly because some of their member states allowed the grant based on public use. The United States ultimately decided to abandon its position because of the difficulty of justifying government use as one of the grounds but rejecting public interest grounds as they initially intended.

Article 3 (a) states that the authorization should be considered on its individual

[1208] *See supra* note 803 145

[1209] *See supra* note 803 144-145

[1210] For semiconductor technologies, the grounds are limited to public non-commercial use or anticompetitive practices of patent holders. (TRIPS Agreement art.3 (c))

merits, but the authorization could be granted not only for individual patented inventions but also for inventions in a particular field.

Article 3 (b) requires previous efforts of the licensee to negotiate for voluntary authorization by the licensor. This is not applied to "cases of a national emergency, or other circumstances of extreme emergency or in cases of public non-commercial use." In emergency situations it suffices to inform the right holder as soon as reasonably possible. For public non-commercial use, the patent holder should be informed of the use, granted "the government or contractor knows or has demonstrable grounds to know that a valid patent is or will be used by the government". For public non-commercial use, the U.S. assertions were based on its own practice not to require a patent search for governments, and this was accepted.[1211] However, for all cases, the right holder is entitled to adequate remuneration (h).

The scope and duration of the license is limited to the purpose for which it was authorized under Article 3 (c). This would mean that the licensee is limited in terms of what they can do with the license. In a hypothetical case where an invention can be used to treat both disease A and B and a compulsory license is granted to produce medicine to cure disease A, the licensee cannot produce medicine which is aimed exclusively at curing disease B with that license.

The use should also be non-exclusive, despite the assertions of developing countries during the negotiations that the licensees cannot compete with the patent holders in the market. The non-exclusivity of a compulsory license in that context seems to be a sound argument considering that an exclusive compulsory licensing would be similar to a confiscation of the patent with the differences being that the termination of the compulsory license is possible under certain circumstances and the scope is limited to a particular purpose. The termination of the authorization to use without the right holder's consent is liable "to be terminated if and when the circumstances which led it to cease to exist and are unlikely to recur (Article 3 (g)). The use shall be non-assignable (Article 3 (e)) and should be predominantly to supply to the domestic market (Article 3 (f)).

Note that (f) allows imports for supplying to the domestic market as well as

[1211] *See supra* note 803 149

production. [1212] This would imply that, even when countries allow only national exhaustion, the patentee could be prohibited from exercising rights to a third party who imports products once put on the market by the consent of the patent holder in the exporting country.

When the permission to use the invention without the right holder's consent is granted "to remedy a practice determined after judicial or administrative process to be anticompetitive", the prior negotiation requirement (b) and the domestic market use restriction (f) are waived. This means that the authorities can permit the use of the invention without prior negotiation and for exportation. The application of (h) which states that the right holder shall be entitled to adequate remuneration is not waived[1213], however "the need to correct anticompetitive practices may be taken into account in determining the amount of remuneration in such cases." [1214]

For permission to use the "first patent" necessary to implement the "second patent" of a third party, the second patent should "involve an important technical advance of considerable economic significance" (l)(i) and the owner of the first patent is entitled to a cross license of the second patent on reasonable terms (ii). The license to use the first patent is non-transferrable except with the assignment of the second patent (iii).

The legal validity of the authorization of use and the remuneration for the use shall be subject to independent review by a "distinct higher authority" of the jurisdiction (i)(j), however the review is considered to be under the discretion of the authorities.[1215]

5.2.2 The Doha Declaration

The "Declaration on the TRIPS agreement and Public health" (Hereinafter "the Doha Declaration") was adopted on November 14th of 2001 at the Doha WTO Ministerial in order to address the issue of hindered access to essential medicines in developing

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[1212] *See supra* note 803 152.

[1213] Some countries argued that (h) should be also waived but the negotiating states agreed not to exclude (h) but to insert the second sentence in order to lower the amount of remuneration or to deny remuneration.

[1214] TRIPS Agreement art.31 (k)

[1215] *See supra* note 803 153

countries.

5.2.2.1 Background of the Declaration

In the past, developing countries had more flexibility in the way they defined patentable subject matters. In China, for example, pharmaceuticals became patentable only in 1992.[1216] In Japan, product patents for pharmaceuticals were allowed only after 1976. [1217] Before that, process patents were only allowed for pharmaceuticals under the 1956 Patent Act.[1218]

The situation was changed by the TRIPS Agreement. As the Agreement requires all "inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application."[1219] The exception is allowed for "diagnostic, therapeutic and surgical methods for the treatment of humans or animals" [1220], "plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes" [1221] and "the prevention within their territory of the commercial exploitation of which is necessary to protect ordre public or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment" [1222]. This meant that pharmaceutical inventions became patentable.

Note that for least developed countries, exemption is allowed. On November 6th, 2015, The TRIPS Council agreed that the exemption is extended until 2033.[1223]

[1216] Jacqueline Lui, *Patenting biotechnology inventions in China: Abstract: Nature Biotechnology*, Nature Biotechnology 19 83–84 (2001).

[1217] Reiko Aoki et al., *Special theme – intellectual property rights and public health perspectives patent policy and public health in developing countries: Lessons from Japan*, BULLETIN OF THE WORLD HEALTH ORGANIZATION, May 2006, 84 (2006).

[1218]Kenta Kosaka, *The Impact of Revisions of the Patent System on Innovation in the Pharmaceutical Industry*, IIP BULLETIN 2012 Vol.21 (2012).

[1219] TRIPS Agreement art.27 Patentable Subject Matter 1

[1220] TRIPS Agreement art.27 Patentable Subject Matter 3(a)

[1221] TRIPS Agreement art.27 Patentable Subject Matter 3(b)

[1222] TRIPS Agreement art.27 Patentable Subject Matter 2

[1223] World Trade Organization, *2015 news items - WTO members agree to extend drug patent exemption for poorest members*,

The "forced" introduction of patent coverage for pharmaceuticals triggered massive complaints from developing countries. Especially when there arose cases where developing countries were pressured to abandon TRIPS-compliant measures taken for public health reasons[1224], demands for confirmation of the rights of developing countries to take advantage of the "TRIPS-flexibilities" arose.[1225]

This problem became particularly serious for developing countries without pharmaceutical production capabilities for the following reason. As mentioned above, compulsory licenses can only be granted for the purpose of predominantly producing for the local market, making affordable imports difficult. Although developing countries could grant compulsory licensing to importers, the available imports on the international markets may be unaffordable for the people in need.

5.2.2.2 The content of the Declaration

The Doha Declaration is a result of two TRIPS council meetings and was intended to address this issue of access to medicine for the underprivileged in developing countries. In the declarations, the members agreed that "the TRIPS agreement does not and should not prevent Members from taking measures to protect public health". [1226] It affirmed the discretion of developing countries to the right of using, "to the full, the provisions in the TRIPS agreement, which provide flexibility for this purpose".

In Paragraph 5, the TRIPS flexibilities were confirmed. The lists are not meant to be comprehensive but rather illustrative ("these flexibilities include"[1227]).

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https://www.wto.org/english/news_e/news15_e/trip_06nov15_e.htm. (last visited Aug. 28, 2016).

[1224] As an example, South Africa's Medicines and Related Substances Control Amendment Act of 1997 was pressured by the USTR despite their TRIPS-compatibility.

[1225] Carlos Correa & Duncan Matthews, THE DOHA DECLARATION TEN YEARS ON AND ITS IMPACT ON ACCESS TO MEDICINES (United Nations Development Programme 2011). at 6

[1226] World Trade Organization, Ministerial Declaration of 14 November 2001, WTO Doc. WT/MIN (01)/DEC/2 (2002) [hereinafter Doha Declaration]. Para 4

[1227] Doha Declaration Para 5, underlined by the author

5. accordingly and in the light of Paragraph 4 above, while maintaining our commitments in the TRIPS agreement, we recognize that these flexibilities include:

a. in applying the customary rules of interpretation of public international law, each provision of the TRIPS agreement shall be read in the light of the object and purpose of the agreement as expressed, in particular, in its objectives and principles.

b. each Member has the right to grant compulsory licences and the freedom to determine the grounds upon which such licences are granted.

c. each Member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency, it being understood that public health crises, including those relating to HIV/AIDS, tuberculosis, malaria and other epidemics, can represent a national emergency or other circumstances of extreme urgency.

d. The effect of the provisions in the TRIPS agreement that are relevant to the exhaustion of intellectual property rights is to leave each Member free to establish its own regime for such exhaustion without challenge, subject to the MFN and national treatment provisions of articles 3 and 4.

Another important content of the Doha Declaration was Paragraph 6, which intended to address the issue of access to essential medicines for countries without sufficient pharmaceutical production capabilities.

"We recognize that WTO Members with insufficient or no manufacturing capacities in the pharmaceutical sector could face difficulties in making effective use of compulsory licensing under the TRIPS Agreement. We instruct the Council for TRIPS to find an expeditious solution to this problem and to report to the General Council before the end of 2002."

This paragraph, the "Doha Assignment", demanded the Council to find a solution to the issue. The Council was unable to meet this deadline but could put forward a solution in August 2003. This decision titled "Implementation of paragraph 6 of the Doha Declaration on the TRIPS Agreement and public health" waives the obligations under Article 31(f) of the TRIPS Agreement and allows the grant of compulsory licenses aiming

at exporting to least developed countries and any other country that has notified the WTO of its intention to use the system as an importer. [1228]

Least developing countries are regarded as having no production capability of pharmaceutical products, but other countries need to establish that they have no manufacturing capability or the current capability is insufficient to meet its needs. [1229]

The conditions for the waiver is that the importing member notifies the TRIPS council specifying the names and expected quantities of the product(s) needed and confirming that "it has granted or intends to grant a compulsory licence in accordance with Article 31 of the TRIPS Agreement and the provisions of this Decision (6)."[1230]

The exporting Member shall notify the Council of the grant and the conditions of the license. The notification shall include "the name and address of the licensee, the product(s) for which the licence has been granted, the quantity(ies) for which it has been granted, the country(ies) to which the product(s) is (are) to be supplied and the duration of the licence".[1231]

The compulsory license issued by an exporting member shall be limited to the amount which is needed in the importing member and the entirety of the produced medicine must be exported to the importing member. The products must be made distinguishable as made under the license. The licensee shall post online concerning the quantities supplied and the distinctive features of the product. [1232] Adequate remuneration to the patent holder shall be paid in the exporting Member. [1233]

In addition to the allowance of the aforementioned waiver, technology transfer in order to enhance capabilities in developing countries have been encouraged.[1234]

The Decision stated that an amendment to the TRIPS agreement shall be made by

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[1228] Implementation of paragraph 6 of the Doha Declaration on the TRIPS Agreement and public health, Decision of the General Council of 30 August 2003, WTO Doc. WT/L/540 and Corr.1 [hereinafter Implementation of the Doha Declaration] 2

[1229] Annex, Implementation of the Doha Declaration

[1230] Implementation of the Doha Declaration 2

[1231] Implementation of the Doha Declaration 2

[1232] Implementation of the Doha Declaration 2

[1233] Implementation of the Doha Declaration 3

[1234] Implementation of the Doha Declaration 7

June 2004 and the General Council of TRIPS decided on Dec. 6th 2005 on the amendment of TRIPS article 31 (f) by adding article 31 bis.[1235] The waiver was temporary[1236] until the amendment finally took effect on January 23, 2017.[1237]

17 countries and regions including the EU, Switzerland and India have revised their laws to take necessary measures required by the amendment.[1238] Apart from the 17 countries, Japan has reported to the TRIPS Council that its current domestic laws provide legal basis as an exporter.[1239]

5.2.3 TRIPS Plus and compulsory licensing

TRIPS Plus clauses typically do not specifically affect the discretion of developing countries to grant compulsory licensing.[1240] There exists a possibility that

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[1235] Amendment of the TRIPS Agreement, Decision of the General Council on 6 December 2005, WTO Doc. WT/L/641

[1236] World Trade Organization, *NEWS - decision removes final patent obstacle to cheap drug imports - press 350*, https://www.wto.org/english/news_e/pres03_e/pr350_e.htm. (last visited Aug. 29, 2016). *See also supra* note 1225 11

[1237] World Trade Organization, *Intellectual property (TRIPS) and public health: Members accepting amendment*, https://www.wto.org/english/tratop_e/trips_e/amendment_e.htm. (last visited Mar. 6, 2017).

[1238] World Trade Organization, *TRIPS — national implementing legislation for par.6 system*, https://www.wto.org/english/tratop_e/trips_e/par6laws_e.htm. (last visited Aug. 29, 2016).

[1239] *See supra* note 1238

[1240] Some FTAs have a clause that takes the "grounds approach", restricting the grant of compulsory licenses based on the grounds, rather than based on the conditions of grant. One example is the U.S.-Jordan FTA. It restricts the grant of compulsory licenses to situations to the following purposes: anticompetitive practices, public non-commercial use or national emergency, failure to meet working requirements, provided that importation constitutes working. However, this merely reiterates the patent law in force at the time in Jordan. Other examples of such clauses are seen in U.S.-Singapore and U.S.-Australia FTAs. However, these two countries are not developing countries and are not a focus of consideration here. *See* Jean Frederic Morin, *Tripping up TRIPS debates IP and health in bilateral agreements*, INT. J. INTELLECTUAL PROPERTY MANAGEMENT, Vol. 1, Nos. 1/2, 2006 37 (2006). 46-47. *See* also, Carlos M. Correa, *The Use of*

enhanced data protection would lead to hindering the pharmaceutical product manufactured under compulsory licensing through preventing the licensee from using the data necessary for market approval.[1241] Some countries have attempted to address this issue through side letters or other documents attached to the FTA.[1242] While these documents tend to be indirect in terms of content, the Chilean IP law goes further by clarifying that data protection does not apply when the product is subject to a compulsory license.[1243]

5.2.4 Compulsory licensing in Japan

In Japan, non-voluntary licenses have never been granted. However, the patent act provides for compulsory licensing.

5.2.4.1 Grant of compulsory license

When the request for compulsory license is filed based on Article 83 or 92, the Commissioner of the Patent Office shall notify the "the patentee or exclusive licensee pertaining to the request, or any other person having a registered right pertaining to the patent" and give an opportunity to submit a written answer within a designated time frame.[1244]

For non-voluntary licenses based on Article 83, it shall not be granted when an adequate reason for the non-implementation is filed.[1245] In granting a compulsory license based on Article 83 and Article 92, the opinions of institutions provided by the Cabinet Order[1246] must be heard.[1247]

Compulsory Licences in Latin America, *in* COMPULSORY LICENSING: PRACTICAL EXPERIENCES AND WAYS FORWARD (Reto M. Hilty & Kung-Chung Liu eds., Springer-Verlag Berlin and Heidelberg GmbH & Co. K 2014). 46

[1241] *See supra* note 1240

[1242] *See supra* note 1240

[1243] *See supra* note 1240

[1244] Patent Act art.84, art.92(7)

[1245] Patent Act art.85(2)

[1246] Organs provided in art.8 of Kokka Gyōsei Soshikihō [National Government Organization Act](1948)

[1247] Patent Act art.85, art.92(7), art.93(3)

The award of the license shall be in writing with reasons attached.[1248] The award shall state the scope of the license and the amount of remuneration and the method and time of payment.[1249]

When the grounds of the award ceases to exist or due to some other reasons the award is rendered inappropriate, or when the licensee does not adequately implement the invention, the Commissioner may either upon request of an interested party or ex officio, rescind the award.[1250]

5.2.4.2 Grounds

The Patent Act provides three grounds for the grant of a non-voluntary license – non-continuous and insufficient (or non-) working of the invention,[1251] when the implementation of one's patented invention requires the implementation of another's patent,[1252] or when the implementation of the patented technology is particularly necessary for the public interest.[1253]

When the ground for the grant is the necessity to implement the patent for the implementation of one's own patent, the holder of the first patent can request a license to the second patent.[1254] The owner of the first patent in return could request a license from the second patent owner. If the parties cannot negotiate or cannot reach an agreement, the second patent owner can request the Commissioner of the Patent Office for an award.[1255] The owner of the first patent can, during the period designated by the Commissioner, request an award for the second patent as well. [1256]

5.2.4.3 Conditions

For the grant of a non-voluntary license based on Article 83, at least 4 years

[1248] Patent Act art.86, art.92(7), art.93(3)
[1249] Patent Act art.86, art.92(7), art.93(3)
[1250] Patent Act art.90, art.92(7), art.93(3)
[1251] Patent Act art.83
[1252] Patent Act art.92
[1253] Patent Act art.93
[1254] Patent Act art.92 (2)
[1255] Patent Act art.92 (3)
[1256] Patent Act art.92 (4)

shall have lapsed from the filing date of the patent application.[1257] Prior to the request for an award to the Commissioner of the Patent Office (in the case of a grant based on Article 93, the Minister of Economy, Trade and Industry), discussions shall be made between the prospective licensee and the patent owner.[1258] When the discussions cannot be held or an agreement cannot be made, the prospective licensee may request an award.[1259]

For the grant of a non-voluntary license based on Article 92, the Commissioner may not grant a license when the granting of the award will be unreasonably prejudicial to interest of the first patent holder, the patentee or the exclusive licensee.[1260]

5.2.4.4 Scope of the license

The scope of the license is determined by the award, which shall determine the amount of remuneration and the method and time of payment.[1261]

5.2.4.5 Compulsory licensing under Article 31bis

Concerning TRIPS Agreement Article 31bis, the Japanese Delegation of the WTO has stated their position that the Japanese Patent Act and The Guideline for Administering Award System constitutes a legal basis for granting compulsory licensing and fulfills international obligations under Article 31bis.[1262]

5.2.5 Compulsory licensing in the EU

The TFEU Article 101 prohibits anticompetitive agreements[1263], whereas Article

[1257] Patent Act art.83 (1)

[1258] Patent Act art.83 (1), Patent Act art.92 (1) art.93(1)

[1259] Patent Act art.83 (2) Patent Act art.92 (3) art.93(2)

[1260] Patent Act art.92 (5)

[1261] Patent Act art.86, art.92(7), art.93(3)

[1262] Roger Kampf, *Special Compulsory Licences for Export of Medicines: Key Features of WTO Members' Implementing Legislation*, WTO STAFF WORKING PAPER, No. ERSD-2015-07 at 7

[1263] TFEU art.101. The following shall be prohibited as in compatible with the internal market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have

102 prohibits abuse of dominant position[1264]. Compulsory licenses are granted only based on competition grounds at the EU level, and for other grounds only national authorities may grant compulsory licenses.

National laws have their compulsory licensing related articles. At a national level, some countries such as Belgium and France have amended their patent law to allow compulsory licensing in biotech and diagnostic technologies.[1265] Italy has granted several compulsory licenses in the past years based on competition law.[1266]

On August 31st, 2016, the German Federal Patent Court granted a compulsory license on an HIV medicine patent owned by Shionogi & Company Ltd.[1267] The Court previously granted a compulsory license once in 1991[1268], but it was overturned by the Federal Court of Justice.

The facts of the case were as follows. Shionogi owned a patent, which was allegedly infringed by Merck & Co., through the sales of Isentress, a medicine that prevents the increase of the HIV virus in the patients' body.[1269] There are other medicines with similar effects, but Isentress worked even against multi-drug resistant viruses and for patients who could not tolerate other drugs.

Upon being sued for infringement by Shionogi, Merck attempted to obtain a

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as their object or effect the prevention, restriction or distortion of competition within the internal market….

[1264] TFEU art.102. Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States.

[1265] James Packard Love, *Recent examples of the use of compulsory licenses on patents*, (2007) 8-11

[1266] *See supra* note 1265 10-11

[1267] BPatG, (interim) Judgment of Aug. 31, 2016, Case 3LiQ 1/16 (EP)

[1268] BPatG, Judgment of Jun. 7, 1991, Case 3 Li 1/90, reversed by BGH, Judgment of Dec. 5, 1995, Case X ZR 26/92. *See also*, World Intellectual Property Organization, *Questionnaire on exceptions and limitations to patent rights*, http://www.wipo.int/scp/en/exceptions/replies/germany.html. (last visited Jan. 27, 2017).

[1269] Benjamin Beck & Ulrich Worm, German federal patent court grants compulsory license on HIV drug patent, http://www.lexology.com/library/detail.aspx?g=b184288a-87ce-44ec-9c1c-fccd32fc7041. (last visited Jan. 20, 2017).

license for the use of the patent, thus partially fulfilling the requirements to ask for a compulsory license[1270]. Shionogi rejected their offer and continued to seek an injunction. In response, Merck made an action for the provisional grant of a compulsory license of the patent. The Federal Patent Court held that there exists a public interest and granted the motion for a provisional compulsory license.[1271]

5.2.5.1 Grant of compulsory licensing

The European Commission investigates cases and may take binding decisions to prohibit a certain conduct, require remedial action or impose fines in cases of (potential) violation of EU rules.[1272] Compulsory licensing can be granted as a part of the decision.[1273] The decision can be appealed to the General Court, and if either party is left dissatisfied they could appeal further to the European Court of Justice.[1274] The appeal to the ECJ is limited to questions of law.

[1270] Section 24(1) The non-exclusive authorisation to commercially use an invention shall be granted by the Federal Patent Court in an individual case in accordance with the following provisions (compulsory licence) where
1. a licence seeker has, within a reasonable period of time, unsuccessfully attempted to obtain permission from the proprietor of the patent to use the invention on reasonable commercial terms and conditions…

[1271] See supra note 1267

[1272] European Commission, *Competition: Opening markets to competition - European commission*, http://ec.europa.eu/competition/general/overview_en.html. (last visited Sep. 12, 2016).

[1273] For example, *see* 89/205/EEC: Commission Decision of 21 December 1988 relating to a proceeding under art.86 of the EEC Treaty (IV/31.851 - Magill TV Guide/ITP, BBC and RTE). In this case, the addressees of the decision appealed to the EU Court of First Instance (now renamed as General Court) and finally to the European Court of Justice.

[1274] *See* European Commission, *Antitrust: Overview – competition - European commission*, http://ec.europa.eu/competition/antitrust/procedures_101_en.html. (last visited Sep. 12, 2016). *See* also, European Commission, *Antitrust: Overview – competition - European commission*, http://ec.europa.eu/competition/antitrust/procedures_102_en.html. (last visited Sep. 12, 2016).

5.2.5.2 Grounds

At the EU level, only competition law violations are permissible grounds for compulsory licensing. With regard to compulsory licenses for grounds other than anticompetitive behavior, the EU Commission made a statement, answering a Parliamentary question, that "[n]ational patent laws deal….with compulsory licenses" and "[i]t is for each individual Member State to interpret its national patent law provisions and to assess whether the applicable conditions for exceptions and limitations apply." [1275]

5.2.5.3 Conditions

The Commission starts an investigation when a complaint or a leniency application is filed, or on its own initiative.[1276] When a violation of TFEU Articles 101 or 102 is to be found, a compulsory license could be granted if necessary.

5.2.5.4 Scope of the license

The scope of license is determined by the decision of the Commission or the appellate courts.

5.2.5.5 Compulsory licensing under Article 31bis

Following the Doha Declaration adopted at Fourth Ministerial Conference of the WTO, the European Parliament and the Council of the EU set up a compulsory licensing system in order to address public health problems in the least developing countries.[1277]

The application for a compulsory license could be performed by anybody.[1278]

[1275] PARLIAMENTARY QUESTION E-004613015, MARCH 24, 2015, ANSWER JUNE 23, 2015, available at http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+WQ+E-2015-004613+0+DOC+XML+V0//EN&language=EN (Question) and http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2015-004613&language=EN (Answer)

[1276] European Commission, *Procedures in anticompetitive agreements (art.101 TFEU cases)* http://ec.europa.eu/competition/antitrust/procedures_101_en.html

[1277] Regulation (EC) No 816/2006 of the European Parliament and of the Council of 17 May 2006 on compulsory licensing of patents relating to the manufacture of pharmaceutical products for export to countries with public health problems (hereinafter "Regulation on compulsory licensing")

[1278] Regulation on compulsory licensing (2006) art.6

Eligible importing members are a) any least-developing country as defined by the UN, b) a member state of the WTO which notified the Council of TRIPS of its intention to use the system as an importer, or c) a non-WTO member who made a notification to the Council.[1279] The application has to be submitted to competent authorities[1280] of individual states.[1281]

The grounds are limited to public health problems in eligible importing countries that require the importation of pharmaceutical products.[1282]

The conditions are that the applicant negotiates with the right holder prior to the application, apart from "national emergency or other circumstances of extreme urgency or in cases of public non-commercial use under Article 31(b) of the TRIPS Agreement".[1283] The right holder shall be notified of the application and be given a right to comment on the application and to provide relevant information.[1284] A compulsory license for import, sale and/or distribution must be issued in the recipient country.[1285] The license is subject to review upon the request of parties.[1286] If the conditions are not respected, the license can be terminated by the competent authority or appellate authorities.[1287]

The license shall be a non-exclusive and non-assignable license[1288] and amount of the manufactured products shall be limited to what is necessary to meet the needs of designated countries[1289]. Exports of products are forbidden unless allowed by the WIPO

[1279] Regulation on compulsory licensing (2006) art.4

[1280] Regulation on compulsory licensing (2006) art.2(4) 'competent authority' for the purposes of Articles 1 to 11, 16 and 17 means any national authority having competence to grant compulsory licences under this Regulation in a given Member State.

[1281] Regulation on compulsory licensing (2006) art.6

[1282] Regulation on compulsory licensing (2006) art.1

[1283] Regulation on compulsory licensing (2006) art.9

[1284] Regulation on compulsory licensing (2006) art.7

[1285] Regulation on compulsory licensing (2006) art.10.7

[1286] Regulation on compulsory licensing (2006) art.16.1

[1287] Regulation on compulsory licensing (2006) art.16.1

[1288] Regulation on compulsory licensing (2006) art.10.1

[1289] Regulation on compulsory licensing (2006) art.10.2

General Council Decision on Implementation of Paragraph 6 of the Doha Declaration on the TRIPS Agreement and Public Health[1290], which sets exemptions for the prohibition of exports of pharmaceuticals produced under a compulsory license for member states of regional trade agreements of which at least half of the members are least developed countries. Importation into the Community is prohibited.[1291]

The royalties are determined by the competent authorities "taking into account the economic value of the use authorised under the licence to the importing country or countries concerned, as well as humanitarian or non- commercial circumstances relating to the issue of the licence." However, for circumstances of urgency or non-commercial use, the maximum royalty is 4% of the total price to be paid by the importing country.[1292] The duration must also be stated in the license.

5.3.5 Compulsory licensing in Ghana

5.3.5.1 Grant of compulsory licenses

Under the current Ghanaian Patent Act (2003), the articles concerning use of IP without the consent of the right holder are Sections 13 and 14. They are both TRIPS compliant. Section 13 concerns compulsory licensing initiated by the government. Section 14 concerns compulsory licensing initiated by private parties. The grounds for

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[1290] Implementation of Doha Declaration 6. (i) "where a developing or least-developed country WTO Member is a party to a regional trade agreement within the meaning of art.XXIV of the GATT 1994 and the Decision of 28 November 1979 on Differential and More Favourable Treatment Reciprocity and Fuller Participation of Developing Countries (L/4903), at least half of the current membership of which is made up of countries presently on the United Nations list of least developed countries, the obligation of that Member under Article 31(f) of the TRIPS Agreement shall be waived to the extent necessary to enable a pharmaceutical product produced or imported under a compulsory licence in that Member to be exported to the markets of those other developing or least developed country parties to the regional trade agreement that share the health problem in question. It is understood that this will not prejudice the territorial nature of the patent rights in question"

[1291] Regulation on compulsory licensing (2006) art.13 1.

[1292] Regulation on compulsory licensing (2006) 10 9. (a)

granting these two sections are different.

5.3.5.1.1 Section 13 based compulsory licenses

For Section 13 based compulsory licenses, the Minister may decide that a Government agency or a third party may exploit the patent when the grounds are met.[1293] The use is subject to adequate remuneration determined by the Minister, who decides by taking into account the economic value and the need to correct anticompetitive practices (when the grounds of the grant are anticompetitive practice).[1294] The Minister shall decide whether or not to authorize the use after hearing the owner and interested third parties when this person so wishes.

The minister may change the terms of the authorization to "the extent that changed circumstances justify the variation"[1295] and also terminate the authorization when the circumstances that justified the granting have "ceased to exist and are unlikely to recur", or the authorized implementer has "failed to comply with the terms of the decision".[1296] However, when the authorized implementers' legitimate interest needs to be adequately protected, the Minister shall not terminate the authorization.[1297] The authorization is transferrable only with the enterprise or business or a part of the enterprise or business in which the said invention is implemented.[1298]

Even after the authorization is granted, the patent holder may grant a voluntary license[1299] and may continuously exercise the rights under section 11(2)[1300].

[1293] Patent Act§13 (1)

[1294] Patent Act§13 (2)

[1295] Patent Act§13 (4)

[1296] Patent Act§13 (5)

[1297] Patent Act§13 (6)

[1298] Patent Act§13 (7)

[1299] Patent Act§13 (8)(a)

[1300] Patent Act§13 (8)(b)

Section (2) For the purposes of this section, "exploitation" of a patented invention means any of the following acts

(a) where the patent has been granted in respect of a product:

(i) making, importing, offering for sale, selling and using the product; or

(ii) stocking the product for the purposes of offering for sale, selling or using;

5.3.5.1.2 Section 14 based compulsory licenses

Section 14 based compulsory licenses could be applied for by an entity who wishes a license to implement a patented technology.[1301] A non-voluntary license will be granted by the court if there are sufficient grounds for the grant.[1302] The license shall state the "(a) the scope and function of the licence, (b) the time limit within which the licensee shall begin to exploit the patented invention, and (c) the adequate remuneration to be paid to the owner of the patent and the conditions of payment."[1303]

5.3.5.1.3 Grounds

Section 13 (Exploitation by Government or Authorized Persons) sets out the grounds, the scope and procedures for deciding for the exploitation by the government or other authorized persons.

The permissible grounds are one of the following (underlined by the author):

(a) public interest, in particular, national security, nutrition, health or the development of other vital sectors of the national economy so requires, or

(b) a judicial or administrative body has determined that the manner of exploitation, by the owner of the patent or the owner's licensee, is anti-competitive, and the Minister is satisfied that the exploitation of the invention in accordance with this subsection would remedy that practice

For semiconductor technology, the grounds are limited to anticompetitive behavior of the patent holder. [1304]

Section 14 provides for non-voluntary licenses on the grounds of insufficient

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(b) where the patent has been granted in respect of a process:
(i) using the process; or
(ii) doing any of the acts referred to in paragraph (a) in respect of a product obtained directly by means of the process.

[1301] Patent Act§14 (6)

[1302] Patent Act§14 (1)(5)

[1303] Patent Act§14 (3)(7)

[1304] Patent Act§13 (12)

exploitation and subsequent innovations. The section provides two grounds for the grant of non-voluntary licenses, insufficient or non-exploitation or subsequent inventions.

For a patented technology to be deemed to be insufficiently exploited, four years from the filing date or three years from the date of grant, whichever period expires later, shall have passed before the request is made to the court.[1305] The implementation could be through locally working the invention or importation.[1306] When the court decides that the exploitation of the patent is insufficient and no circumstances that justify the non-exploitation or insufficient exploitation exists[1307], a non-voluntary license is issued.

The court decision for issuance of the non-voluntary license shall include the "*the scope and function of the license*"[1308], the time limit of the commencement of the exploitation[1309] and the amount of remuneration and the conditions of payment[1310]. The exploitation is to take place in Ghana.[1311]

A non-voluntary license may also be granted in order to enable the use of the "first patent" of a third party necessary to implement the "second patent" which "*involves an important technical advance of considerable economic importance in relation to the invention claimed*" in the first patent.[1312] In this case, the grant of a compulsory license is a ground for the grant of a compulsory license for the second patent granted to the first patent holder when the first patent holder so requests.[1313] Time limits of the license do not have to be specified in this case.[1314]

5.3.5.1.4 Conditions

On applying for authorization, the prospective implementer needs to provide

[1305] Patent Act§14 (1)
[1306] Patent Act§14 (1)
[1307] Patent Act§14 (2)
[1308] Patent Act§14 (3)(a)
[1309] Patent Act§14 (3)(b)
[1310] Patent Act§14 (3)(c)
[1311] Patent Act§14 (4)(a)
[1312] Patent Act§14 (5)
[1313] Patent Act§14 (6)
[1314] Patent Act§14 (7)

evidence that it could not obtain a license under "reasonable commercial terms and conditions and within a reasonable time".[1315] This does not apply when there is a national emergency, but the government still needs to inform the patent holder as soon as reasonably practicable.[1316]

5.3.5.1.5 Scope of the license

For section 13 based compulsory licenses, the scope of the license is "limited to the purpose for which it was authorized".[1317] For section 14 based compulsory licenses, the scope, the function and the time limit is specified in the decision.[1318] The supply of the product manufactured/imported under the authorization shall be predominantly for the domestic market.[1319] The Ghanaian interpretation of this phrase, "predominantly for the domestic market", which exists also in the TRIPS Agreement is that more than half of the product would be supplied for the domestic market.[1320]

5.3.5.1.6 Compulsory licensing under TRIPS Article 31bis

Ghana has its own pharmaceutical industry and it is possible that it will export pharmaceutical products based on TRIPS Article 31bis in the future, although currently there are no such examples.[1321]

Ghana, being a member of Economic Community of West African States (ECOWAS), has two possibilities for exporting products predominantly for the export market. The first is based on Article 31bis3, which allows the export of pharmaceutical products made based on compulsory licenses to countries within a regional trade agreement of which at least half the member states are least developing countries. The second is based on Article 31bis1, which allows the export of pharmaceutical products

[1315] Patent Act§13 (9), Section 14 (10)

[1316] Patent Act§13 (10), Section 14 (10)

[1317] Patent Act§13 (2)

[1318] Patent Act§14 (3)(a)(b)

[1319] Patent Act§13 (11), Section 14 (10)

[1320] Interview with Ms. Grace Isahaque, Chief State Attorney at the Registrar-General's Office, Ghana (Dec. 2015)

[1321] Interview with Ms. Grace Isahaque and Mr. Samuel Anum, Consultant for the Ghana-Swiss IP Project, Ghana (Dec. 2015)

made based on compulsory licenses to be exported to an eligible importing member.

5.3.5.1.7 Example of grant

In 2005, The Ghanaian government granted a compulsory license for the importation of an antiretroviral HIV medicine produced under a compulsory license in India.[1322] The patent holder was GlaxoSmithKline. [1323]

The issuance was on the ground that an outbreak of HIV/AIDS was a national emergency.[1324] The duration of the license was three years.[1325] Although the Ghanaian government offered to pay a reasonable remuneration, GSK did not accept the payment. [1326] The price of the pharmaceutical dropped by 50% as a result of the license.[1327] The license was not extended after the original three year period because the emergency situation had passed within the three years.[1328]

However, this is the only case of a compulsory license being granted and in general the government takes a very cautious approach towards granting them. The reluctance towards the use of the system is due to their belief that technology transfer including know-how is important for the development of their domestic industry.[1329]

5.4.6 Compulsory licensing in China

The statute regarding compulsory licensing is located in Chapter 6 of the Patent Law. Compulsory licenses have never been granted throughout the history of the Chinese patent system since the Patent Law was put into effect in 1985.[1330] However this chapter

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[1322] Samuel Anum, THE USE OF COMPULSORY LICENSES (Regional Seminar for Certain African Countries on the Implementation and Use of Several Patent-Related Flexibilities 2013).

[1323] *See supra* note 1322 10

[1324] *See supra* note 1322 10

[1325] *See supra* note 1322 10

[1326] *See supra* note 1321

[1327] *See supra* note 1322 10

[1328] *See supra* note 1321

[1329] *See supra* note 1321

[1330] *See supra* note 1084 494

has been revised frequently[1331] up to now, which displays the emphasis the government places on the compulsory licensing system[1332]. The compulsory licensing system is a crucial part of the patent system, but the government has maintained a very cautious attitude in actually granting a compulsory license.[1333]

5.4.6.1 Grant of compulsory licenses

Upon application from an eligible entity or individual, the patent administrative department of the State Council[1334] may grant a compulsory license allowing the exploitation of a utility model or a patent based on the grounds listed in the patent act (See following sections "Grounds" and "Conditions").[1335]

When a compulsory license is granted, the right holder shall be notified in time and the license shall be registered.[1336] When the applicant or the right holder is dissatisfied with the decision of the patent administrative department, they may bring a lawsuit at the People's Court within three months from receipt of the notice.[1337]

The licensee must pay a reasonable royalty or, when applicable, abide by relevant international treaties in dealing with the determination of royalties.[1338] If royalties are to be paid, the amount shall be decided by negotiations between the parties.[1339] If the parties fail to reach an agreement, it shall be decided by the patent administrative department of the State Council.[1340] When either or both of the parties are dissatisfied with the decision of the patent administrative department, they may bring a lawsuit at the People's Court within three months from receipt of the notice.[1341]

[1331] The revisions in 1992, 2000 and 2008. *See supra* note 1330 493

[1332] *See supra* note 1084 494

[1333] *See supra* note 1084 494. In an interview conducted with Mr. Hao Ma of CCPIT (*see supra* note 1114), he also confirmed this point.

[1334] "Guowuyuan Zhuanli Xingzheng Bumen".

[1335] Patent Law art.48

[1336] Patent Law art.55

[1337] Patent Law art.58

[1338] Patent law art.57

[1339] Patent law art.57

[1340] Patent law art.57

[1341] Patent law art.58

5.4.6.2 Grounds

In China, compulsory licenses are granted on the following grounds.[1342] Note that for semiconductor technology patents, the permissible grounds are only public interest or anticompetitive behavior. [1343]

Non-implementation or insufficient implementation

Patent Law Article 48 Subsection 1 states that, where "[t]he patentee, after the lapse of 3 full years from the date when patent is granted and after the lapse of 4 full years from the date when a patent application is filed, fails to exploit or to fully exploit its or his patent without any justifiable reason"[1344], it constitutes a ground for the grant of compulsory licenses.

The definition of "fail to exploit" or "fail to fully exploit" determines whether the compulsory license is granted or not. Therefore it was subject to a lot of attention when the phrase was introduced in the law in the 2008 revision.[1345] In order to clarify the definition thereof, the Implementing Regulations of the Patent Law[1346] was revised in 2010. Article 73 (1) states that the manner or scale in which the patent owner or the licensee implements the patented technology does not satisfy domestic needs.

"Manner" here includes the manufacture, importation of patented products, use of patented methods or importation of products produced by a patented method.[1347] "Scale" refers to the quantity manufactured or imported, the size and scope of manufacture.[1348] "Not satisfying the domestic needs" refers to a situation, for example, where there is insufficient quantity of products on the market and prices are overly high. [1349] The insufficiency shall be proved by the applicant of the license upon application.[1350]

[1342] Patent Law art.48-51 lists all the grounds for the grant of a compulsory license.

[1343] Patent Law art.52. The reasons for this limitation is unclear

[1344] Patent Law art.48 (1)

[1345] *See supra* note 1084 503

[1346] Zhuanli fa shishi xize（专利法实施细则） [Implementing Regulations of the Patent Law](Revised 2010)

[1347] *See supra* note 1084 503

[1348] *See supra* note 1084 503-504

[1349] *See supra* note 1084 504

[1350] *See supra* note 1084 504

Act of Monopolizing

Patent Act Article 48 Subsection 2 states that where "[t]he patentee's act of exercising the patent rights is determined to be a monopolizing act and it is to eliminate or reduce the adverse consequences of the said act on competition"[1351], it constitutes grounds for the grant of compulsory licenses.

When the Antimonopoly Law[1352] was introduced in China, there were discussions on the relationship between IP and antimonopoly regulations[1353] Therefore, their first 2008 Antimonopoly law includes a statement with regard to what constitutes an act of monopolization:

Antimonopoly Act Article 55 This Law does not govern the conduct of business operators to exercise their intellectual property rights under laws and relevant administrative regulations on intellectual property rights; however, business operators" conduct to eliminate or restrict market competition by abusing their intellectual property rights shall be governed by this Law.

One of the core ideas of intellectual property rights is to allow the owner some kind of exclusive rights to the subject. Therefore, it is natural that some kind of monopoly occurs as a result of the exercise of the rights. The Anti-Monopoly law, considering this point, does not apply to the exercise of IP rights as long as they do not "abuse" their rights.

Then the issue would be what kind of act would be considered to be an abuse of right. The below-mentioned categories of exercise of their patent rights may be considered as an abuse of right thus would be an act of monopolization, which would constitute a ground for compulsory licensing.

First of all, an agreement concerning patents between competitors could constitute

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[1351] Patent Law art.48 (2)

[1352] Zhonghua Renmin Gongheguo Fanlongduanfa（中华人民共和国反垄断法）[Anti-Monopoly Law of the People's Republic of China] (2008), hereinafter "Antimonopoly Law"

[1353] *See supra* note 1084 506

an abuse of right. For example, if two or more competitors in a field, each of who owns relevant patents, collude by agreeing on fixing the licensing fees, product prices or controls the quantity of the product, this can negatively influence competition.[1354] It could also take the form of market division or exclusion of other parties from the market by collectively denying licenses or the supply of patented products.[1355] These types of agreements involving horizontal agreements are generally regarded by the Anti-monopoly Authority under the State Council as a prohibited act under Article 13[1356] of the Anti-Monopoly law and would be prohibited[1357] ("per se violation"[1358]).

Second, licensors imposing unreasonable conditions upon granting a license such as prohibiting the improvement of the technology by the licensee, imposing unilateral grant-back of the improved technology or to prohibit opposing the validity of the patent may constitute an abuse of IP rights. [1359] These types of vertical agreements are not considered to be "per se violations" but may be regarded by the Anti-monopoly Authority under the State Council as a violation after taking into account all the relevant factors if no legitimate reasons are to be found ("rule of reason").[1360]

Thirdly, tying the purchase of a non-essential product or taking a license for

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[1354] *See supra* note 1084 506

[1355] *See supra* note 1084 509

[1356] Anti-Monopoly Law art.13 Any of the following monopoly agreements among the competing business operators shall be prohibited:
(1) fixing or changing prices of commodities;
(2) limiting the output or sales of commodities;
(3) dividing the sales market or the raw material procurement market;
(4) restricting the purchase of new technology or new facilities or the development of new technology or new products;
(5) making boycott transactions; or
(6) other monopoly agreements as determined by the Anti-monopoly Authority under the State Council.

[1357] *See supra* note 1084 509

[1358] *See supra* note 1084 508

[1359] *See supra* note 1084 509

[1360] *See supra* note 1084 508

unnecessary technology may constitute an abuse of IP rights. [1361] For these types of vertical agreements, the rule of reason applies as well. In considering the existence of violation, three conditions must be met[1362]:

(1) the patent holder has a dominant position in the market

(2) the tied-in products are considered to be two independent products according to trade practice

(3) the tying in actually influences the relevant market.

Lastly, refusal to license without legitimate reasons may constitute an abuse of rights. Considering that an IP gives the right for the owner to exclude others from using, refusing to license in general does not constitute a violation of the Antimonopoly Law. In order for the refusal to be a violation of the Law, the patent holder must have a dominant position in the market and discriminatorily refuse to give a license to a third party, or the subject matter of the requested license is an essential patent in order to compete in the market and the rejection of the license negatively influences the competition and innovation.[1363]

Although the "patentee's act of exercising the patent rights" could include a lot of types of acts such as assignment, licensing or defending their rights in invalidation proceedings, this subsection is considered applicable mainly to licensing agreements, as other acts are not so likely to constitute a monopolizing act.[1364]

National Emergency

Patent Law Article 49 states that, a compulsory license may be granted where "a national emergency or any extraordinary state of affairs occurs, or where the public interest so requires"[1365].

The existence of a national emergency is determined by the State Council.[1366] As

[1361] *See supra* note 1084 509

[1362] *See supra* note 1084 509

[1363] *See supra* note 1084 509

[1364] *See supra* note 1084 507

[1365] Patent Law art.49

[1366] *See supra* note 1084 516

private parties are not eligible to determine whether a certain situation constitutes a national emergency, the applicant, unlike the aforementioned two grounds, cannot be a private party who could implement the technology.[1367]

Reflecting on this point, the State Intellectual Property Office published the "Measures for Compulsory License for Patent Exploitation" in 2003, which allowed the relevant divisions of the State Council to apply for a compulsory license itself.[1368] However, this brought about a new question – can the relevant division of the State Council, without production capabilities, be a licensee itself?[1369] It was suggested that the licensee should be an enterprise designated by the relevant division of the State Council, as both practically and legally the division is not capable to engage in production.[1370]

In order to clarify the decision maker on what constitutes a national emergency and who is eligible as a licensee, the current version of the "Measures for Compulsory License for Patent Exploitation"[1371] states that when a national emergency occurs, the relevant divisions of the State Council may suggest the patent office to issue a compulsory license addressed to an enterprise that could implement the technology.[1372]

The scope of the license based on this ground is considered to be limited in comparison with other grounds. This will be discussed in detail below.

Dependent Patents and Cross-Licenses

Patent Law Article 51 Section 1 states that where "an invention or utility model for which the patent was granted has seen any major technical progress of prominent economic significance when compared with another invention or utility model for which a patent has been granted earlier, and the exploitation of the later invention or utility

[1367] *See supra* note 1084 516

[1368] *See supra* note 1084 516

[1369] *See supra* note 1084 516

[1370] *See supra* note 1084 516

[1371] State Intellectual Property Office, Zhuanli Shixi Qiangzhi Xuke Banfa [专利实施强制许可办法] [Measures for Compulsory License for Patent Exploitation](2012)

[1372] Measures for Compulsory License for Patent Exploitation, art.6

model depends on the exploitation of the earlier one"[1373], a compulsory license may be granted upon request of the prospective licensee. When a license is granted, the licensor may apply for a compulsory license for improvements on the subject matter technology.[1374]

The technical progress needs to be a "major" one, not a mere improvement.[1375] This requirement of a certain amount of significance was introduced in the 2000 revision as TRIPS Article 31(1).[1376]

An interesting question concerning this topic is whether the owner of the basic patent could ask for a compulsory license for the improvement patent without a compulsory license being granted its own basic patent.[1377] Considering that the law explicitly defines the applicability of the article to cases where a compulsory license for the basic patent has granted[1378], it is unlikely that this would be allowed. However, in these cases, it may be that the subsequent patent is not exploited, as the implementation of the basic patent is necessary for the implementation for the subsequent patent. Therefore, the possibility exists of applying Patent Law Article 48 Subsection 1, which allows the grant of compulsory licenses when the patent is not implemented or only insufficiently implemented.

Public Health Issues in Foreign Countries

In the 2008 revision, a new article was added corresponding to the Declaration on the TRIPS agreement and public health (Doha Declaration) and the Amendment of the TRIPS Agreement in 2005 that followed. The Standing Committee of the National People's Congress ratified this Amendment in 2007 and changed the Patent Act accordingly by introducing Article 50 which enables SIPO to grant compulsory licenses for the purpose of export.

[1373] Patent Law art.50

[1374] Patent Law art.50

[1375] Patent Law art.51

[1376] *See supra* note 1084 531

[1377] *See supra* note 1084 531

[1378] Patent Law art.51

Article 50 For the benefit of public health, the patent administration department under the State Council may grant a compulsory license for manufacture of the drug, for which a patent right has been obtained, and for its export to the countries or regions that conform to the provisions of the relevant international treaties to which the People's Republic of China has acceded.

The phrase "public health" is taken from the Doha Declaration.[1379] Although not directly defined, it is sufficiently clear from the first paragraph[1380] of the Declaration that it primarily targets public health problems related to epidemics. However, there are no limitations on the definition on the phrase, rather the Declaration states that "[e]ach member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency"[1381]. Therefore, although the examples of public health issues provided in the Declaration only include infectious diseases[1382], it shall be interpreted broadly, including non-infectious diseases such as cancer.[1383]

Concerning the definition of "drugs", the Implementing Rules of the Patent Law of the People's Republic of China[1384] Rule 73 Section 2 sets out the details. According to the Rule, drugs subject to patent rights in Patent Law Article 50 refers to "any patented product or any product directly obtained through a patented process to resolve the public health issues in the medical field, including active ingredients for the manufacture of the product and the diagnostic apparatus required for using the product." Vaccines are not

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[1379] Doha Declaration 1. We recognize the gravity of the public health problems afflicting many developing and least-developed countries, especially those resulting from HIV/AIDS, tuberculosis, malaria and other epidemics.

[1380] *See supra* note 1379

[1381] *See supra* note 1379 5c.

[1382] The examples given are HIV/AIDS, tuberculosis and malaria.

[1383] For example, if cancer radically increases due to a nuclear accident, this would be highly likely to be a "public health" problem, although cancer is not infectious.

[1384] Zhuanlifa Shishi Xize (专利法实施细则) [Implementing Rules of the Patent Law of the People's Republic of China] (Revised 2010)

specifically mentioned in the Rules. However, they are considered to be included in the definition.[1385]

"[T]he countries or regions that conform to the provisions of the relevant international treaties"[1386] refers, first of all, to member states as stated in the Annex to the TRIPS agreement attached to the Amendment of the TRIPS agreement of Dec. 6 2005[1387]. Annex 1(b) states that all least-developed country members as well as all other member states that have made a notification to the Council for TRIPS of its intention to import are eligible as an importer. However, some developed countries including the U.S., Japan and the EU states have declared that they will not use the system, therefore these countries are excluded from the eligible states.[1388]

For non-member states of the WTO[1389], most of which are developing countries,

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[1385] *See supra* note 1084 522

[1386] Patent Act art.50

[1387] Annex to the TRIPS Agreement 1(b), Amendment of the TRIPS Agreement, General Council, WTO WT/L/641 (Dec. 6 2005)

[1388] *See supra* note 1387 footnote 3

[1389] As of Nov. 2015, 162 countries are a WTO member. Among the 36 non-member countries, 14 are least-developed countries. According to the list of the UN, there are 48 least- developed countries in the world. This means that nearly 30% of least-developed countries are not covered by the Annex.

Non-member states without observer status includes South Sudan, Somalia, Eritrea, Kiribati, Marshall Islands, Federated States of Micronesia, Monaco, Nauru, Palau, Palestine, San Marino, Tuvalu, Turkmenistan, Timor-Leste and North Korea. (Underlined countries are least-developed countries defined by the United Nations. List Available at United Nations, http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf. (last visited Sep. 12, 2016).)

Observers expected to commence accession are Afghanistan, Algeria, Andorra, Azerbaijan, Bahamas, Belarus, Bhutan, Bosnia and Herzegovina, Comoros, Equatorial Guinea, Ethiopia, Iran, Iraq, Lebanese Republic, Liberia, Libya, Sao Tomé and Principe, Serbia, Sudan, Syrian Arab Republic, Uzbekistan. The only observer not expected to commence accession is the Holy See (Vatican).

(Underlined countries are least-developed countries defined by the WTO. List Available at World Trade Organization, *Understanding the WTO - least-developed countries*, https://www.wto.org/english/thewto_e/whatis_e/tif_e/org7_e.htm. (last visited Sep. 12,

the situation is more difficult. TRIPS agreement Article 31 (f) states that the use without authorization of the right holder "shall be authorized predominantly for the domestic market of the Member authorizing such use", which means that in principle compulsory licensing for export purposes are not allowed. The exemption made by the Amendment [1390] theoretically only applies to Member states, therefore compulsory licensing for the purpose of exporting the product to a non-member state is prohibited.

However, considering the number of least-developed countries who would be denied access to the benefits, this interpretation of the law may result in conflict with humanitarian concerns. The Canadian Patent Act allows the grant of compulsory licenses with the purpose of exporting to non-WTO member states under additional conditions[1391]. Other countries and regions such as Norway, the Netherlands, EU and Korea have followed.[1392] In China, SIPO has once submitted a suggestion to the State Council that this shall be clarified. As Chinese legislators favor "simple and clear"[1393] legislations, the description was decided to be "the countries or regions that conform to the provisions of

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2016).)

[1390] *See supra* note 1387

[1391] Patent Act (R.S.C., 1985, c. P-4) of Canada,

21.03 (1) The Governor in Council may, by order, …

(b) on the recommendation of the Minister of Foreign Affairs, the Minister for International Trade and the Minister for International Development, amend Schedule 2 by adding the name of any country recognized by the United Nations as being a least-developed country that has,

(i) if it is a WTO Member, provided the TRIPS Council with a notice in writing stating that the country intends to import, in accordance with the General Council Decision, pharmaceutical products, as defined in paragraph 1(a) of that decision, and

(ii) if it is not a WTO Member, provided the Government of Canada with a notice in writing through diplomatic channels stating that the country intends to import pharmaceutical products, as defined in paragraph 1(a) of the General Council Decision, that it agrees that those products will not be used for commercial purposes and that it undertakes to adopt the measures referred to in Article 4 of that decision;

[1392] *See supra* note 1084 524

[1393] *See supra* note 1084 524

the relevant international treaties".[1394] The term "conform to" therefore shall be interpreted broadly so as to include non-WTO members.[1395]

5.4.6.3 Conditions

According to Patent Law Article 54, evidences that the applicant of the compulsory license has applied for a license under reasonable terms but was not able to obtain a license within a reasonable timeframe must be presented upon application for a compulsory license.

Note that this applies only for limited grounds of application[1396] – non-implementation or insufficient implementation[1397] and dependent patents[1398]. These two grounds are primarily aimed at balancing private interests[1399], whereas other grounds are aimed at realizing public interest in cases of emergency[1400] and abuse of IP rights[1401].

A request for a license would typically include conditions, such as licensing fees, payment method and due date, production scale, geographical scope of sales, and timeframe of the license.[1402] It is only necessary that these conditions are reasonable considering the field of technology, licensing fees of similar technology, research and development costs etc.[1403] The reasonable time in which the licensor shall reply is considered to be 9-12 months.[1404]

5.4.6.4 Scope of the license

Compulsory license related statutes usually have some restrictions on the timeframe, exclusivity and geographical area.

[1394] *See supra* note 1084 524

[1395] *See supra* note 1084 524

[1396] Patent Act art.54

[1397] Patent Act art.48 Subsection 1

[1398] Patent Act art.51

[1399] *See supra* note 1084 539

[1400] Patent Act art.49, 50

[1401] Patent Act art.48 Subsection 2

[1402] *See supra* note 1084 540

[1403] *See supra* note 1084 540

[1404] *See supra* note 1084 540

When compulsory licenses are granted in China, the timeframe shall always be set[1405] and when the license period expires, the license is automatically terminated[1406]. Even before the initially set licensing term has reached an end, the right holder is entitled to apply for a termination of the compulsory license. If, after examination, the grounds for the grant is deemed to cease to exist and does not recur, SIPO may terminate the license.[1407] Concerning exclusivity, compulsory licenses in China shall be non-exclusive and without the right to sublicense.[1408]

Except for compulsory licenses granted on the grounds of public health issues abroad[1409] and antimonopoly acts[1410], compulsory licenses shall be granted "mainly" to supply to the domestic market. [1411] The phrase "mainly" has a certain vagueness – it can literally mean that the license can be intended to supply as little as 51% of the products to the domestic market and as much as 49% to foreign markets.

Some countries like Ghana interprets the phrase "mainly" in the aforementioned way[1412], while China does not[1413]. The Implementing Rules of the Patent Law Article 74 states that SIPO shall make the decision of granting a compulsory license "in accordance with the provisions on compulsory license for the sake of public health in treaties that China has concluded or taken part in". If the word "mainly" would mean that the majority of the products shall be exported, this would not explain the strong reaction of developing countries and the discussion which resulted in the Doha Declaration.[1414] It should therefore rather be understood as compulsory licenses shall be granted mainly for the purpose of supplying domestic markets.[1415]

[1405] Patent Act art.55 Section1

[1406] *See supra* note 1084 544

[1407] Patent Act art.55 Section2

[1408] Patent Act art.56

[1409] Patent Act art.50

[1410] Patent Act art.48 (2)

[1411] Patent Act art.53

[1412] *See supra* note 1320

[1413] *See supra* note 1084 535

[1414] *See supra* note 1084 536

[1415] *See supra* note 1084 536

Apart from the export-oriented public health related compulsory licensing and antimonopoly related compulsory licensing, another exemption stems from the Annex to the Protocol Amending the TRIPS Agreement, Article 31bis 3;

With a view to harnessing economies of scale for the purposes of enhancing purchasing power for, and facilitating the local production of, pharmaceutical products: where a developing or least developed country WTO Member is a party to a regional trade agreement……., at least half of the current membership of which is made up of countries presently on the United Nations list of least developed countries, the obligation of that Member under Article 31(f)[1416] *shall not apply to the extent necessary to enable a pharmaceutical product produced or imported under a compulsory licence in that Member to be exported to the markets of those other developing or least developed country parties to the regional trade agreement that share the health problem in question….*

China considers itself to be a "developing country"[1417] and therefore this article may potentially allow China to freely export compulsory licensed products. For this to happen, (1) at least half of the regional trade agreement member states need to be LDCs and (2) the importer needs to share the health problem in question.[1418]

[1416] TRIPS Agreement art.31 (f) states that the implementation of IP rights shall be "authorized predominantly for the supply of the domestic market of the Member authorizing such use". Footnote by the author.

[1417] According to the WTO webpage, "[t]here are no WTO definitions of "developed" and "developing" countries. Members announce for themselves whether they are "developed" or "developing" countries. However, other members can challenge the decision of a member to make use of provisions available to developing countries." *See* Definition of a "developing country" in the WTO, available at World Trade Organization, *Development - who are the developing countries in the WTO?*, https://www.wto.org/english/tratop_e/devel_e/d1who_e.htm. (last visited Sep. 12, 2016)., (last visited Feb. 10th, 2016)

[1418] Annex to the Protocol Amending the TRIPS Agreement, art.31bis 3

5.4.6.5 Discussions on granting a compulsory license

Although China has never issued compulsory licenses based on any of the grounds, there was a case in 2015 where the media suggested that a compulsory license should be granted.[1419] Reportedly, a leukemia patient, Yong Lu, who helped other patients in purchasing generic medicine used for cancer treatment from India online, was prosecuted for selling fake drugs[1420]. The problem was that the medicine in question, imatinib mesylate capsules (Gleevec®), was sold in China for 23000 RMB[1421] per package, whereas in India it was sold for 200 RMB[1422] per package.[1423] This huge price difference and the seemingly unreasonably high price in China had triggered the anger of Chinese citizens and it was suggested that compulsory licenses should be granted for this medicine.[1424]

However, one article published on the State Intellectual Property Office website[1425] denied that the high price was caused by high licensing fees charged by the patent owner[1426], Novartis AG.[1427] The article asserted that it was caused by the fact that,

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[1419] Nanfang Dushi Bao, *Juimingyao Zhuanli Qiangzhixuke Weihe Zaihua Luodi Zheme Nan* (救命药专利强制许可为何在华落地这么难), (Feb. 12, 2015), http://business.sohu.com/20150212/n408952253.shtml. (last visited Apr. 2, 2017)

[1420] "Fake" refers to drugs sold without the approval of China Food and Drug Administration, not copied drugs.

[1421] Approximately 3498 USD, Checked Feb 7, 2016 (1RMB= Approx. 0.15USD)

[1422] Approximately 30 USD, Checked Feb 7, 2016 (1RMB= Approx.0.15USD)

[1423] *See supra* note 1419

[1424] *See supra* note1419 . *See also supra* note 1206.

[1425] Zhuanli Qiangzhi Xuke de Shuangrenjian Xiaoying(专利强制许可的双刃剑效应), GUANGXI ZHUANGZU ZIZHIQU ZHISHICHANQUANJU (广西壮族自治区知识产权局), http://gx.sipo.gov.cn/gx/zs/gndt/20150203/27651.html (last visited Mar 13, 2017).

[1426] Adam Hill, Novartis agrees Gleevec patent deal Novartis agrees Gleevec patent deal Pharmafile, http://www.pharmafile.com/news/186407/novartis-agrees-gleevec-patent-deal (last visited Mar 14, 2017).

[1427] In 2013, the two generic versions of the drug were already approved by the China Food and Drug Administration, but the generics' efficacy was unclear because of the difference between the original and the generic: the original medicine was beta crystalline

during the distribution process, various taxes and fees were added to the price. The article also pointed out that, in countries that have a national health insurance system, the out-of-pocket price of the medicine was lower than in India, where generics were available. It could be observed from this example that China takes a reserved attitude in granting compulsory licenses.

5.3 Exhaustion

Exhaustion is one kind of a limitation posed on the assertion of IP rights when an IP protected product has been marketed under the IP holder's consent.[1428] Domestic exhaustion has become a consensus – it would obstruct the free distribution of goods if the patent holder could exercise his/her right against all the parties in the distribution chain and the patent holder need not obtain double (or more) profit from their patent. Furthermore, it is the reasonable expectation of the assignee for all related rights to be transferred through the assignment of the patented product.

However, concerning international exhaustion, countries have adopted different principles. The principles could be categorized into three – national exhaustion, regional exhaustion and international exhaustion. Countries can apply different principles to different types of IP. For example, in Japan, trademark rights are internationally exhaustible but patent rights are not internationally exhaustible when certain conditions are met. [1429]

When a country applies the principle of national exhaustion, the patent owner can oppose the importation of a patented product based on a patent right in the country. Under the principle of regional exhaustion, the patent owner can oppose the importation of a patented product outside of a particular region (such as the EU). Under the principle of

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form, and the generics were alpha crystalline form. *See* HIS Markit, *Glivec faces generic competition in China* https://www.ihs.com/country-industry-forecasting.html?id=1065981219 (last visited Mar. 15, 2017)

[1428] The definition is based on the WIPO webpage World Intellectual Property Organization, *International exhaustion and parallel importation*, http://www.wipo.int/sme/en/ip_business/export/international_exhaustion.htm. (last visited Sep. 12, 2016).

[1429] A detailed introduction to the system can be found in later paragraphs.

international exhaustion, importation of a patented product cannot be opposed based on a patent right in a country. However, all this applies only when the imported product is produced and distributed in the country of origin with the consent of the patent holder.[1430]

5.3.1 Exhaustion under TRIPS

The most important international agreement concerning the issue of exhaustion is the TRIPS Agreement (hereinafter "agreement"). Article 6 of the Agreement entitled "Exhaustion" states as follows:

For the purpose of dispute settlement under this Agreement, subject to the provisions of Articles 3 and 4 nothing in this Agreement shall be used to address the issue of the exhaustion of intellectual property rights.

This one-sentenced article that states that the Agreement does not deal with the problem of exhaustion was one of the most extensively discussed articles of all. [1431]This issue was of huge interest for participants because it was a matter of whether or not to allow parallel importation. [1432] Even if one has patent protection for a product, if international exhaustion is allowed, the world-wide market would be occupied by the manufacture which could sell with the lowest cost unless other price-differentiating factors such as branding or quality control exists.

Exhaustion becomes problematic for patent holders for example in the following circumstance. Patent holder X has a patent for the same invention in countries A (high-income country in which the patent holder implements the invention itself), B (middle-income country with a manufacturing company Y, which legitimately implements the invention under a license) and C (low-income country without the capacity to manufacture the product which embodies the patented invention itself). Country C imports products which embodies the patented invention from X and Y.

[1430] *See supra* note 1428

[1431] *See supra* note 803 46

[1432] *See supra* note 1431 at 47

When Country C allows international exhaustion, X cannot prevent its own products nor the products of Y to be imported in Country C. This would mean that, if Y has cheaper products than X, X would be less competitive in the market. However the consumers in Country C can enjoy cheaper products. This would be of vital importance for the wellbeing of the people when the products are essential pharmaceuticals, for example.

When Country C does not allow international exhaustion, X could prevent its own products and the products of Y to be imported in Country C based on its patent rights in Country C.

During the negotiations, the U.S. Government strongly opposed to the idea of international exhaustion. [1433]The Japanese government agreed to the position of the U.S. based on the case law in Japan at that time. [1434] The EC shared the opinion of the U.S. Government but asserted that the principle of national exhaustion does not apply to trade within the EC. Developing countries were generally of the opinion that international exhaustion should be the universal rule.[1435]

Because of this disagreement, the Agreement was drafted so that the countries are not obliged in any direction in terms of exhaustion rules. The prior draft prepared for the Brussels Ministerial Meeting (Dec. 3 1990) clearly stated the freedom of each member state to decide the regimes of the exhaustion of IP rights:

Subject to the provisions of Articles 3 and 4 above, nothing in this Agreement imposes any obligation on, or limits the freedom of, PARTIES with respect to the determination of their respective regimes regarding the exhaustion of any intellectual property rights conferred in respect of the use, sale, importation or other distribution of

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[1433] *See supra* note 1431 at 47

[1434] The case law Ōsaka Chihō Saibansho [Ōsaka Dist. Ct.] Jun. 9, 1969, MUTAI ZAISANKEN KANKEI MINJI GYŌSEI SAIBAN REISHŪ [MUTAI REISHŪ] 1 KAN 160 was changed in the "BBS case" Saikō Saibansho [Sup. Ct.] Jul. 1, 1997, SAIKŌ SAIBANSHO MINJI HANREISHŪ [MINSHŪ] 51 KAN 6 GŌ 2299

[1435] *See supra* note 1431 at 47

goods once those goods have been put on the market by or with the consent of the right holder.[1436]

The U.S. Government opposed this idea in fear that the term "nothing in this Agreement imposes any obligation on, or limits the freedom of" the countries, as it may pose an influence on future bilateral or multilateral agreements between the U.S. and other countries that imposes the application of the principle of national exhaustion.[1437] It was therefore finally agreed that the Agreement would state that it would does not concern itself with the problem of exhaustion.

Prior research suggests, at least theoretically, that contrary to what developing country governments have asserted during the negotiations, it may not be for the developing countries' benefit to allow international exhaustion. Rather, national exhaustion should be adopted in order to enable price differentiation between markets of different purchasing power.[1438]

Under the regime of national exhaustion, patent holders have control over the supply of goods in each jurisdiction. This would enable them to recoup their investments in high purchasing power economies such as Japan or Germany while lowering the price in developing countries through voluntary licensing or producing themselves. [1439] In order to enable price differentiation of patented goods through technology licensing,

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[1436] Trade Negotiations Committee, Multinational Trade Negotiations Uruguay Round, Draft Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, MTN.TNC/W/35/Rev.1 Dec. 3 1990

[1437] *See supra* note 1431 at 48

[1438] HEINZ GODDAR, *Price Differentiation and the Conundrum of Exhaustion Principles*, *in* DIFFERENTIAL PRICING OF PHARMACEUTICALS INSIDE EUROPE: EXPLORING COMPULSORY LICENSES AND EXHAUSTION FOR ACCESS TO PATENTED ESSENTIAL MEDICINES 129 (Christine Godt ed., Nomos Verlagsgesellschaft Mbh & Co 2010) affirms this point, while suggesting a "modified" international exhaustion regime, when national exhaustion will no longer enjoy legitimacy.

[1439] *See supra* note 1438

developed countries and regions should adopt national or regional exhaustion.[1440]

For developing countries, the situation is more complicated – when the jurisdiction has no industry at all, international exhaustion would allow the influx of cheaper goods. However, this could pose a negative impact where the country has its own industry and technology.[1441]

Conversely, when international exhaustion becomes a general rule among developed countries, licensors would be inclined to take the following strategy, namely not to license out to any parties which may produce a product significantly cheaper than the licensor wishes to sell in the highest priced market. In the aforementioned example, X will not license out to Y. It is also possible to create a "modified international exhaustion"[1442] regime, under which licensors are allowed to stop parallel imports when the license in a developing country was granted at a significantly lower price for humanitarian purposes. However, under the current situation where a vast majority of high-priced countries adopt national or regional exhaustion, to maintain the regime seems to be a simple and more reasonable solution.

If, under a non-modified international exhaustion principle, Y is denied a license, Y still has the option to ask for a compulsory license. The products produced under a compulsory license cannot in principle be exported according to Article 31 of the Agreement. However, the licensing fees could well be significantly lower than the market price. Furthermore, even when there is know-how required or it is better for the production, the know-how cannot be transferred through compulsory licensing. This would create an ironic situation where both X and Y would like to agree to a license, but the law intended to encourage the dissemination of affordable technology would not allow to do so.

[1440] It is possible to argue that national exhaustion would limit the exportation possibilities of licensees. However, at an early stage of development, industries would most likely not have enough competitiveness in the international market anyway, and therefore this would be a secondary concern.

[1441] Interview with Ms. Grace Issahaque, Chief State Attorney at the Registrar-General's Office, Ghana (Dec. 2016)

[1442] *See supra* note 1438

Even under the regime of national exhaustion, developing country governments could address the issue of access to medicine with additional legislations which allows parallel importation under exceptional circumstances. For example, South Africa currently adopts national exhaustion[1443] but the amendment of the Medicines and Related Substances Control Act in 1997 allows the Minister of Health to engage in compulsory licensing and parallel importation.[1444] The revision was a response to the HIV crisis in South Africa. [1445] The Pharmaceutical Research and Manufacturers of America (PhRMA) which represents the U.S. pharmaceutical industry and the U.S. Government, convinced by PhRMA, openly opposed the legislation, which resulted in intergovernmental disputes. However, in 1999, the governments reached an agreement that the U.S. Government would not pressure the South African Government and the South African Government would comply with the TRIPS Agreement.[1446] The commitment of the South African Government did not lead to any changes in the legislation as the legislation was, in fact, already TRIPS-compliant.[1447]

5.3.2 Exhaustion under TRIPS-Plus

Some FTAs, such as the U.S. - Morocco FTA have clauses that require the assurance of right of patent holders to prevent parallel importation.[1448] However, it is

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[1443] Esmé du Plessis & Danie Dohmen, EXHAUSTION OF RIGHTS: A SOUTH AFRICAN PERSPECTIVE (Regional Seminar for Certain African Countries on the Implementation and Use of Several Patent-Related Flexibilities 2013). 16

[1444] Duane Nash, *South Africa's Medicines and Related Substances Control Amendment Act of 1997*, Vol 15: 485 BERKLEY LAW AND TECHNOLOGY JOURNAL (2000). 492

[1445] William W. William III & Cyrill P. Rigamonti, *The South Africa AIDS Controversy A Case Study in Patent Law and Policy*, THE LAW AND BUSINESS OF PATENTS, HARVARD LAW SCHOOL (2005).

[1446] *See supra* 1445 at 9

[1447] *See supra* note 1225 at 6

[1448] U.S. Morocco FTA 15.9.4 Each Party shall provide that the exclusive right of the patent owner to prevent importation of a patented product, or a product that results from patented process, without the consent of the patent owner shall not be limited by the sale or distribution of that product outside its territory.

pointed out[1449] that, the countries that agreed to such clauses are countries already with an inclination towards national exhaustion, and the influence of the FTA is insignificant.

5.3.3 Exhaustion in Japan

Japan has seen a change in the case law regarding the regime of exhaustion. Until the Supreme Court decision on the "BBS case"[1450] in 1997, the former case law of 1969 decided by the Osaka District Court[1451] which applied the principle of strict national exhaustion.

The facts of the case was as follows. The plaintiff had a patent in Germany and in Japan and sold their patented products both in Japan and Germany. The defendant imported the products from Germany and sold them in Japan. The point of the dispute was whether the plaintiff can prevent the parallel importation based on its Japanese patent.

In the decision the court did not adopt the principle of international exhaustion but also did not take the position of the previous case law which adhered to strict national exhaustion. It stated that the principle of exhaustion applies domestically in order to secure the freedom of distribution and in order not to allow the patentee to obtain double benefits based on the same patent. However, internationally, this principle does not automatically apply, as there may be no corresponding patents in other jurisdictions and even when one exists, it is a separate right from the Japanese patent right.

On the other hand, the freedom of distribution of goods should be respected, and the freedom includes the right to import. It is generally expected that all the rights concerning the product are transferred from the seller to the buyer when a product is transferred through a contract and the seller can expect that the product would be imported into Japan even when the first sale was in a foreign country. Therefore, the court ruled that, as long as the patent holder does not explicitly prohibit sales in Japan and displays

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[1449] Jean Frederic Morin, *Tripping up TRIPS debates IP and health in bilateral agreements*, INT. J. INTELLECTUAL PROPERTY MANAGEMENT, Vol. 1, Nos. 1/2, 2006 37 (2006). 47-48

[1450] Saikō Saibansho [Sup. Ct.] Jul. 1, 1997, SAIKŌ SAIBANSHO MINJI HANREISHŪ [MINSHŪ] 51 KAN 6 GŌ 2299

[1451] Ōsaka Chihō Saibansho [Ōsaka Dist. Ct.] Jun. 9, 1969, MUTAI ZAISANKEN KANKEI MINJI GYŌSEI SAIBAN REISHŪ [MUTAI REISHŪ] 1 KAN 160 was changed in the "BBS case"

it on the product, the importation of the product into Japan is allowed. This is also the case when the patentee does not have a corresponding patent in the place of first sales.

A literal understanding of the case is that this rule only applies to when the sales in foreign countries are done by the patentee itself or someone who could be regarded as "an equivalent person[1452]." It has since been discussed whether a licensee would be included the definition of "an equivalent person".

As the grounds for the allowance of parallel importation is the "implicit grant of right" to enjoy the control over the patented product from the assignor who is the patentee (or who could be regarded as "an equivalent person") to the assignee of the product, whether or not the patentee has implicitly granted the right to import the product into Japan would be the key to the answer. Tamura[1453] points out that, since the patent holder can instruct the licensee on the production and sales, a licensee can also be regarded as "an equivalent person" and the patent holder is denied the right to exercise their patent rights in Japan. This is also the case when the country of sales does not have a corresponding patent, as is mentioned clearly in the BBS case.

An issue that needs international harmonization arises here. As seen in 5.1.6.3, the Ghanaian Technology Transfer Regulations prohibits a complete ban on the exportation or a complete ban on the exportation to specific geographical areas, of the licensee's products, unless exclusive rights are granted in that geographical area. This denies the right of the licensor to conclude a contract that completely prohibits the export of the licensee's product to Japan. Therefore, the licensor in this case cannot secure the high priced-market (Japan) from the influx of Ghanaian products.

5.3.4 Exhaustion in the EU

The principle of regional exhaustion of patent rights applies within the European

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[1452] The translation of the word is taken from the JPAA webpage. *See* Kei Kamitani, *BBS case parallel importation supreme court case H7 (O) no (2010)* http://www.jpaa.or.jp/english/court_decisions/36-case_h7_o1988.pdf.

[1453] Yoshiyuki Tamura, *Heikō Yunyū to Tokkyoken – BBS Jiken Saikōsai Hanketsu no Igi to sono Kentō (並行輸入と特許権 - BBS 事件最高裁判決の意義とその検討)*, NBL No.627 31– (1997).

Economic Area (EEA).[1454] Relevant articles of the Treaty on the Functioning of the European Union are Articles 34 through 36.[1455]

Articles 34 and 35 lay down the ground rule that "[q]uantitative restrictions" on imports and exports between member states and "all measures having equivalent effect" shall be prohibited. Article 36 sets an exemption for restrictions or prohibitions based on the grounds of the protection of industrial and commercial property.

However, according to judicial precedents in the ECJ[1456], Article 36 based exemption is not automatically granted on the grounds of IP protection. In Centrafarm BV v Sterling Drug Inc., the ECJ stated that the "exercise of these rights may nevertheless, depending on the circumstances, be affected by the prohibitions in the Treaty". [1457] Article 36 provides exemption for cases "where such derogations are justified for the purpose of safeguarding rights which constitute the specific subject- matter of this property."[1458] "[T]he specific subject matter of the industrial property is the guarantee that the patentee … has the exclusive right to use an invention … and putting them into circulation for the first time, either directly or by the grant of licenses to third parties, as well as the right to

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[1454] Enrico Bonadio, *Parallel Imports in a Global Market: Should a Generalised International Exhaustion be the Next Step?*, EUROPEAN INTELLECTUAL PROPERTY REVIEW, Vol. 33, No. 3 pp. 153–161 (2011). 3

[1455] TFEU art.34 Quantitative restrictions on imports and all measures having equivalent effect shall be prohibited between Member States.

TFEU art.35 Quantitative restrictions on exports, and all measures having equivalent effect, shall be prohibited between Member States.

TFEU art.36 The provisions of Articles 34 and 35 shall not preclude prohibitions or restrictions on imports, exports or goods in transit justified on grounds of public morality, public policy or public security; the protection of health and life of humans, animals or plants; the protection of national treasures possessing artistic, historic or archaeological value; or the protection of industrial and commercial property. Such prohibitions or restrictions shall not, however, constitute a means of arbitrary discrimination or a disguised restriction on trade between Member States.

[1456] For example, *see* Case 15/74, Centrafarm BV v Sterling Drug Inc., E.C.R. 1974 - 01147 (1974) *See also*, Case 19/84 Pharmon BV v Hoechst AG, ECR 2281 (1985)

[1457] Centrafarm BV v Sterling Drug Inc., Para 7

[1458] Centrafarm BV v Sterling Drug Inc., Para 8

oppose infringements."[1459]

The free movement of goods may be obstructed by national legislations adopting national exhaustion,[1460] but this can only be justified when the patent holder did not consent to the patented product being put on the market. If Article 36 is interpreted otherwise, a patentee "would be able to partition off national markets and thereby restrict trade between Member States, in a situation where no such restriction was necessary to guarantee the essence of the exclusive rights flowing from the parallel patents."[1461]

Applying the same principle, the ECJ stated in Pharmon BV v Hoechst AG that the patent holder can prevent the importation of products manufactured under a compulsory license in another member state.[1462]

5.3.5 Exhaustion in Ghana

Ghana currently allows international exhaustion[1463]. However, historically Ghana has not allowed international exhaustion of patent rights.[1464] The situation changed in 2003 when the country revised its patent law in order for it to become TRIPS-compliant. Ghana decided to take advantage of the flexibility allowed under TRIPS and introduce international exhaustion. International exhaustion applies to products which originate in countries without a corresponding patent[1465], but does not apply when the sales were not

[1459] Centrafarm BV v Sterling Drug Inc., Para 9

[1460] Centrafarm BV v Sterling Drug Inc., Para 10

[1461] Centrafarm BV v Sterling Drug Inc., Para 12

[1462] Pharmon BV v Hoechst AG Para 26

[1463] Patent Act (2003)§11(4)(a) - "The rights conferred under the patent shall not extend to - acts in respect of articles which have been put on the market in any country by the owner of the patent or with the owner's consent,"

[1464] Patent law of 1992 (PNDCL 305A) §30 (a) states that "The rights under the patent shall – extend to acts in respect of articles which have been put in Ghana by the owner of the patent or with his express consent. *See* Helen Akpeneawo Ziwu, Exhaustion of Patent Rights Ghana. Presented at the Regional Seminar for Certain African Countries on the Implementation and Use of Several Patent-Related Flexibilities (January 29-31, Durban) at 10

[1465] *See supra* note 1464 (Ziwu 2013) at 12

done without the owner's consent.

After the introduction, Ghana has seen both positive and negative effects. The positive effects were that imports of lower-priced pharmaceuticals were enabled and increased access to imported goods in general was realized. In the agricultural sector, the prices of basic inputs, namely fertilizers and pesticides were lowered.[1466]

The negative influence was that the imported products initially intended for other markets did not necessarily suit Ghana and the quality and efficacy of the goods on the market was compromised. Another problem was caused by imports of sub-standard products.[1467]

The negative influence was mitigated by laws and administrative regulations on imports. For pharmaceutical products, the Food and Drug Board ("FDB") controls the import and authorization is required to import medicine. Medicines can only be imported through authorized ports at which the products are inspected, and products could be sampled for testing. This also applies to food and textile products.[1468]

Another important actor in regulating the imports is the Ghana Standards Board (GSB). It sets the standard by which all products on the Ghanaian market must comply, and ensures that all imported products actually comply by the standards in cooperation with the FDB and customs.[1469] Starting August 2003, the Ghana Standards Authority has been directly inspecting the High Risk Goods (HRGs) upon arrival to the ports in reaction to the problem of fake drugs being imported into Ghana. HRGs include pharmaceuticals, and they must be registered prior to the importation.

5.3.6 Exhaustion in China

China has a principle of international exhaustion. Its Patent Law Article 69[1470]

[1466] *See supra* note 1464 (Ziwu 2013) at 13

[1467] *See supra* note 1464 (Ziwu 2013) at 14

[1468] *See supra* note 1464 (Ziwu 2013) at 15

[1469] *See supra* note 959 9

[1470] Patent Law art.69 The following shall not be deemed to be patent right infringement: (1) After a patented product or a product directly obtained by using the patented method is sold by the patentee or sold by any unit or individual with the permission of the patentee, any other person uses, offers to sell, sells or imports that product…. Translation by SIPO

states that importing patented product or a product directly obtained by using the patented method sold by the patentee or under the permission of the patentee shall not be deemed to be an infringing act.

Before the law revision of 2000, the law remained unclear on whether it allows parallel importation or not.[1471] The 1984 Patent Law had stated that the act of using or selling products put in the market by the right holder under the approval of the right holder shall not be regarded as an infringement of rights.[1472] At that time, both in practice and in theory, two different interpretations on this matter existed and there were no court decisions on this matter.[1473] The 2000 revision made it clear that China adopts the principle of international exhaustion.

The rationale for adopting the principle is that China still relies on imports for many crucial components for their manufacturing industry including machine parts and production facilities, which brings the need to freely import patented products from abroad. As Chinese companies are major product exporters and technology importers in the world, China supports international exhaustion as a general principle of international patent law. International exhaustion would be in favor of Chinese companies who produce based on licenses from foreign patentees and exports them, as if the importing country adopted the principle of national exhaustion, it would be a barrier to exportation.[1474]

The leukemia medicine case mentioned in 5.6.2.5 also has an interesting implication for exhaustion principles and pharmaceutical prices. Although, in principle, international exhaustion has an effect of lowering product prices through allowing the entry of cheaper products in the market, it does not necessarily work that way in the pharmaceutical sector. This is because of two factors: restrictions in distribution and the national health insurance system.

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available at State Intellectual Property Office, *SIPO ENGLISH*, http://english.sipo.gov.cn/laws/lawsregulations/201101/t20110119_566244.html. (last visited Sep. 12, 2016).

[1471] *See supra* note 1141

[1472] Patent Act art.62 Subsection 1

[1473] *See supra* note 1141

[1474] *See supra* note 1084 803-804

Although the importation of the medicine from the place of first sales does not constitute patent infringement under the international exhaustion principle that China adopts (note that Lu, the importer was not prosecuted for patent infringement but for the retail of fake drugs[1475]), the sales thereof are restricted.[1476] The price of the product in China is higher in China than in the U.S.A. or Japan because of the complicated distribution process and import tax,[1477] and possibly because of the (factual) monopoly created by the drug administration system. The fact that China does not have a national health insurance system also worsens the situation for the patients.

As seen from this case, exhaustion principles are just one of many factors that determines the price of a patented product, and the statement that international exhaustion results in increased affordability of patented products does not necessarily hold true in all cases.

5.4 License of Right

License of right is "a legal mechanism by which a patent holder voluntarily chooses to give general access to the patented invention by the payment of a license fee."[1478] It is voluntary in nature, by contrast to the compulsory licensing system. Historically, an example of license of right with a non-voluntary aspect in it does exist, but nowadays, a license of right refers to a system that aids the voluntary dissemination of technology through licensing.[1479]

[1475] *See supra* note 1419

[1476] The Drug Administration Law of the People's Republic of China requires that all pharmaceutical products are approved by the China Food and Drug Administration prior to distribution. For importation of drugs, evaluation of the drugs to be imported shall be organized by the drug regulatory department under the State Council. A drug may be imported only upon approval granted after the fact that it conforms to the quality specifications and is safe and effective is affirmed through examination, and an import drug license shall be issued.

[1477] *See supra* note 1425

[1478] ESTHER VAN ZIMMEREN & GEERTRUI VAN OVERWALLE, *Compulsory License Regimes for Public Health in Europe*, *in* ENCYCLOPEDIA OF LIFE SUPPORT SYSTEMS (EOLSS), BIOTECHNOLOGY VOL.XI (2010). 5

[1479] *See supra* note 1478 5-6 "We note, however, that in the UK, when the license of right

The license of right system enables licensors to license out their technology while minimizing the maintenance fees, negotiation costs and costs arising from licensing disputes. The licensees could, at a glance, know which patents are available for a license (and in some countries, the offered price for a license) and in cases of disagreement on conditions, they could request the relevant authorities for a decision. The general public benefits from the reduced licensing costs, which would theoretically mean a reduced price for the end product. Especially with regard to SEP licensing, the utilization of the license of right system could greatly reduce the length and cost of disputes arising therefrom.

There is no international treatise on this topic. Therefore, whether or not to establish a license of right system or how to formulate the system is left to the discretion of national governments.

5.4.1 License of Right in Japan

Although being discussed among researchers[1480], the license of right system has not been introduced in Japan.

5.4.2 License of Right in the EU and Germany

At the EU level, no unified license of right system is available, although its introduction into the unified patent system has been discussed[1481]. The system under consideration provides a 15% discount of registration fees when (1) the patent is granted with unitary effect and (2) the right holder files a statement with the EPO that he is

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was introduced into the domestic law by the Patents and Designs Act of 1919, not only could the patent owner register the patent as being available as of right, but also any interested party could request the comptroller to issue a license of right on the ground that there had been an abuse of monopoly rights under the patent. Hence, by then the distinction on the basis of the voluntary or non-voluntary nature did not apply. ”

[1480] Yushi Segawa et al., *Ei-doku ni okeru Raisensu obu Raito Seido oyobi Sono Riyō Jittai (英・独におけるライセンス・オブ・ライト制度およびその利用実態)*, PARI Working Paper Series No.2 (2009).

[1481] Sander van Rijnswou, *Reduced renewal fees unitary patent in exchange for willingness to license*, http://unitary-patent.blogspot.de/2015/06/reduced-renewal-fees-unitary-patent-in.html. (last visited Sep. 12, 2016).

prepared to allow any person to use the invention in return for appropriate licensing fees.[1482] The licensor may withdraw the statement, but all the discounts of fees he has received are forfeited and must be paid back.[1483]

Countries such as Germany[1484], Italy[1485], Spain[1486] and the U.K.[1487] have already had this system.[1488] Germany had already introduced the system, Lizenzbereitschaft[1489] as early as 1936[1490]. It allows 50% discount of registration fees[1491], unlike the expected system in the Unified Patent Court, which only gives 15% discount.[1492] Upon making the declaration to provide the license as of right to the German Patent and Trademark Office (Deutsche Patent- und Markenamt, hereinafter "DPMA") in writing.[1493] The licensing fee does not need to be clarified upon registration[1494] and would be determined by the DPMA upon request of a party[1495].

The prospective licensee shall inform the patentee of its intent to obtain a

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[1482] *See supra* note 1481

[1483] *See supra* note 1481

[1484] PatG §23 (Lizenzbereitschaft)

[1485] Art. 80 Decreto Legislativo of 10th February 2005 no. 30 (Licenza di diritto)

[1486] Art. 81 Ley 11/86 de 20th March 1986 (*Licencia de pleno derecho)*

[1487] 46 Patents Act 1977 (License of right)

[1488] France used to have this system until 2005. *See* , Christoph Klamp, *Licence of Right: A possibility to reduce maintenance fees* http://www.dennemeyer.com/white-papers/licence-of-right/

[1489] PatG §23

[1490] Ilja Rudyk, *The License of Right, Compulsory Licensing and the Value of Exclusivity*, GOVERNANCE AND THE EFFICIENCY OF ECONOMIC SYSTEMS DISCUSSION PAPER No. 415 (2012)

[1491] PatG, §23(1)

[1492] *See* supra note 1481

[1493] PatG, §23(1)

[1494] PatG, §23(1) merely states that the patent holder shall declare to the Patent Office in writing that he is "prepared to allow anyone to use the invention in return for reasonable compensation".

[1495] PatG, §23(4)

license.[1496] The notification shall include a statement of how the invention will be exploited, and will be effected when the notice is dispatched.[1497] The licensee is then entitled to exploit the invention in the manner described in the notice.[1498]

The declaration may be retracted anytime as long as no intention of use is notified to the patentee.[1499] When the declaration is withdrawn, the patentee shall pay the accumulated discounted amount of the patent renewal fee.[1500]

In Germany, license of right is a widely used system – the declaration is made for almost 6% of all patent applications.[1501] The use is more common in the electrical engineering field, where over 11% of the patents are declared, while in the biology field the number is much smaller - only 1.2% of the patents are declared.[1502]

5.4.3 License of Right in Ghana

The license of right system existed in Ghana until the 2003 law revision. The 1992 law Part X states that a patent owner may request the Registrar to register that the license for the patent is available as of right.[1503] The request of entry would be then notified to the licensees[1504] by the Registrar. The licensees can object to the request on the ground that the licensors are contractually obliged not to grant further licenses.[1505] In the absence of any objections, the entry would be registered and published.[1506] Annual fees falling due

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[1496] PatG, §23(3)

[1497] PatG, §23(3)

[1498] PatG, §23(3)

[1499] PatG, §23(7)

[1500] PatG, §23(7)

[1501] See supra note 1490 2

[1502] *See supra* note 1501 2

[1503] Patent Law (1992) §53 (1)

[1504] Under §40 (1) of the 1992 patent law, "all license contracts, including modifications thereof, shall be submitted to the Registrar for registration in the register in the form of a petition."

[1505] Patent Law (1992) §53 (3)

[1506] Patent Law (1992) §53 (4)

after the entry would be reduced by 50%.[1507] When a prospective licensee requests a license but the parties cannot agree on the terms, either party can take it to the Patents Tribunal.[1508]

5.4.4 License of Right in China

China currently does not have a license of right system under the 2008 Patent Law. However the system is likely to be introduced under the new patent law currently under review. [1509] The draft dedicates 3 articles, namely Articles 82 – 84 to the newly founded license of right system.

The draft Article 82 states as follows;

The patent holder can declare to license their patents to anyone who wishes a license through submitting a document, specifying the license fee, to the patent administration department under the state council, who would announce the declaration in order to effectuate it. (…)

When retracting the declaration to license of right, the patent holder shall submit a document to the patent administration department under the state council, who would announce the retraction. This retraction would not affect any existing licensees at the moment of retraction.[1510]

The declaration is considered as an offer of a contract, not as a mere solicitation of an offer.[1511] The licensing fees could freely be determined by the licensor, at least when it is registered. When there is a conflict, draft Article 84, explained below, comes into effect and the licensing fees are determined by the patent administration department under the State Council. [1512] Note that in China, unlike Germany, the licensor needs to

[1507] Patent Law (1992) §53 (6)

[1508] Patent Law (1992)§53 (5),§70

[1509]Draft for Examination of the Patent Law

[1510] Draft for Examination of the Patent Law art.82

[1511] *See supra* note 1141

[1512] *See supra* note 1141

predetermine the licensing fee upon registration.

In order to obtain a license, draft Article 82 states as follows;

Anyone who wishes a license of right shall notify the licensee in writing and pay the license fee. When the declaration of license of right is effective, it shall not grant exclusive or sole licenses, or seek preliminary injunction.[1513]

Under the circumstances that the parties have a dispute concerning a license under the license of right system, the draft article 84 states as follows:

When a dispute concerning the license of right occurs, the patent administration department under the state council renders a ruling. If the parties wish to challenge the decision, they could file a lawsuit in the People's Court within 15 days after the receipt of the notification of the ruling.[1514]

5.5 Conclusions

This Chapter provided a description of licensing regulations in the target countries and region, namely Japan, EU, Ghana and China. The comparison has displayed a correlation between the countries' industrial development and the regulations in the countries. Licensing regulations independent of competition law are widely found in developing countries in patent law, contract law and specialized licensing regulations, whereas competition law based regulations are provided in developed countries. Japan and China have experienced a gradual shift from strict to looser regulations reflecting their industrial development, and Ghana is also intending to clarify its regulations in order to better suit the current situation of its industry.

In addition to voluntary licensing regulations, all target countries have provided for a compulsory licensing system. All of the target countries, although having a well-developed procedural rules for it, were very cautious in actually granting compulsory

[1513] Patent Law, Proposed Art.80

[1514] Patent Law, Proposed Art. 81

licenses. It does not come as a surprise that for developed countries, however, granting compulsory licenses seem to be beneficial for the country by enabling access to technology. An interesting observation was that developing countries actually prefer voluntary licenses because they need technology transfer. The governments rightly recognize this point. They wish to use the compulsory licensing system as a mechanism to encourage voluntary licensing rather than actually issuing a license.

Exhaustion principles are an area where sharp disagreement between developed and developing countries exist. Developed countries mainly favor national (or regional) exhaustion in order to protect their local industry from cheaper products. Developed countries adopting national exhaustion principles aids technology transfer from developed country enterprises to developing country enterprises because it gives the former a chance to block the products embodying the technology produced by the latter. This in turn triggers the issue of creating a barrier for developing country licensees to enter the external market, but for many developing countries at the very start of its industrialization, entering developed country markets may be not as urgent a concern as to obtaining the technology necessary for its industrialization.

China on the other hand, as a main exporter of affordable goods and importer of patent protected parts for their manufacturing industry, is an advocate of international exhaustion. Some developing countries, such as Ghana, introduced international exhaustion as a part of their strategy to utilize TRIPS flexibilities.

From the perspective of the development of domestic industries however, it is questionable whether international exhaustion is solely the right answer for developing countries. International exhaustion is good for providing affordable goods for its citizens, but if the local industry cannot produce products in a manner that allows price competition with foreign goods due to low productivity or expensive inputs, it may hinder the growth thereof. When the deficiency of goods is an urgent issue of the national economy, international exhaustion indeed makes a lot of sense – otherwise the appropriateness must be assessed taking into account possible side effects.

Notwithstanding the above discussions on the benefits of adopting national exhaustion in developed countries, international exhaustion has its own merits, such as encouraging the free movement of goods, resulting in lower product prices both in

developed and developing countries.

If international exhaustion is adopted as a general rule, however, additional international rules to exempt certain products produced under licenses of which terms are favorable to developing countries may be advisable. The rules can be implemented in a similar manner to that of goods produced under compulsory licenses.

License of right system is a tool to encourage and facilitate voluntary licensing through providing an official platform for “advertising” the availability of the technology and a prompt, technically competent dispute resolution system. The unified patent system under consideration also has a license of right system, and in Europe several countries have continuously had this system. China is also considering its introduction.

On the other hand, Ghana has abolished the system in order to prioritize simplicity, and the decision is understandable considering the patent system not being sufficiently utilized by the locals at the moment due to its perceived complexity. One day, when the Ghanaian patent system is further developed, this system may be perceived to be more useful. Japan still does not have a license of right system. However, in light of all the FRAND patent wars, it may be a reasonable idea to introduce a license of right system. If registering to license as of right at the patent office becomes a mandatory condition instead of declaring FRAND, a dispute on reasonable royalties could be brought to trial in the patent office, where qualified patent experts can decide the case.

Chapter 6. Conclusions

This dissertation has attempted to provide a partial answer to the question of how national and international legislations, as well as policy initiatives could aid in the transfer of technology through licensing into developing countries. In Chapters 2 and 3, licensing practices have been described and their implications especially with regard to developing countries have been discussed. In Chapter 4, examples of technology licensing schemes with reference value have been discussed and analyzed. Finally, in Chapter 5, national and international licensing regulations that govern the private practices in the field of licensing have been discussed.

In the following and final chapter, policy and legislative suggestions based on the aforementioned four chapters are provided.

6.1 Policy and legislative suggestions

6.1.1 International legislations

The discussion on international technology transfer regulation was brought to a halt after the TRIPS Agreement was reached. In contrast to the draft ToT code approach, which was to make universally applicable, uniform regulations, the TRIPS Agreement approach was to merely state the discretion which is granted to the member states (5.1.1 to 5.1.3).

The ToT approach was unrealistic in the sense that all countries, despite differences in economic and industrial developmental stage, were bound by the same code. Therefore, the TRIPS approach made better sense as it leaves it up to the countries to decide what is best for them. (5.1.1 to 5.1.3).

Under the TRIPS Agreement, developing countries have maintained licensing regulations which are separate from anti-monopoly law related regulations that regulate private parties' acts of technology licensing (5.1.2). The regulations often have similarities to the draft ToT code (5.1.1) and are applied mandatorily in all technology transfer transactions concerning the respective jurisdiction (5.1.6-5.1.7). The effectiveness of the enforcement of such regulations is secured by making them a condition for the transfer of royalties out of the respective jurisdiction upon the registration of every licensing agreement that involves enterprises registered in the

country (5.1.6-5.1.7).

This approach provides sufficient additional protection to developing country parties while securing non-developing country parties' freedom of contract when dealing within non-regulated jurisdictions (5.1.2).

The discretion under TRIPS lead to the discussion of TRIPS flexibilities and how to use them to the developing countries' benefit. It provided a safe harbor for developing countries to maximize their benefits from the IP system, or minimize its side effects without being internationally criticized (5.1.2-5.1.3). [1515] However, it is still questionable whether developing country governments are utilizing this discretion in order to develop their local industry (6.1.2).

The paper's conclusion is that the TRIPS Agreement's approach to licensing regulation provides flexibilities to individual countries to create such legislation as fits their country best. Developing countries could adequately protect their enterprises and

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[1515] Nevertheless, this paper is not suggesting that developing countries should not enhance their IP protection. It should be done, not through compromises of developing countries in trade agreement negotiations, but through international assistance to utilize the IP system in an effective and efficient manner.

In the Ghanaian example, it was shown that the Ghanaian SMEs, despite having made a lot of inventions, did not have sufficient access to patent-related IP services. Even when the SMEs tried to reach out to use the IP system, the relevant governmental authorities lacked resources to adequately help them. In light of these realities, pressuring developing countries to accept higher standards of IP protection would not help the population to benefit from the IP system – rather it merely becomes another mechanism to protect foreign interests in the country.

It goes without saying that legitimate foreign interests should be adequately protected, but a national system primarily used for that purpose would not be accepted well by the nationals. When the IP system is well appreciated by the local people, IP protection will be enhanced without foreign pressure. International assistance in the use of IP by locals (and foreigners) would lead to better user experience and ultimately to better protection.

In order to enhance IP protection in developing countries, international IP capacity building would be a better option in comparison with bilateral or multilateral agreements obligating one party to higher the standards of IP protection.

encourage the transfer of beneficial technology through national legislations created under their discretion.

6.1.2 National legislations

National legislations after the TRIPS Agreement have been in line with TRIPS, while utilizing its flexibility to a maximum. The four areas of legislations have been discussed in Chapter 5, each of which has strong influence on the actions of parties.

6.1.2.1 Licensing regulations

Licensing is a delicate art of balancing (sometimes conflicting) interests and achieving a win-win solution for all parties concerned (3.2-3.3). A licensing agreement reflects the bargaining power of each party (3.3). It could be structured in a way that the weakness of each party is covered by the strength of another, and establishes a win-win relationship between the parties (3.3).

However, if the power of one party is significantly stronger than the other in terms such as financial strength or knowledge of technology or law, the other party could be forced into an unfair agreement. This is the fear of the government of developing countries and its enterprises (5.1.1-5.1.3, 5.1.4, 5.1.6-5.1.7), and is why developing countries wish to have strict licensing regulations (5.1.1-5.1.3).

In developing countries, licensing regulations are often independent from antitrust regulations, while in developed countries, independent licensing regulations do not exist. Historically, in Japan (5.1.4) and China (5.1.7), the licensing regulations have gradually shifted from a licensing regulation-based system to a competition law regulation system. Among the four targeted countries and regions, China and Ghana (5.1.6) have licensing regulations independent from antitrust regulations, while Japan (5.1.4) and the EU (5.1.5) do not.

Licensing regulations should balance the needs of licensee protection and the facilitation of technology transfer, which are both crucial for the development of the industry. If it is overly strict, it may interfere with the ability of parties who intend to establish a creative licensing scheme for the distribution of technology, as seen in the conflict between the schemes in Chapter 4 and the regulations stated in Chapter 5, especially in 5.1.7 (China) and 5.1.6 (Ghana). On the other hand, no regulation may result

in exploitation of national industries and the industry may remain in a technologically dependent state despite many licensing agreements being made in the jurisdiction.

The distinction between creative licensing schemes for the distribution of technology which benefits the public and schemes that lead to dominating the market with superior technical ability can be blurry, as seen from the examples of practices in Chapter 4, and from the discussions in Chapter 5, especially with regard to voluntary licensing regulations in China (5.1.7) and Ghana (5.1.6). A company with the good intention of distributing their technology may end up in being accused of locking technologically weaker parties into the realm of their technology (3.3.4, 4.2.1, 4.4.2). Therefore, it is not always possible to list conducts that should be automatically considered as a prohibited restricted practice.

Some countries allow flexibility based on the importance of the cases in terms of the conditions of the license, and this makes a lot of sense considering that business needs to make the win-win arrangement that best suits their needs, and governments wish to allocate the limited resources of their country to obtain the most important technologies (5.1.4.2). However, it must also be noted that such flexibilities have the possibility of resulting in opaqueness of the review and registration process (5.1.4.2), and can only be successfully exploited when the government is healthily functioning and has a clear and effective policy on industrial development.

6.1.2.2 Compulsory licensing

The compulsory licensing system is also an important supplement to private technology transfer. It works as a "big stick" to force the parties to act in a fair manner, both from an antimonopoly perspective and a public benefit perspective (5.2.5).

However, compulsory licenses do not function well as a permanent solution to the problem of lack of technical ability (5.2.5). For the improvement of technical ability, one needs a long-term technical cooperation relationship (4.2.2).

6.1.2.3 Exhaustion

Exhaustion principles determine the choice of private actors to a certain extent. The complexity of the discussion of exhaustion principles is that the principle adopted in one country influences the licensing strategy in another country (5.3.3, 5.1.6.3).

Some developing countries have adopted the principle of international exhaustion allowed under TRIPS in order to import affordable goods available on the international market (5.3.5-5.3.6). It seems reasonable to do so considering that some countries have very few local IPs. Nevertheless, international exhaustion may have negative side effects of insufficient protection of local industry and technology (5.3.1).

Developed countries abide by the national exhaustion principle or modified national or international exhaustion principle which allows the non-exhaustion of rights under certain conditions (5.3.3-5.3.4). The adoption of national exhaustion principle in high-priced countries encourages technology transfer to lower-priced markets, as the licensees can grant licenses under reasonable terms in developing countries without fear that the products would destroy the high-price market (Chapter 4).[1516] However, the modified exhaustion system can be problematic and could possibly result in rights being exhausted against the will of the licensor due to national licensing regulations in the recipient country (5.3.5).

6.1.2.4 License of right

License of right is a win-win-win solution for the licensor, licensee and the general public when the licensor has the intention to license the technology out on fair terms and on a non-discriminatory basis (5.4). It reduces negotiation costs and dispute resolution costs both for the licensor and the licensee, and the general public could benefit from the reduction of costs by lower product prices (5.4).

Admittedly, license of right is only useful when a licensor has a true intention of licensing the technology out on fair terms and on a non-discriminatory basis. Therefore, it can only be a very partial solution to the issue of lack of dispersion. It is also a pure patent license that does not accompany know-how, although additional agreements could be made by the parties. Nevertheless, the license of right system could be an important partial solution to the lack of dispersion of technology. It increases the availability of

[1516] The other side of the coin is that it constitutes a barrier for developing country entrepreneurs to enter the high-price market. The effect of modified international exhaustion allowing non-exhaustion when the parties so agree is limited, as sometimes these agreements not to export are invalid due to local licensing regulations of the licensees.

technology by incentivizing patent holders to license their technology out on fair terms and on a non-discriminatory basis. Legislative efforts in order to introduce the license of right system should be made in jurisdictions without the system, such as Japan (5.4.1) and Ghana (5.4.3). The introduction of a license of right system is considered as a part of the unified patent system in Europe (5.4.2), and China (5.4.4) plans to introduce it in their next patent law revision.

6.1.3 International public policy initiatives

The role of international organizations in enhancing technology transfer has been to lead the discussions on international technology licensing regulations, which have been finalized by the TRIPS Agreement (5.1.1-5.1.3). By nature, technology licensing regulations restrict private parties' acts. Some kind of restriction could be necessary, but this only provides basic security for enterprises in developing countries. In order to develop their industry, preventing exploitation is not enough – they need more technology to be transferred to their country.

Reflecting the recognition of an unfinished task, international organizations have emphasized the importance of technology transfer for a long time, and recently, effective public private partnership technology transfer platforms have been initiated by them (Chapter 4).

Another role of international organizations is to connect people and institutions with various resources such as technical ability, funding and legal expertise to come together and encourage technology licensing to developing countries. This should be done both at a national and international level, and collaborations between national governments and international organizations should play a crucial role (Chapter 4).

6.2 Best Licensing Practices

6.2.1 Package technology transfer

Reflecting the awareness of the limited role pure patent licenses play, package licensing of patents and trade secrets is becoming increasingly common. These licenses that actually enable licensees to implement technology rather than merely permitting its use goes one step further in terms of aiding the development of industry (Chapter 4).

6.2.2 Increased commitment of parties

Recent technology licensing platforms are starting to require increased commitment by both parties, such as royalty payments, know-how transfer and joint research in order to effectively encourage technology transfer (4.5). For parties that cannot afford technologies, international organizations are attempting to connect them to funding institutions (4.5).

6.2.3 Utilizing IP

The overall attitude towards IP has seen a gradual shift, from an obstacle to technology transfer to a tool for technology transfer (4.5). In newer schemes, especially in the pharmaceutical sector, IP has been increasingly used in order to differentiate prices and to create a symbiotic relationship between business for profits and pro bono activities (4.5). This paradigm shift shows us a possibility of IP playing a positive role in accelerating technology transfer.

6.3 Future Issues

This dissertation covers licensing regulations in two developing country jurisdictions and found some common issues in the regulations. Admittedly, there are limitations of the applicability of this research to other jurisdictions, as this research focused on in-depth analysis of regulations in each jurisdiction rather than comparative studies of a broader scope, including more jurisdictions.

In the future, the author suggests three major directions of studies that should be conducted. Firstly, comparative research on developing country licensing regulations aiming at proving the correlation between licensing regulations and the stage of development of the jurisdiction should be conducted, possibly using the major legislative issues pointed out in this dissertation as a tool for comparison. A second approach would be to analyze the effect of the change of licensing regulations on private practice. Lastly, more case studies on the history of the change of licensing regulations including the analysis of the causal relationship between the development of industry and the shift in licensing regulations is necessary. This research would provide a clear suggestions on the kind of regulations a country should adopt at a specific stage of development.

6.4 Technology transfer through licensing for development

Enhanced technology transfer for development has been the center of international debate since the 1960s. However, still now, after half a century, the amount of technology transfer remains insufficient. This dissertation shows possible ways intellectual property laws and policies could encourage technology transfer (or not be an obstacle thereof), and how businesses could utilize the intellectual property system to balance profits and their responsibility towards society. It found noteworthy private practices that takes advantage of the intellectual property system to establish win-win schemes between licensors and licensees, some of which are already used for supporting the economic and societal development of developing countries. International organizations, such as the World Intellectual Property Organization and the World Health Organization, have been playing an active and valuable role in creating a framework under which relevant parties, both private and public, could collaborate with each other through technology licensing or joint research. These examples show the possibility of IP as a facilitator of development.

The author hopes that the dissertation would make some contribution towards the ongoing debate of the relationship between IP and development and that it shows a way forward to a brighter future with more innovations that benefits more people in a fair and equitable manner.

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