등록번호	전력기술심사과-
등록일자	
결재일자	2018. 02.
공개여부	

		국 장
기 안	과 장	
최명환	성백문	
협 조	국제교육과장	

2017년 WIPO-QUT(호주 퀸즈랜드 공대) 지식재산 과정 참가 결과보고

2018. 2.

특 허 심 사 1국
전력기술심사과

훈 련 결 과 보 고 서 요 약 서

성 명	최명환	직급	사무관
훈련국	호주	훈련기간	2017.2.13.~2018.2.12 (1년)
훈련기관	퀸즈랜드 공과대학교	보고서 매수	123 매
훈련과제	WIPO-QUT 지식재산권법 석사과정		
보고서 제목	WIPO-QUT 지식재산권법 석사과정 국외훈련결과보고서		
내용 요약	**[과정 구성]** - 8개 과정으로 구성되어 청강수업, 토론, 에세이 작성을 병행 - ①지재권 개론, ②특허법, ③저작권법, ④상표법, ⑤디자인권 및 식물신품종 보호, ⑥전통지식 및 부정경쟁 방지법, ⑦지식재산 관리 및 상업화, 및 ⑧연구보고서 작성의 8개 과정 **[과정별 에세이 주요내용]** [과정①] 지재권 분쟁에서 대체적 분쟁 해결제도의 필요성 연구 - 지재권 분쟁에서 소송이외에 저비용으로 신속한 대체적 분쟁제도가 필요하나, 법적 강제성 및 판단에 대한 신뢰성 구축이 선결과제 [과정②] 특허침해 예외에서 실험적사용의 확대에 관한 연구 - 특허제도에서 실험적 사용은 산업발전을 위해 침해 예외로 인정되나 나라별로 인정 범위(상업적 의도의 존재여부, 제너릭 의약품 시험)가 차이가 있어 이를 살펴봄. [과정③] 컴퓨터 소프트웨어의 보호에 관한 연구 - 최근 중요성이 강조되고 있는 소프트웨어의 보호를 위해 저작권, 특허권적 측면에 대한 장단점을 살펴봄 [과정④] 상표패러디의 공정한 사용에 관한 연구 - 패러디 상표가 현재 침해행위로 판단되나, 원 상표와 확실히 구별되어 인식된다면 저작권 패러디가 “Fair use”로 인해 비침해로 판단되는 것처럼 상품의 정보전달을 위해 침		

	해 예외 필요 [과정⑤] 인테리어 디자인의 보호 방법에 관한 연구 - 실내 인테리어에 대한 디자인 보호를 위해 저작권, 부정경쟁방지법, 디자인 보호법적 측면에서 살펴봄 [과정⑥] NPE의 특허권 남용에 관한 규제방법 연구 - NPE의 순기능에 대해 살펴보고, NPE의 남용에 대해 국가별 정책을 살펴봄 [과정⑦] 대학에서의 기술이전에 관한 연구 - 대학에서 이루어진 연구개발이 산업현장으로 기술이전 되도록 위한 제도적 문제점 및 개선방안에 관한 연구 [과정⑧] 핀테크 산업에서 BM 발명의 보호에 관한 연구 - 핀테크에 대한 특허성 여부가 이슈이나, 이는 산업에 대한 정책적 결정에 따라 조정 가능한 것이고, 산업 활성화를 위해 특허성을 폭 넓게 인정하되 경쟁법적을 통한 규제 필요

목 차

- 2017년 WIPO-QUT 지재권 교육과정 훈련결과 -

Ⅰ. 훈련 개요

1. 목적 및 배경

○ 2017년 심사관 해외훈련사업에 따라 WIPO와 QUT*에서 공동 주관하는 'Master of Intellectual Property Law' 1년 과정(석사) 참가

* 호주 퀸즈랜드 공과대학교(QUT, Queensland University of Technology)

○ WIPO-QUT 석사과정은 각국 지재권 전문가를 대상으로 국제 지재권법 및 정책 전반에 대한 이론 및 실무 지식을 제공

○ 훈련 참가를 통해 국제 지식재산권 관련 이슈에 대한 실무적인 이해 증진 및 세계 각국의 교육 참가자들과의 인적 네트워크 구축

2. 훈련지 및 기간

○ 훈련기간 : 2017. 2. 13. ~ 2018. 2. 12. (1년)

○ 훈 련 지 : 퀸즈랜드 공과대학 QUT Queensland University of Technology (호주 브리즈번 소재)

3. 훈련 참가자

성 명	직 급	소 속	수행 업무
이상돈	기술서기관	특허심사 2국	특허 심사
장일석	공업사무관	특허심사 3국	특허 심사
최명환	방송통신사무관	특허심사 1국	특허 심사

※ WIPO-QUT 석사과정에 아시아-태평양 지역의 변호사, 공무원 등 총 31명 참가

Ⅱ. 교육 개요

1. 교육 개요

○ 교육명 : WIPO - QUT Master of Laws in Intellectual Property

○ 교육장소 : 퀸즐랜드 공과대학 법대

○ 과정구성 : 청강수업을 중심으로 주제토론, 현장견학, 그룹 토론을 병행

- 청강 수업 : 지식재산권 개요 및 관련 판례 학습
- 현장 견학 : 호주 특허청, 호주 교육청 등 방문
- 그룹 토론 : 그룹별 토의 및 발표

2. 과정구성

- 지재권 개론, 특허법, 저작권법, 상표법, 디자인권 및 식물신품종 보호, 전통지식 및 부정경쟁 방지법, 지식재산 관리 및 상업화, 및 최종 연구보고서의 8개 과정(Unit)으로 구성

- 각 과정(Unit)별로 구두 발표(Presentation), 주관식 문제 시험(Take-Home Exam.), 및 연구보고서(Research Paper)의 3가지를 종합하여 평가가 이루어짐

< '17년 WIPO-QUT 지재권 교육과정 구성 >

과 목 명	수업기간	담당교수	학점
제1학기			
지식재산 일반개요	5주간	Kamal Puri	12
특허와 생물관련 발명	6주간	Bryan Mercurio	12
저작 및 저작인접권	5주간	Kamal Puri	12
상표, 도메인네임 및 지리적표시	6주간	Anna Sharp	12
제2학기			
디자인 및 식물다양성보호	6주간	Kamal Puri	12
전통지식, 경쟁법 등 최근 이슈	6주간	Antony Taubman	12
지식재산의 상업화 및 관리	6주간	Philip Mendes	12
연구 과제(Research Project)	학기간	Matthew Rimmer	12

Ⅲ. 과정별 내용 및 주요 연구결과

1. 지식재산 일반개론 (General Introduction to Intellectual Property)

□ 교육기간 : 2017. 02. 27. ~ 03. 15.

□ 담당교수 : Kamal Puri 교수 (QUT)

□ 과정내용

○ 과정 개요 본 과정(Unit)은 지식재산권을 구성하는 각종 권리들의 종류와 역사에 대한 개괄적 소개를 포함. 각종 지식재산권에 대한 권리의 생성, 권리의 이전 및 상업적 이용에 대해 살펴보고, 파리조약으로부터 시작해서 지식재산권 관련 각종 국제조약의 역사를 살펴보면서 그로부터 어떻게 현재의 지식재산권의 모습과 관련 국제기구들이 형성되었는지를 알려줌. 그 외 호주 특허청의 역할과 아시아-태평양 지역의 지재권에 대한 간략한 소개도 포함 ○ 세부 내용 i) 지식재산권법에 대한 소개 (특허, 상표, 디자인, 저작권 및 관련 권리, 영업비밀, 식물 변종 보호, 지리적 표시, 전통 지식 등) ii) 호주 특허청의 역할 iii) WIPO의 역사, 조직 및 활동에 대한 소개 iv) 파리 조약, 지역별 특허청, TRIPS 협정, 세계무역기구(WTO) v) 지식재산권의 역할 vi) Research Paper 작성을 위한 연구 방법론 및 기법 vii) 아-태 지역 내 지재권 보호 관점

□ 주요 연구결과 - Research Paper

○ Topic : A study on ADR systems in Intellectual Property Disputes

1. The need for ADR(alternative dispute resolution) in Intellectual Property Disputes.

Intellectual property disputes such as patent litigation are continuing to increase worldwide. If the parties to the dispute attempt to resolve disputes through court system, many problems may arise. This litigation cause excessive cost, time-consuming and complicated procedures that often make the case unsuitable as a means of dispute resolution. These lots of litigation also may pose a burden to the court.
Especially when the litigation is international dispute rather than domestic dispute, the problems may become bigger. Since the laws of each country are different, international disputes, there is a question such as to which country's law would apply to this dispute. so it is a matter from which court will proceed the lawsuit. It may be more effective to solve this problem by 'Alternative Dispute Resolution (ADR)', which is cheaper, quicker, and more expert knowledge than litigation in the international disputes.

2. Overview of ADR

(1) The concept of ADR
An ADR that is not subject to judicial proceedings for dispute settlement is a set of procedures to alleviate the costly and time-consuming costs associated with conventional judicial proceedings that resolve disputes outside the courts for the benefit of all parties.

(2) Features of ADR.

First, ADR aims to resolve disputes quickly. Therefore, unlike a litigation proceeding under strict legal procedures, ADR is characterized by a simple procedure, a simple method of recognizing evidence. Therefore, it has the advantage of reaching a quick conclusion.
Second, the cost of using ADR is low. In particular, the advantages of ADR in the administration are more pronounced. The spread of ADR and its support are supported by economical factors such as low cost.
Third, ADR has expertise in the field. This is because ADR functions by the environment, consumer protection, and labor. For example, in the case of the environment, experts on the cause of disputes (dust, noise, smell, pollution, etc.) participate in the Environmental Dispute Coordination Committee, so that professional knowledge and trends can be immediately reflected in the dispute settlement.
Fourth, ADR is a closed process. In the process of dispute settlement, as much as possible, the court's intervention is minimized, respect for the decision of the parties themselves, the reduction of the attorney role, and minimal formal dispute settlement procedures are made unclassified unlike litigation. Or confidentiality of the service can be prevented from being leaked.
Fifth, it is international. Disputes between companies with foreign companies are complicated because of the problems of governing law and jurisdiction. ADR is a dispute resolution system that can solve these problems.

(3) Types of ADR.
1) Arbitration.
Arbitration is the procedure and means of resolving disputes to provide a corresponding remedy to the infringing party through an arbitration. One or more neutral third parties are selected to determine the proceedings and issues, It is an ADR method that simplifies court

proceedings. In most cases, the parties to the dispute must either directly select one or three arbitrator panels with expertise in the dispute, or participate in the selection process and make a decision.

2) Mediation.

It is an ADR method that enables neutral third parties to facilitate the settlement of disputes by assisting in the preparation and preparation of the consensus and settlement of disputes for settlement of disputes. Unlike arbitrators who make arbitrary judgments and binding decisions in arbitration, the mediator merely acts to make the settlement of the dispute more smoothly and that the parties to the dispute make an effort to reach consensus to be.

3) Negotiation.

Negotiations are informal and can be made at any time so that parties can reach an agreement before the use of other ADR dispute resolution schemes. Normally, these measures are often carried out directly by the parties. It also helps to clarify the importance of resolving the case and the purpose it is intended to accomplish and allows the other party to adapt to the next solution.

4) Early Neutral Assessment.

The Early Neutral Assessment is a way for the neutral expert to communicate to the representatives of both parties in advance of the incident in writing and to make preliminary assessments or agreements before the meeting date. If both parties do not want an agreement or the settlement does not go smoothly, the neutral expert will either narrow the issue of the case or discovery of evidence in the case and the scope of the legal motion in the case, It helps to organize time. Early Neutral Assessment can be a direct conversation between the

parties and an evaluation that is kept secret from the experts. The early neutrality assessment also has the advantage of narrowing the issue of the case and helping to focus on more important issues, and providing a non-binding statement through this process.

5) Summary Jury Trial.

The Summary Jury Trial seems to be similar to the trial, but it has the characteristic that the agents of both parties are given the opportunity to explain the case to the jury. It is a method that is often used when there is a large difference in opinion on the damages of agents, in the case of a trial, when jury members are concerned about the lack of understanding of legal concept, and when emotional factors make it difficult to reach consensus. Through the course of the summary jury trial, the parties have the advantage of obtaining a non-binding judgment of the jury of the trial and making the conditions for consensus and motivating the agents to prepare the case in advance if the trial fails.

6) Mini trial.

The mini trial is derived from mediation and is different from the actual trial, Ideally suited for resolving disputes between companies on patents, licensing, trademarks, copyright, etc.

Under the management of a neutral third party called an advisor, Decision-making delegates attended to hear about the whole event and the evidence. Delegates should be able to negotiate on their own. The advisors may not be present at this negotiation. If the negotiations of the delegates break down, the advisor will be able to present his opinion. Typically, a lot of consensus is reached through the comments of these advisers.

(4) International Organization for ADR.

1) The World Intellectual Property Organization (WIPO).

WIPO established the WIPO Arbitration and Mediation Center under the International Bureau in 1994 to resolve international commercial disputes related to intellectual property rights through the ADR. The WIPO Arbitration and Mediation Center was established in 1994 to facilitate arbitration, expedited arbitration, and expert determination services.

In addition, it provides an effective resolution mechanism for disputes related to the Internet and e-commerce, and has established a Uniform Domain Name Dispute Resolution Policy and resolves lots of internet domain disputes so far. Since It has a diverse range of arbitrators, through the database, each party is able to select the most appropriate arbitrator. In particular, the dispute area is specifically divided into film, media entertainment, arts and cultural heritage, franchising, intellectual property, life sciences, patents, R & D and technology transfer, energy, sports and trade fair disputes.

2) The International Court of Arbitration (ICC)

It is an international organization organized by business representatives from around the world in 1919. The ICC International Court of Arbitration was established by the ICC in 1923 for effective settlement of international commercial disputes and has grown into one of the most representative international arbitration organizations. The ICC has a secretariat in Paris, France, with the headquarters of the International Chamber of Commerce and has recently opened an office in Hong Kong. All official documents are published in English and French. The ICC is committed to protecting intellectual property rights, encouraging innovation and the development of knowledge-based industries,

promoting international trade, and creating a favorable atmosphere for foreign direct investment and technology transfer.

3) American Arbitration Association International Dispute Resolution Center (AAA / ICDR).

The American Arbitration Association (AAA), the world's largest dispute resolution body, established the International Arbitration Rules in 1991 and established the International Center for Dispute Resolution (ICDR), a separate International Dispute Resolution Center.

The AAA / ICDR is a representative ADR agency in the United States. It provides arbitration for experts such as patents, trademarks, and copyrights. It also presents and manages solutions that are specific to case disputes, and the Rules of Patent Disputes Supplementary Rules) Deals with patent-related disputes. The scale of technology-related arbitration has increased rapidly. In the early days, mainly the retirement judges formed an arbitrator and failed to effectively resolve issues that required technical expertise. As a result, AAA / ICDR strictly examines the qualifications for managing arbitrator candidates.

4) The London International Arbitration Court (LCIA).

The London Court of International Arbitration (LCIA) is the London Chamber of Arbitration established in 1892 under the leadership of the City of London and the London Chamber of Commerce. LCIA is one of the oldest international organizations for resolving commercial disputes and maintains a modern and forward-looking attitude and plays an important role in the utilization and development of arbitration. Regardless of the region or legal system, the LCIA will manage all parties in an effective, flexible and fair manner in dispute resolution procedures and will provide other ADR procedures.

3. The Study on ADR system for each country.

1)USA.

The Federal Supreme Court has instituted an ADR program that provides a variety of ways to resolve disputes in 1984. In the 1993 revision of the Federal Rule of Civil Procedure (FRCP), the discretion to specify an ADR by an outside third party and the 1998 ADR Act (Alternative Dispute Resolution Act of 1998) facilitate ADR. As a result of such efforts, most of the cases that are filed today are resolved by the ADR procedure. The ADR system in the United States is not limited to merely business disputes, but ADR system is settled in general civil litigation area.

The most common types of ADR in the US are negotiation, mediation, and arbitration. Among these, mediation plays a central role in the development of ADR. Court-linked ADR systems are also best developed, as well as court-annexed arbitration, court-annexed mediation, Judicial Settlement Conference, Early Neutral Evaluation (ENE), There are various forms such as abbreviated jury psychology, simplified psychology, and mediation-arbitration. In addition, ADR developed in a variety of forms, including negotiation, mediation.

In the United States, the ADR system is becoming a necessity, not an option for resolving disputes. Major ADR agencies include AAA, ACR, JAMS, CPR, and OR.

2) U.K.

The ADR in the UK is highly influenced by the United States, and its form is similar to that of the US ADR. However, unlike the United States, the United Kingdom has established the National Mediation Helpline (NMH) under the jurisdiction of the Department of Constitutional Affairs (DCA). The Civil Procedure Rules (CPR),

implemented in April 1994, encourage courts to use the appropriate ADR procedures and are based on the Arbitration Act of 1889, It plays an important role. The UK's ADR forms include: i) ombudsman, ii) regulations, iii) arbitration, iv) mediation. In the UK, mediation is the most active, ADR is said to be generally regarded as an adjustment. Major ADR agencies include CMC, CEDR, CIAarb, and CPS.

3) France.

In France, ADR plays a particularly important role in the area of labor law and family law, and has been used successfully in other consumer disputes and parental visits during divorce. Recent ADRs have increased interest in reconciliation in supervisory and corporate disputes, and attempts have been made in the criminal law field to encourage the use of mediation as an alternative to complaints.

France actually has a long tradition of ADR, with conciliation and mediation being the main forms. The judicial reconciliation and mediation system in France is stipulated in the Civil Procedure Act, which is an important ADR scheme that France is proud of. The most important feature is the flexibility and diversity of the procedure. The reconciliation introduced during the French Revolution was a form of judicial conciliation in which a civil judge was obliged to try to reconcile with a mandatory conciliation, but a judge, not a third party conciliateurs de justice Which became transformed into extrejudial conciliation that facilitated the settlement of disputes outside the judicial process and also had the character of arbitrary procedure. However, in the case of a dispute brought before the Labor Court or a divorce or segregation suit filed in the Family Court, a preliminary conciliation is forced. Major ADR agencies include CMAP and AMF.

4) China.

In recent years, the interest of ADR system in intellectual property rights has been increasing in China, and the discussion is spreading rapidly. In China, ADR is often referred to as intervention. Especially, business disputes are mainly used by the China International Trade & Arbitration Committee (CIETAC).
China is constantly improving the ADR system. In the ADR of intellectual property rights, a copyright dispute can be arbitrated pursuant to arbitration, arbitration or arbitration under a copyright contract, and 247) a patent dispute is a dispute between arbitrators (CIETAC) and arbitration committees in various regions of China. Major ADR agencies include CIETAC, CCPIT, and BAC.

5) Japan.
Japan has promulgated the ADR Act on the Promotion of Utilization of Dispute Settlement Procedures, and has been in force since 2007. At present, the most widely used dispute resolution system in Japan is the arbitration system. Especially in recent years, the use of the arbitration system has been remarkably diversified. Arbitration is attracting attention as a quick and inexpensive dispute settlement system for small - scale disputes arising from the daily life of the people, or in special legal fields such as international trade disputes or maritime disputes. The dispute resolution center of each local lawyer meeting is similar to the arbitration committee system in each region in terms of system close to the people's life.
Japan's ADRs can be divided into judicial ADRs, administrative ADRs, and civilian ADRs, depending on the dispute resolution body. In Japan, the center of the ADR is the judicial ADR that the court is responsible for, and the rate of use of the private ADR is not so high and it does not show any significant increase. Firstly, there is a lack of public awareness and understanding about the existence of ADR. The second

is the lack of information on private ADRs. Third, there are institutional limitations such as the fact that even if the ADR is attempting to resolve the dispute, the statute of limitations is ongoing and the agreement reached by ADR can not be enforced. It is pointed out that this is the cause. Major ADR agencies include JIPAC, JCAA, and SOFIT.

6) Singapore.

Singapore established the International Commercial Court of Justice (SICC) in 2015, appointed 12 international judges and then created the International Coordinator (SIMC) to establish a triangular coordination-arbitration-trial triangle centering on the Singapore International Arbitration Center and established a comprehensive ADR system in which disputes could be resolved in the manner preferred by the parties to the dispute.

Singapore is one of the most actively developing ADR systems in Asia, and is dreaming of becoming a global legal capital. Neutral evaluation, mediation and arbitration, domain dispute resolution services, online dispute resolution service (ODR) and various ADRs in the judiciary as well as international coordination and international arbitration based on mediation and arbitration systems. And expanding that area. Major ADR agencies include SMC and IAC.

4. Challenges for the development of ADR system in intellectual property disputes.

1) Legal perspective.

In order to remove the uncertainty in resolving international disputes, the parties to the dispute agree to comply with applicable laws and jurisdictions to be applied to the dispute before or even after the

occurrence of the dispute, It is seen that the consensus at the contracting stage of intellectual property rights is important.

2) Enforcement of agreements and decisions on ADR.
Compared to the courts system, the advantages of ADR are low cost of settlement, speed of settlement, and confidentiality. However, this is possible if there is no problem in executing the ADR's decision. An ADR that is not guaranteed to be enforced is rather likely to increase dispute resolution costs and extend the time span. Therefore, securing the execution of ADR decisions is an important factor in determining the success or failure of ADR. It is believed that if the international partnership structure between international ADR institutions is formed and mutual recognition is formed, the efficiency of international enforcement can be enhanced.

3) Build trust in ADR systems.
It is the discretion of the parties to the dispute to resolve the dispute or to use the ADR. However, it is believed that ADR will be actively considered if there is trust in the ADR system and understanding its characteristics and merits.

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2. 특허 및 생명공학 발명 (Patents & Biotechnological Inventions)

☐ **교육기간:** 2017. 03. 17. ~ 05. 05.

☐ **담당교수:** Dr. Ben McEniery (QUT)

☐ **과정내용**

○ 과정 개요

본 과정은 다양한 산업 분야의 창조적 활동을 선도하는 특허법의 역할에 대해 살펴보는 것을 목적으로 함. 이를 위해 특허권의 기원과 역할, 특허출원, 특허권을 얻기 위한 절차, 특허권의 성격, 특허협력조약, 국내외 정책 및 실무에 대하여 다룸

○ 세부 내용

i) 특허법의 역사, 철학, 및 경제학
ii) 특허출원(명세서, 청구범위, 국제분류), 특허권 획득 절차(파리조약, PCT 출원, 호주·유럽·미국의 국내 출원)
iii) 특허받을 수 있는 발명, 특허 제외 대상
iv) 특허성의 실체 심사 요건(신규성, 진보성, 산업상 이용가능성)
v) 특허권의 소유(선출원주의 vs. 선발명주의), 직무발명
vi) 특허권의 보호범위 및 보호기간
vii) 특허권 보호의 예외(실험적 실시, 권리소진, 병행수입, 강제실시권)
viii) 특허 침해(청구항 해석, 구제수단) 및 침해 주장에 대한 방어
ix) 영업 비밀과 특허 보호 사이의 관계와 지식재산권 관리
x) 기술의 상업화, 기술이전 및 라이센스 계약의 기초
xi) 특허협력조약(PCT)
xii) 특허법률사무소의 실무

□ 주요 연구결과 - Research Paper

○ Topic : Research on the extension of the experimental use exception in the patent system for patent quality improvement in domestic legislation

1. Overview.

There is no doubt that the patent system contributed to the remarkable development of science and technology. A number of researchers and companies are investing heavily in research and development with low probability of success because the patent system would protect their inventions successfully when their research and development is successful. However, in order to achieve industrial development through promoting technology development aimed at the patent system, it is necessary not only to protect the invention, but also to promote the use of the invention. There is also a need for a way to solve social problems due to strong monopoly rights. Competition law, the prohibition of abuse of rights in civil law, and compulsory licensing can be used to check the strong monopoly rights of these patent systems, but economic and political interests are intertwined about this. I think the best alternative is to reorganize the experimental use exception in the patent system. In other words, in order to solve the problems caused by the patent system, it is reasonable to solve it within the patent system, and it seems that the most reasonable alternative is the extension of experimental use exceptions. This is because the experimental use itself does not reach the stage of infringing the patent, but contributes to the quality improvement of the patented invention. I am going to examine the experimental use exception and various cases in some countries.

2. The role of the experimental use exception in the Patent System

An experiment or research is any planned activity that is undertaken to acquire the necessary knowledge in the process of understanding or verifying the content of an object or creating results. Even if a byproduct is obtained or a prototype is produced in such a process, it will be included in the scope of the experiment, but the production of the result of the experiment beyond the required level will not be considered as an experiment. Therefore, it is a matter of course that the act of making or accumulating promotional prototypes, producing and accumulating the output for the purpose of transferring the sale, and actually selling or transferring the resultant product is a patent infringement. The experiment use exceptions to patent infringement contribute to the advancement of technology and the implementation of the public interest. The admissions of experiment use exceptions are both an opportunity and a threat to corporations, universities and public institutions. Users can freely use existing patents for research purposes, and activities for developing new technologies can be resilient. On the other hand, if a patentee does not achieve technological progress through continuous research on patented technology, patentees 'patents may lose utility due to competitors' new technology. In any case, from a social perspective, technology innovation, competition within the market, and public interest can be promoted, contributing to industrial development. The experimental use exception can also serve as a balancing point for resolving conflicts between patent law and competition law. The patent system has an anticompetitive nature that gives the patentee an exclusive right for a certain period due to one of its purposes. As a result, the patent law is inevitably in conflict with the competition law, which aims to establish

the fair trade order by regulating monopoly and prohibiting unfair trade practices. In other words, recognizing the monopoly nature of patents and broadly recognizing the experimental use exception for research activities for the benefit of society as a whole, it can serve as a balancing point to resolve conflicts with competition law. Experimental use exception contributes to the quality improvement of patented inventions. If the experimental use exception is granted, researchers can be assured free research activities on existing patents, which means that the validity of the patents is continuously verified, and invalid patents are invalidated as a result of verification. In order for a patent to be registered, it must undergo rigorous examination by the Patent Office, but it is practically impossible for the Patent Office to fully validate the validity of all patents. Therefore, considering the fact that the most accurate understanding of the contents of a patent and the ability to verify it are the researchers in that field, the qualitative improvement effect of the patented invention obtained through the experimental use exception is considered to have a large effect.

3. The Review of the experimental use exception in various countries.

(1) The experimental use exception on TRIPS.

TRIPS(The Agreement on Trade-Related Aspects of Intellectual Property) grants exclusive rights in Article 28 (1) to prevent third parties from conducting patent inventions without the consent of the patent holder. However, Article 30 says that exceptions to exclusive rights be granted in the absence of unreasonable conflicts with the normal use of the patent in view of the legitimate interests of third parties or unreasonably infringing the legitimate interests of the patentee. This provision is generally interpreted as a declarative provision that states

the acts for the advancement of technology can be recognized as an exception to patent infringement.

(2) In the United States.

The use of a patented invention for research testing is recognized as an exception to patent infringement by the judiciary cases. The tendency of the US court case in this respect is to be allowed in pure scientific interest, and is considered to be a patent infringement in any case where the scope is limited and intended for commercial use. In other words, if there is a commercial intention to use the patented invention in any form, the infringement is recognized, and the existence of profit from the sale of the product is not related to the infringement judgment of the patent.

(3) In the European Union.

The EU Patent Convention(Community Patent Convention, CPC) recognizes the experimental use exception under the CPC 27 (b). It says that the rights granted by the patent do not extend to the conduct of the patented invention for experimental purposes. The fact that the clinical trials for the marketing of late generations are not regarded as a patent infringement among European countries seems to be accepted by legislation or precedent.
In the U.K., The United Kingdom Patent Act stipulates that Article 60 (5) does not constitute a patent infringement in the case of (a) for personal or non-commercial purposes, and (b) for the purpose of testing the patented invention itself. The UK court said that "if the primary purpose of a third-party research test is the commercial use of the patented invention, it can not be an exception to patent infringement".

As such, the UK is considered to have a stronger standard of 'exemption for research exams' relative to other European countries.
In France, Article 613 (5) of the Intellectual Property Rights Act stipulates that patent infringement does not apply to (a) conduct of private or non-commercial purposes, or (b) In the case of tests on the patented invention itself, the patent infringement is not applied. In France Court concluded that, in connection with clinical trials for late-stage pharmaceuticals, a trial to compare biological equivalence for the purpose of launching a substitute for a prior patent drug, or a patented invention The practice is said to be an 'exception to trial use'.
In the Germany, the German Patent Act, which was enacted until 1980, did not contain a patent infringement exemption for research trials. However, only the infringement exemption was granted for the purpose of research conducted in the pure personal area. In addition, if the competitor performs for the purpose of confirming whether the patented product is functioning properly, he or she acknowledges the exemption from infringement, but it was not permitted to conduct it with the business purpose. A representative precedent is the Ethofumesate case (1989). This case brought patent infringement lawsuits for testing the herbicide-related patents for the purpose of obtaining a license to sell the patented product immediately after that patent expire. The German Supreme Court ruled that this case would constitute a patent infringement, But only for the purpose of confirming the feasibility of the patented invention in relation to the scope would be permitted. The German Patent Act, amended in 1981, introduced regulations for exemptions from research and testing. This means that the German has adopted the "Experimental Use Exemption" of CPC 27 (b) as it is, and does not specifically mention the act of exemption from infringement, it is judged whether or not it is applied.

(4) In Japan.

Article 69 (1) of the Japanese Patent Act stipulates that the validity of patent rights will be restricted when a patented invention is conducted for research and testing purposes. 1) Experiments to investigate novelty and inventive step of patented invention, 2) in the case of a functional investigation to investigate whether the patented invention is feasible, whether it is in accordance with the specification, or does not cause side effects, 3) The case of improving the patented invention for the purpose of improving the invention in order to complete the better invention, exceptions of research and examination are recognized.

4. The challenges of the experimental use exceptions.

In the United States, Europe and Japan, experimental use exceptions are largely divided into judging the validity of patents, research for functional surveys or improved development, and research trials for obtaining tests and related laws. In most cases, experimental use exceptions were recognized for the implementation of patented inventions to satisfy simple scientific curiosity. If the patentee's profits are extremely protected and the experimental use exceptions are regarded as a patent infringement, this is supposed to be counter to the conventional purpose of the patent system. The question is whether to apply the exception of the research test if commercial intention is included in the implementation of the patented invention. The United States recognizes the exception of research and testing as a minimum and does not accept it as an exception if it has commercial intent. On the other hand, in the case of the EU, based on CPC Article 27 (b), the exemption of research and examination is relatively broadly recognized.

In other words, even if a test is started with a commercial intention, it is recognized as an exception if it intends to advance the technology.
In particular, experimental use exceptions are important in trials for licensing generic drugs. Whether the act of testing the patented medicines necessary for commercial approval of the generic drug manufacturing company is equivalent to the "experimental use exception" is an important issue. In response to this problem, US patent law compensates patent owner for erosion period by extension of the patent period and US patent law ensure liberalization of clinical trials during the patent period to ensure that generic drug manufacturers are equally positioned. The United States guarantees this through separate legislation, In the case of Germany and Japan, the generic drug manufacturers' clinical trials during the patent period are recognized as not infringement of patents, emphasizing the necessity of public interest or broad interpretation of the experimental use exceptions.

5. Domestic Legislation Considerations for the patent system.

Experimental use exceptions of major countries are common to the implementation of patented inventions based on genuine academic curiosity, but there are differences in other cases. So, it is at the core of the issue to what extent the grant of patent inventions beyond genuine academic curiosity will be recognized as experimental use exceptions. The most important part here is whether to give priority to the interests of the patentee or the public interest. I think that it is necessary to maximize the public utility function of the patent system by applying experimental use exceptions in the case of researches aiming at advancing technology, in order to minimize the side effects that the patent system can bring about through the smooth use of patents. In other words, I think it is necessary to interpret the

comprehensive interpretation so that industrial development can be pursued by finding a balance between the public interest and the private profit, away from the restrictive interpretation that the industrial development is limited within the limited scope of protection of the patentee's rights.

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3. 저작권 및 인접 보호권 (Copyright and Related Rights)

□ 교육기간 : 2017. 4. 11. ~ 5. 09.

□ 담당교수 : Kamal Puri 교수 (QUT)

□ 과정내용

○ 과정 개요

본 과정은 저작권의 보호 요건 및 보호대상과 저작권을 다루는 국제조약을 공부하고 디지털 시대에 있어 저작권법의 개념과 저작권법의 원리 및 정책을 다룸. 저작권법에 대하여 깊이 있는 지식을 학습하며, 저작권법의 최근 역사를 분석 및 평가하고, 빠른 기술 변화와 여러 압력에 대한 저작권법의 대응을 살펴봄. 또한 저작권법과 관련된 최신의 정책, 기술적 및 문화적 이슈를 조사하며 저작권과 연관된 현재의 법적 쟁점들을 비판적으로 평가하고 해법을 제시하는 능력을 배양하는 것을 목적으로 함

○ 세부 내용

i) 저작권 역사, 철학 및 중요성
ii) 저작권의 성립요건, 대상물 및 기간
iii) 저작권의 국제적 보호
iv) 저작재산권의 소유권 케이스분석
v) economic 및 moral right
vi) 디지털 시대의 저작권 보호 및 예외사항
vii) 무료 및 오픈 소스와 소프트웨어의 라이센싱
viii) 저작권 침해 대응 및 구제 수단
ix) 소프트웨어, 데이터베이스 및 인터넷과 저작권 보호

□ 주요 연구결과 - Research Paper

○ Topic : Study on protection of computer software with copyright and patents

1. Abstract

Recent advances in science and technology have made it important to effectively protect the software industry as it evolves. Software can be replicated at low cost, making it easy to pirate, and once it is built, it can spread quickly over the Internet. Software is protected worldwide under copyright law. However, software is a creator of technical ideas, and since there are ideas and expressions together, it is limited to protect it with copyright only. Therefore, the software "expression" is protected by copyright, but the "function" of the software fixed in the medium needs to be protected as a patent. Patents can protect software more strongly than copyrights. This is because even if the representation of any software is different, it can be prohibited by patent rights if the function is based on the same idea. However, since the development of the software is made through the source code, it is difficult to satisfy the inventive requirement of the patent. There is also a difficulty in complicated procedures to acquire patents. On the other hand, since copyright protects the representation of software, it is easy to protect the expression as long as it is expressed in software programming language. However, the expression of the programming language is limited to copyrights because the programmer can easily differentiate easily. Therefore, I would like to investigate of the advantages and disadvantages of protecting software with patents and copyrights.

2. Definition and Features of Software

1) Definition

Software is a set of commands and data, and it's functions performed by the operation of the program. A program is a set of sequential instructions that are used to process a task using a computer. Software is developed to be used in the various fields we face, and its importance is relatively high compared to hardware, because it enables us to solve problems more efficiently and scientifically.

2) Features

- Short Life Cycle : Software has a short life cycle because it is easy to make and distribute. Therefore, the software development cycle has a very short period of time compared to the copyright protection period
- Testable and changeable : Software is tested not only during development but also after launch. And if a problem occurs, it can be fixed at any time.
- Replicable : The software can be copied. If you have a computer and the storage capacity is sufficient, it is very easy to copy the software
- Conformity : Software does not end once in release, users need to modify existing functions and implement new functions while using software, so the software continuously changes according to users' needs. Over time, the hardware also changes and the software changes to be optimized for changing hardware

3) Characteristics of software in terms of patents

- Functioning is more important than expression : The source code of the software is literally valuable as a work, and the program in the final product is worthy of its function. A program that performs the same action has complete substitution in the marketplace even though the representation is written in different characters. Therefore, the function of the software is more important than the expression, so

protecting only the value of the source code and protecting it is a limitation that the program of the final product can not be protected.
- Software and hardware are interoperable : The structure of the hardware becomes complicated and the function of the software replaces the hardware as the computer and the CPU and the OS are mounted. In other words, because software is a function of hardware, it is necessary to protect software like patents protect hardware.

4) Characteristics of software in terms of copyrights
The source code of the software is made up of human readable and writable characters, making it easy to duplicate. Thus, protecting the source code with copyright is beneficial in that it is protected at the same time as it is created. However, the program at the final product stage does not know the expression of human thought because the source code is translated into machine language.

3. The need for software protection
At the time the computer was first developed, the software was close to the concept of a service provided with expensive hardware. However, as software technology has developed and software that implements various functions has increased, economic value has gradually changed. For the first time, IBM has begun to price software and pricing separately for hardware and software, and software has begun to take on an independent value in earnest. In the United States, after embracing the concept of computer programs in the protection of copyright law, most countries have begun to protect computer programs, software, and computer-related inventions with copyright or patent laws. Since the economic value of software has increased, investment in software now exceeds hardware. In addition, due to the development of technology, package programs appeared and computer

programs began to be distributed as industrial materials. As a result, many companies have begun to develop technology by increasing their investment competitively, and they are recognized as a very important field in the nation. Today's software is becoming a key element in the operation of state-based infrastructure for power, telecommunications, logistics and finance through artificial intelligence. Flaws in software can cause damage to national security and national security, such as disruption of communications networks, financial transactions interruptions, industrial and personal information leaks. In other words, securing the reliability of software and related technology is directly linked to the survival of the nation. However, such software is costly in its development process, but is unlikely to succeed after development, and is characterized by the difficulty of maintenance and management of products after development due to the problem of piracy. In addition, there is little or no difference in the quality of clones and developments, or software developers are losing patience as clones may have better quality. In addition, software has a value as a public good. Once distributed, the computer program is very fast and spreads widely, so it is easy to share with many people. Therefore, even though the cost and effort of creation are considerably high, the imitation and spreading are so easy, and if there is no active protection policy of the government, it can lead to market failure.

4. Software Protection Status

Most countries protect their software with copyright laws. This is largely influenced by Article 10, Paragraph 1 of the TRIPs Agreement, which states that "computer programs are protected by literary works regardless of source code and object code". It is also because the programming language is advanced and very similar to the language used by humans. Expressions contained in literary works are intended

to appeal to human emotions, but expressions of functional works such as software exist to achieve a specific purpose. In the case of patents, the requirements for establishment and examination procedures are very strict, while the protection period is as short as 20 years. However, rights are created at the same time as copyright, but the protection period is more than 50 years. Therefore, protection of the technological thought itself by copyright causes unfair phenomenon which is protected by the mitigated requirement.

1) Legal concept of software

Software is generally used to encompass a program in an intellectual property law system, sometimes Software is referred as same as programs. Software has a short life cycle, and source code exists.

2) Software Definition in WIPO

According to WIPO's guideline "Model Provisions on the Protection of Computer Software," the scope of the software includes computer programs, program specifications, and supporting materials. A computer program is an instruction that is stored in a machine-readable medium to cause the machine to perform a specific function. A program specifications is created in the process of developing a program, and it is written in the form of characters and figures as shown in the flow chart in order to display the procedure of creating the program. supporting materials refers to all data written to help understand the program, such as the manual.

3) Software protection in the United States

In the United States, software was not initially protected by copyright law. At that time, the computer market was dominated by hardware, and software was nothing more than an adjunct together with

hardware. Since then, the hardware-centric computer market has gradually begun to shift to software, but software has not been recognized as a unique transaction item because it was thought of as a service item when hardware was purchased. The US Department of Justice sued IBM for antitrust violations, and software became recognized as a proprietary product. IBM has bundled computer mainframe and software within the United States and has provided maintenance services accordingly. The US Department of Justice filed a lawsuit against the Antitrust Act, and IBM began selling hardware and software separately after being charged with antitrust violations. As a result of these lawsuits, hardware and software are recognized as different products, which necessitates individual protection of the software. However, there were many controversies about how to effectively protect the software because it differs from the existing concept. In 1974, the United States Congress created the computer and the National Commission on New Technological Users of Copyrighted Works (CONTU). As a result, in the revision of the Copyright Act of 1980, software including object code form was defined as a copyrighted work and started to be protected. CONTU did not entirely exclude the possibility of software patents, but it was desirable for copyright protection to be effective in protecting software for reasons such as protection methods, promotion periods, and rights acquisition procedures. Protection of software in the United States is by copyright and patent laws, but it is too broad to be effective in protecting actual programs and has caused much controversy.

4) Software protection in Japan

The Japanese Copyright Act sees program works as independent protection from copyrighted works. It does not protect the program separately, but it only regulates the reproduction, registration and

infringement of the program. Japanese copyright law states that "the owner of a reproduction of a program work may reproduce the work insofar as it is deemed necessary to use the work on its own computer. however, provided that this shall not apply to the case where the provisions of Article 113 (2) apply to the use of the copy relating to the use". In such a case, the reproduction shall not be preserved after the owner of the reproduction has no ownership of any of the copies.

5) Software protection in European Union

In 1973, the European Community concluded a European Patent Convention to facilitate the protection of inventions in Europe. This Convention is a substantive and legal treaty that contains the various interests of Member States for the protection of patent law of useful technology. The European Patent Convention (EPC) does not explicitly state the definition of invention as different from the United States, but lists inventions that are not permitted by the Patent Act (Article 52). Paragraph 2 (C) excludes computer programs from patentable inventions. However, Article 52 (3) of the European Patent Convention stipulates that the items listed in Paragraph 2 are rejected only when the patent is filed as "as such", thereby opening the possibility of a patent for the software. In 1991, the Council of Europe established the European Union guidelines for software protection. It regarded the program work as a literary work and protected only the representation of the computer program by the copyright law. Currently, software is protected by copyright laws in Europe, and the European Patent Office has begun to recognize the patentability of software. Since the regulations of the European Patent Office concerning the patentability of software are more open to domestic laws than those of the respective member countries, those who wish to patent a software related invention are often filed in the European Patent Office. EU also

published the EU Guidelines on Legal Protection of Programs. This EU Directive protects the representation of the program with copyright but does not protect the principles or ideas underlying the program interface. The protection period is for the author's survival period and 50 years after death or the death of the last surviving author.

6) Related Cases

- Gottschalk vs. Benson case (The U.S case):ThiscasewasthefirstdecisionoftheUnitedStatesSupremeCourtonthepatentabilityofsoftware.TheSupremeCourtconcludedthatsimplyprogrammingamathematicalalgorithmwasnottheobjectofapatent.TheUSSupremeCourthasstatedthat"thekeytodeterminingwhetherinventionscanbepatentedwithoutbeinglinkedtoaparticularmachineortoolistoconvertanymaterialtoanotherstateortoanother."Inaddition,themethodthatwasthesubjectofthiscasewasanalgorithmthatjudgedthatitisasimplethoughtandcannotbepatentedbecauseitislikeanaturallaw.Thepointofthisrulingfollowsaprecedentthatnaturalphenomena,mentalprocesses,andabstractintellectualideascannotbepatentable.
- Vicom case (EU case) : In this case, the invention was a mathematical improvement of the image quality of digital images in the form of data arrays. The European Patent Office first judged that inventions including mathematical algorithms could be patentable. The European Patent Office judged the patentability of the program as follows. Claims directly related to a technical process in a hardware or software controlled program can not be recognized as a computer program itself. Therefore, it is judged that the invention can be patented if it is to solve the technical problem by using it rather than the mathematical algorithm itself.
- IBM case (EU case) : This case relates to an invention relating to a resource recovery method in a computer system and a computer program, and an invention relating to an overlay technology on a

computer display. The problem in this case is the "software code" stored in the computer. In Article 52 (2) of the European Patent Convention, the computer program is not subject to the patent, but in the third paragraph, it is rejected only when the patent is filed as "as such". So this cause ambiguous interpretation. The European Patent Office (EPO) said that in the European Patent Convention, the exclusion of the computer program itself from the patent is limited to cases where the program is an abstract creation or a technical feature is excluded, while a computer program with a technical characteristic is qualified. That is, when a computer program is run on a computer, it is determined that the program is included in the patent if it causes a technical effect between the program and the computer beyond the scope of normal physical interaction.

5. The advantages and disadvantages of protecting software with patents

1) Advantages

The most important feature of patent protection is that it can protect ideas. As the importance of business methods on the Internet grows in importance, it is necessary to protect the ideas of programs developed for certain purposes. Computer program patents are protected against independently developed programs if they are based on the same concept as well as imitators. In addition, because it can accumulate the prior art based on the program patent publication, overlapping investment is prevented. Program patents allow investors to invest a large amount of capital in the company or new market participants to invest resources in research and development. Patent assets may be used for transactions with other companies

2) Disadvantages

Increasing technological innovation and re-use are widespread in the program industry. And because of the need to maintain interoperability between programs and systems, the scope of improvements is fairly limited. That is, the need for interoperability limits the choice of subsequent developers. However, because patents are given when there is a significant contribution to existing technologies, protection of incremental technological innovations without inventiveness is not in line with the purpose of the patent system. Almost every program developer can unintentionally infringe a patent because a typical program consists of thousands of elements and the solution to a problem depends on the former programmer. It is impossible to check that all program elements do not infringe any of the numerous patents already patented. Because program development is relatively not time and money consuming and technological innovation is easy, technology innovation is not hampered without a patent. Moreover, in general, the economic life span of program technology innovation is much shorter than the 20 year period granted by the Patent Act. In other words, the market distortion effect of program patents may be much larger than other patents. Program patents are inadequate in that the program source code developed by the program developers has been kept secret, so that the relevant prior art is not sufficiently publicized. This source code is difficult to search. This tendency leads to inadequate prior art search and difficulties in patent examination.

6. The advantages and disadvantages of protecting software with copyrights

1) Advantages

Copyright is acquired naturally, so there is no need for time, effort or

money. Copyright lasts at least 50 years after the author's death. Because it is cheap, automatic and effective, many companies use copyrights as a major safeguard. Copyright is convenient for small companies. Program copyright effectively protects the source code. In a system without a program patent, program developers can keep the program source code secret. By keeping the source code secret, program developers can hide copyright infringement.

2) Disadvantages

Text and actions are largely independent. So even if you protect the program text, the competitor can copy the program action. The ability to legally copy valuable actions will reduce incentives for innovation. Copyright law does not protect the behavior of the program, just as it does not protect the operation of the physical machine or its internal design. For this reason, copyright tends to be relatively narrowly protected. An important feature inherent in the program is not infringed if it is expressed in a different way. Copyright protects only the specific form in which ideas or ideas are expressed. Other people can use concepts and ideas. Furthermore, copyright does not protect independently developed programs. If another person independently developed the same program, he can use it freely. Also, considering that the lifetime of the program product is short and the patent protection period is 20 years, the copyright protection period is too long.

7. Conclusion

Most of the innovative program developments happened without patent protection. Much of this has been developed by individuals and SMEs. If a computer program is protected by a patent, it will be a burden because the SMEs need to make sure that they are infringing their

patents by paying time and effort, as well as filing a patent and exercising patent rights. It is necessary to consider whether expanding the scope of the program patents will be appropriate for technological innovation, since excessive protection will hinder competition and cost society, while narrow protection will undermine the inventor's desire for technological innovation. It is therefore necessary to examine whether protection is given in proportion to what the invention contributes to society. Since existing systems are based on the concept of exclusive ownership rights, I believe that program protection by existing systems interferes with the subsequent technological innovation of computer programs with the characteristics of continuous technological innovation. Therefore, it is necessary to find alternatives to existing patent system and copyright system. A reasonable alternative should be able to provide sufficient rewards for program technology innovation while providing reward for innovators within a range that does not interfere with subsequent innovation.

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4. 상표, 도메인 네임 및 지리적 표시 (Trade Marks, Domain Names and Geographical Indications)

□ 교육기간 : 2017. 05. 17. ~ 06. 21.

□ 담당교수 : Anna Sharpe 변리사 (Clayton Utz 특허사무소)
Kellie Stonier 변리사 (Griffith Hack 특허사무소)
Sean Mullen 법률담당과장 (Queensland 주정부)

□ 과정내용

○ 과정 개요

본 과정에서는 상표를 보호하는 취지를 이해하고, 상표의 등록요건과 심사기준, 심사절차 등을 소개함. 최근 새롭게 도입된 비전형 상표에 대하여 이해하고, 상표의 국제적 보호를 위한 마드리드 시스템을 취지와 절차, 국제상표 분류체계 등을 학습하였음. 상표와 관련된 지재권으로서 인터넷 도메인 네임과 지리적 표시의 보호방법, 등록절차 및 침해문제 등도 다루었음.

○ 세부 내용

i) 상표법 개론
ii) 비전형 상표 (소리상표, 냄새상표, 동작상표, 입체상표 등)
iii) 등록요건 및 심사기준
iv) 상표보호와 침해
v) 마드리드 시스템
vi) 지리적 표시의 보호
vii) 인터넷 도메인네임의 보호

□ 주요 연구결과 - Research Paper

○ Topic : Fair use with trademark parody in South Korea

1. Research question

In the case of the copyright law, if it is recognized as a parody, it will be free from copyright infringement in accordance with the "fair use" provision. However, the Trademark Law and the Unfair Competition Prevention Law do not have such provisions, so they are treated as general trademark infringement in Korea. Therefore, I am going to examine the relationship between trademark parody and trademark law and unfair competition law, and examine how trademark parody can be protected in Korea.

2. Definition of trademark parody

Trademark parody is the creation of a new brand that is different from the original by using existing trademarks. Parody is not a mere imitation, but a good means of communicating, providing criticism or humor while humorizing the content of existing trademarks. However, Parody conflicts with the trademark rights of others in that it requires the use of original trademark.

3. The position of trademark parody in South Korea

The Korean Trademark Law recognizes infringement of a trademark without considering the possibility of source confusion if the trademark is the same or similar in judging infringement of the trademark. However, in the case of a trademark parody, the trademark parody will constitute a trademark infringement in view of the standard of infringement judgment of the trademark law since it is necessary to remind the original trademark. However, even if there is no possibility

of confusion between the original trademark and the parody trademark, if the trademark infringement is regarded as a trademark infringement simply because it is the same or similar, it may result in excessive extension of the rights of the trademark owner, which may result in restriction of freedom of expression.

The Unfair Competition law shall be regarded as an infringement if it causes the possibility of confusion by being used for the same or similar goods as the original trademark. Trademark infringement is defined as a case in which a trademark is diluted even if it is used for a product other than the same or similar product as the trademark. Because the purpose of the parody is criticism or humor, dilution by the impairment of reputation of the original trademark can be claimed. Dilution aims to protect the proprietary rights of the trademark owner. That is, the main purpose is to prohibit the act of reducing the selling power of the trademark by using a trademark substantially the same as a famous trademark for a non - competing product or service. In the past, the use of the trademark "SAMSUNG" for adult products did not constitute an infringement of trademark rights because there is no possibility of confusion with the two products. The dilution theory is that there is a need to protect the trademark until it is used in adult goods. The reason for this is that the trademark "SAMSUNG", which has a strong sense of identity and reputation, is used in adult products, which can damage the trust or reputation of the consumers and reduce the sales force. It is therefore a dilution to protect the proprietary value invested in the trademark by allowing the trademark owner to ban such use.

4. Necessity of protecting trademark parody

Trademark parody could not be protected according to the Trademark Law and the Unfair competition law in South Korea as above.

However, as the trademark law protects consumers' trust in the trademark, it is reasonable to make an exception to the possibility of confusion in the source of the parody.
The prohibition of dilution in the Unfair Competition law has the problem that the freedom of expression of the general public can be reduced. In particular, the ban on the use of the trademark in recognition of the possibility of dilution may lead to serious infringement on freedom of expression. Furthermore, if the main purpose of a parody trademark is not to sell a commodity using the credit of the original trademark owner but to give a laugh and humor by satirizing a famous trademark, the parody product should be protected by freedom of expression.
Therefore, I think trademark parody should be protected with these reasons and we can use fair use concept of copyright to this trademark parody under trademark law in South Korea.
Major countries' attitudes towards fair use concept under trademark law

1) TRIPS
Article 16 of the TRIS Agreement defines the rights of trademark owners. The owner of the registered trademark shall have the exclusive right to prohibit the use of the trademark confused in the course of the transaction if there is a possibility of confusion due to the use of the same or similar trademark. That is, there is a possibility of confusion when using the same label for the same goods or services.
Article 17 of the TRIPS Agreement corresponds to fair use. Article 17 of the TRIPS Agreement states that Member States may grant limited exceptions to rights granted by trademarks, such as the fair use of descriptive use. And that such exceptions should take into account the legitimate interests of the trademark owner and third parties.

2) Paris Convention

The Paris Convention does not explicitly prescribe the use of fair use in the use of descriptive use as in the TRIPS Agreement. However, it provides minimum practical standards for the scope of protection of trademarks. In particular, Article 10-2 of the Paris Convention stipulates that all unfair competition practices are prohibited, and that unfair competition is an act that is contrary to "honest practices in industrial or commercial matters"

3) U.S.

Article 1115 (b) (4) of the United States Trademark Law states that "use claimed to be an infringement is not a use as a trademark, but rather a name or an expression of one's own business, and in fair good faith, The trademark infringement case "can not be claimed. This provision is called descriptive fair use. Even if a new discernment is acquired by descriptive use, it is interpreted that the above clause is applied to the original descriptive use to limit the validity of the trademark right. The Supreme Court of the United States has asserted that the defendant can claim fair use without having to prove that there is no possibility of confusion if the label is used fairly and descriptively in good faith.

4) Europe union

Information on fair use is provided in Article 12 of the European Community Trademark Rule. Article 12 states that if you use your name or address in good faith practices, you do not infringe the trademark of the registered trademark. It also restricts the validity of trademark rights when it is deemed necessary to use third parties in commercial transactions such as descriptive uses.

5) Germany

Article 23 of the German Trademark Law provides for fair use. When a third party uses his or her name in commerce to describe the characteristics of a good or service and uses the trademark of another to describe the use of the part or supplementary part, And that the trademark right is not valid unless it is contrary to the public order. The difference between Article 23 of the German Trademark Act and the corresponding Article 12 of the European Community Trademark Rule is that in the case of Germany the expression "not contrary to public order" is used and in the case of the European Community Trademark Rules the term "fair practice" is used. This is due to differences in linguistic expressions and is consistent with the content. The demand for use in accordance with fair practices and the requirement not to be contrary to public order and morals are merely other expressions that demand that they should not be regarded as 'unfair competition practice'.

6) U.K.

The contents of Article 11 (2) of the UK Trademark Act are defined in the same way as Article 12 of the European Trademark Law. Whether or not the use is a fair practice is interpreted by the English courts as the most important requirement for the application of this provision.

7) Japan

Article 26 of the Japanese Trademark Law provides that the scope of trademark rights does not extend. The trademark right shall not be exercised if the trademark is marked as "normal use" . However, even in the case of the name, it is stipulated that the trademark right is effective in the case of using for the purpose of unfair competition after registering the trademark setting. On the other hand, the US trademark law requires the use of "good faith" as a requirement to restrict the

validity of a trademark right. It is also comparable to the European Community Trademark Regulations, which require that they be used in accordance with 'fair practices'.

5. Applying Fair use concept to trademark parody in South Korea

In the case of foreign trademark parody, the parody is judged by the dilution problem of trademark in the United States and the liability of illegal act in Germany. In the case of the United States, the court's dispute over the trademark parody is centered around the recognition of dilution. Reflecting this, the trademark anti-dilution law revised in 2006 defines parody as one of fair use. A case in which a court in the United States considers more freedom of expression of a parodist than the right of a trademark owner is the case of not excessive criticism on a product. For parodies of this purpose, US courts widely acknowledge freedom of expression. In the case of Germany, dilution is mainly discussed, but the responsibility for illegal acts is recognized widely in trademark parody. In the case of a trademark parody for the purpose of humor, without the purpose of criticism or satire, Germany, unlike the United States, asks for general liability. Germany has a strict attitude toward parody than the United States.

Trademark parody is not easy to obtain permission from a trademark owner because it reduces the value of trademark owner's trademark through criticism or humor of famous brand name. Trademark parody, however, plays a positive role in providing information to consumers about the product and also it is contributing to the public interest. Therefore, I think that trademark parody is necessary for the balance between the trademark owner and the user. For this, I think it is necessary to review the concept of fair use and freedom of expression.

1) Fair use in US trademark law for trademark parody

The fair use concept recognized in the US Federal Trademark Dilution Act is that, despite the dilution caused by the use of the trademark of another person, the trademark right is restricted in the case of using the trademark of another person fairly in describing the product. However, the Korean Trademark law or the Unfair Competition law does not constitute a trademark infringement, regardless of confusion or dilution, if the trademark is not used as a source indication of goods. This is because the Korean Trademark Law requires the trademark to be used as a trademark as a requirement of trademark infringement. Therefore, if the Korean Trademark Law adopts the fair use concept, it is a problem of whether to restrict trademark in terms of the balance of legal interests between the trademark owner and the user even if it causes dilution or confusion by using the trademark of another person as a trademark.

2) Fair use in Korean trademark law

I believe that it is necessary to protect the trademark parody by introducing the concept of fair use of copyright in the trademark law. In fact, a trademark parody is not likely to be confused with the originating trademark of the origin of the product, but it is likely to be diluted by mocking or criticizing the trademark. In order to be recognized for fair use of a trademark in the event of dilution, the interests of the trademark owner and the public should be compared to the benefit gained from the parody so that the public interest is greater. As the copyright law can restrict the copyright for the development of the culture, the trademark law may restrict the rights of the trademark owner if the interests of the consumer are superior to the interests of the trademark owner. Considering that parody delivers certain information to consumers through criticism of the trademark owner or product, this can be considered fair use. However, if the parody causes

confusion about the product or the trademark owner, there is no reason to admit fair use. Parodying famous trademarks of other people and informing them of their defects or problems provides accurate information to consumers or performs positive functions for public interest. This is one of the purposes pursued by the trademark law. In the case of carrying out the information providing function of notifying the defects of the goods by parodying the trademark of the other person, it is necessary to protect the trademark right as the fair use even if the use of the trademark is used.

3) Freedom of expression

If the purpose of trademark parody is to provide consumers with laughing at famous trademarks, the parody brand should be protected by freedom of expression. If the conflict of interest between the trademark owner and the parodist paradigm can not be solved by fair use, the balance of profits between the trademark owner and the parodist should be resolved by a balance appropriate to the trademark rights and freedom of expression

6. Conclusion

Parody is not a mere imitation, but a good means of communicating, providing criticism or humor while humorizing the content of existing trademarks.

However, Parody conflicts with the trademark rights of others in that it requires the use of a original trademark. In other words, since the trademark parody should be reminded of the original trademark, the trademark parody will constitute the trademark infringement if the infringement judgment is based on the trademark law. Therefore, a case that can be disputed with a real parody may be misunderstood as a problem of a similar trademark.

In general, if a trademark parody has a legal dispute, the issue is centered on whether it is confusing with the original trademark and freedom of expression. It also appears that trademark parody is not allowed if trademark owners lose reputation or credit due to the parody.

In my opinion, I think that if there is a conflict between trademark owner's interests and trademark parody expressions, trademark parody should be protected more. The parody is based on a clear distinction of the original trademark from its concept. If parody is confused with the original trademark, this is not a parody problem as a failed parody, but a general trademark infringement problem. Therefore, trademark parody does not cause confusion about the trademark even though the trademark appears to be similar, because it makes consumers think of the original trademark and at the same time it makes consumers recognize the parody as a parody.

Also, in terms of economic impact, parody does not affect the sale of famous trademark products. Rather, the parody causes the famous brand to be remembered once more. I think that The act of using a famous trademark only as a humorous parody should be tolerated by the owner of the trademark. I think that being a parody is proving that the trademark is famous.

In addition, trademark parody plays a positive role in informing the public through criticism or humor. However, the trademark owner will not allow trademark parody because the parody can make the company's credit worse. Therefore, it is necessary to protect the parody through proper balance between the trademark owner and the user. As a method to protect parody, I think that it is necessary to apply the concept of fair use of copyright to trademark in an expanded manner.

Finally, when judging a trademark parody dispute, it is necessary to evaluate the value of parody ’s humor to maximize the value of expression for customers.

5. 디자인 및 식물다양성보호 (Industrial Designs and Plant Variety Right)

□ 교육기간 : 2017. 07. 17. ~ 08. 30.

□ 담당교수 : Kamal Puri 교수, Mark Perry 교수(WIPO)

□ 과정내용

○ 과정 개요
본 과정은 두개의 과정으로 구성되어 있음. 디자인 보호법 과정은 디자인 제도의 역사, 경제적인 측면, 디자인 보호의 목적, 디자인 출원방법, 등록절차 등에 관한 전반적인 내용을 검토하며, 식물 다양성 보호 과정에서는 식물 육종가의 권리 보호를 위한 식물신품종 제도에 관해서 소개하였음.

○ 세부 내용
[디자인 보호법 과정]
i) 디자인제도 개관
ii) 보호를 위한 실체적 요건
iii) 디자인권 침해 및 방어
iv) 디자인권의 소유, 이전 및 실시
v) 디자인권의 국제적 보호
vi) 디자인권과 저작권의 중첩
vii) 디자인 사무 실무

[식물 다양성 보호 과정]
i) UPOV 개관
ii) 식물신품종 심사요건
iii) 다른 국제조약(TRIPS, CBD, ITPGRFA 등)과의 관계

□ 주요 연구결과 - Research Paper

○ Topic : Study on the protection system and protection scope of interior design in Korea

1. Abstract

Protection of design rights has been a very important issue these days. The fact that the dispute between Samsung and Apple is related to design rights, not from the point of view of technology patents, demonstrates the importance of protection of design rights. Interior design is one of the important design fields, and the interior design industry has been growing in recent years. Interior design has a big impact on business sales and customer attraction. As in other design areas, interior design is important to respecting creativity and defending against imitation and infringement. In the case of interior design, the problem of imitation of franchise design in Korea has been continuously pointed out. It is not uncommon to find that there is a case of dispute related to interior design, which shows that the need for protection of interior design rights is increasing in Korea. However, there is no study on the protection system and protection scope of interior design field in Korea. Therefore, in order to proactively protect the interior design in Korea, it is necessary to understand the problems of the protection system in Korea by comparing with the other country system based on the understanding of the present legal system.

1) Examples of interior design

(1) Residential space


(2) Commercial space


2) Two cases about interior design disputes in Korea

(Case 1) Honeycomb Ice cream shop disputes about products, designs, interiors and interiors

Company A	Company B
	
	
	

This case did not claim design protection Act for interior, and it only claimed unfair competition Act for the interior. But the original author lost. In order to be able to say that the commodity is imitated, the Supreme Court says that the commodity must be formalized as well as morphologically specific to recognize that it is a particular commodity. In other words, Honeycomb Ice cream is not a pre-made product, but rather a product that is made at that time when there is an order, so it is difficult to have a certain form of product, so there isn't a certain type of product that is mentioned in the Unfair Competition Prevention Act

(Case 2) Imitation of small businesses by large companies
Company ACompany B

Company A	Company B
	
	
	

In this case, the court ruled that the interior and operation methods do not constitute infringement under the Unfair Competition Prevention Act.

In both of above two cases, Interior design can claim the protection of unfair competition behavior under the Unfair Competition Prevention Act in lawsuits, but its rights are very difficult to be recognized.

2. Protection scope of design protection in Korea

1) History of change in Korea's Design Protection Act

As changes in the industry have changed the concept of design and have incorporated a wider category into the design, there has been a demand for a broader range of design protection. Accordingly, the design protection Act was revised several times to expand the number of items to be protected. In 2001, part of the article (including image design) was included, and in 2004, typeface was included. Korea also joined the Locarno Agreement in 2011 to respond to international demands, and as a result, conflicts with existing laws in the scope of design protection. The Locarno classification includes logos, graphic symbols, characters, and interior designs that are not defined as articles of the Korean Design Protection Act.

(1) The definition of article under the Design Protection Act

In Article 2 of the Design Protection Act, the design is defined as "the shape, shape or color of the article [including part of the article and typeface] or a combination of them, which causes visual impairment through visual". Under the provisions of these laws, what is protected

under the Design Protection Act must be "article", and it is required to have visual and aesthetic qualities.

(2) The definition of Article

The design protection Act has the definition of the design as mentioned above, but does not directly introduce the definition of the Article. However, a person who intends to apply for a design registration shall prescribe the classification of the articles prescribed by “the Ordinance of the Ministry of Trade, Industry and Energy” and specify the articles to be designed at the time of application so that the articles to be protected are defined specifically in the Enforcement Regulations. In other words, what is protected under the Design Protection Act is supplemented by the Design Protection Act Enforcement Regulations and examination standards. The classification of protected items is defined by the Enforcement Regulations of the Design Protection Act [Attached Table 4], and the classification of the articles specified in [Attachment 4] is for the purpose of maintaining the consistency of the creation of the design registration application and the unified name. It does not specify a similar range.

(3) Design examination standards of the KIPO

As we have seen, the law does not give a clear definition of the nature or definition of " articles", but it has been supplemented by the examination standards. In other words, Article 2 of the Design Examination standards states, "Under the Design Protection Act, the term "article" is a concrete article that has independence, and it is based on the principle of "personal property", and excludes real estate from the object of design that is subject to protection under the Design

Protection Act. However, it goes without saying that various materials used in the construction of real estate such as buildings can be registered as articles themselves. In addition, even if the property is ultimately settled on the land, it can be mass-produced, and if it can be transported, it is recognized as an article and allowed to register and protect it.

(4) Relationship between Locarno Classification and Korean Design Protection Act

The sections related to interior design in the Locarno classification are chapters 25 and 32. Chapter 25 defines architecture, sub-class 25-02 defines 'prefabricated buildings', and 25-03 defines 'houses, warehouses, and other buildings'. Chapter 32 defines graphic symbols, logos, surface patterns, and decorations, while sub-class 32-00 defines them as Get-ups. Among the "Get-up", this include arrangement of the interior of a room, which can protect the interior, interior and exterior appearance of the building.
When we look at the design examination standards in the Korean Design Protection Act, "article" is a specific product that has independence as a principle, and it means that the results of the construction that can not be made of the building and the interior design of the building can not be included in the scope of protection. Therefore, there is no classification corresponding to Locarno 25-03 (houses, warehouses, other buildings). However, Locarno Classification 25-02 (prefabricated buildings) is protected, with the exception that the property can be mass produced and protected if transportable. Looking at the design classification in the Design Protection Act, there is no dedicated classification that can protect the interior design appearance (get-up and appearance) created by combining various spatial elements.

3. Legislation in some countries

1) US Design System and Practice

(1) Patent Act

Unlike in Korea, Japan, and Europe, where the design is recognized as a separate right from the rights related to technology such as patents and utility models, the United States sees the design right as a type of patent right and implements it. In other words, under the US law, the design right is subject to the laws and regulations on patents as a type of patent right. In accordance with the United States Patent Act, there is a Manual of Patent Examining Procedure (MPEP) as a specific examination standard for the processing of work in the United States Patent and Trademark Office. US patent examiners conduct a patent review, including design, in accordance with this MPEP regulation. Article 171 of the United States Patent Act states that "a person who creates a new, original and decorative design for a manufactured article may acquire a patent for it in accordance with the terms and conditions of this Act" Design is defined. According to this rule, as the nature of the design protected under the US Patents Act, it requires article of manufacture and ornamentality. A design can not be thought of separately from the item in which the design is expressed. Therefore, when a design patent application is made, design-related articles must be determined. The article of manufacture referred to in Article 171 hereof shall be a man-made tangible object. It is not possible to obtain patents from the design itself or the painting itself, which is far from the article, and the design that can be patented needs to be expressed in the article. Articles under the US Patent Law are widely accepted. If

it is an article, it does not cover property or real estate. The icons shown on the computer screen are also treated as articles. The icon itself can not be patented, but icons displayed on a computer screen, a monitor, or another display is provided with article properties. The United States Court of Appeals found that the pattern of water for a water fountain of a fountain was considered to have article properties. Designs that are subject to protection under the US Patents Act require the property of goods, but these goods are interpreted very widely, and it can be understood that most objects that can be considered are covered. In the United States, which does not adopt the Locarno classification as the main classification, it adopts its own design patent classification, but the US patent classification is very similar to the Locarno classification.

(2) Trade Dress

The U.S. has protected the look and feel of interior designs, centered around the concept of a trade dress. Trade dress means the total image and overall appearance of any goods or services that distinguish them from other goods or services. Trade dress was initially a term used to refer to the packaging, container, label, etc. of goods, but it has evolved and now protects non-traditional brands such as sound, smell, texture and sales techniques. The trade dress may be registered as a Trademark in the USPTO. In the United States, there is in principle no limit to what a trademark can be, and a broad category has been protected. For example, a book or magazine cover, a teddy bear exterior, an old car shape, a sport sneaker appearance, a folding table combination, an appearance of a bathroom scale, a menu and style of a restaurant, and the enlargement of this category makes it possible to register the trademark of the result of the interior design field.

2) European Community Design Legislation and Practice

Since the Directive on Design Protection in the EU was adopted in 1998, EU Member States are obliged to incorporate the enforcement regulations in these Directives into domestic law in accordance with the Directive. The Community Design Act (CDR) was passed by the European Council in 2001. Article 3 of the CDR states that "design" refers to the appearance of all or part of the product obtained from the characteristics of the product itself and / or its line, contour, color, shape, texture and it defines the design that can be protected. The design being protected is defined only in relation to the product. To be protected by community design, it must be a design that can be incorporated into the product or applied. Productability is considered satisfactory as long as it can be incorporated into the product. It is only necessary to be able to incorporate into the product, and the scope of protection is not limited to that product. The products to which the Community design is incorporated or applied are classified by Euro Locarno classification. Euro Locarno was created by OHIM on the basis of the Locarno classification for purposes of classification of products marked in the application and registration of community design. The Euro Locarno is almost identical to the Locarno classification.

(1) Recruitment of Locarno Classification Category 25

Locarno Classification Category 25 Category 19, include Building Materials (25-01) 20, Prefabricated Building Part (25-02) 21, House / Warehouse / Other Building (25-03) 22, (25-99) 24. In particular, the building itself, such as a house or a warehouse, is included in the article. When the goods classified by the Locarno classification are

recognized as legitimate goods, the appearance of real estate such as buildings can be registered and protected.

(2) Recruitment of Locarno Classification Category 32

The Locarno Classification Category 32, which defines graphic symbols, logos, surface patterns, ornaments, was introduced in the revision of the ninth edition since the eighth edition. The introduction of this Category 32 is in accordance with the proposals of Denmark and the United Kingdom. In Denmark, the Category 99(Miscellaneous) includes the following categories: Get-up, Interior design (interior arrangement of indoor, canteen, train, etc.), Ornamentation, graphic symbols and logos. A similar proposal has been proposed by the UK more specifically. The UK proposed to include in the Locarno classification a two-dimensional design that could be applied to a variety of products, including logos, graphic design, graphic design for packaging, logos for clothing, surface decoration, and surface patterns.

(3) Get-up; Protection of interior and packaging design

Category 32, which has been adopted for the Locarno classification, includes Getup [the interior of a room]. These get-up expressions are derived from the European Community Design Regulations (CDR) 31 Article 3 (b) and are included in the Locarno classification. Article 3 (b) of the Community Design Regulations (CDR) states that " ‘product’ means any industrial or handicraft item, including inter alia parts intended to be assembled into a complex product, packaging, get-up, graphic symbols and typographic typefaces, but excluding computer programs; "

4. Study on the way how to protect interior design in Korea

1) Expansion of the definition of articles in the Design Protection Act

In the definition of the Design Protection Act, the products according to the Locarno classification are to be protected under the Design Protection Act. "Article 2 (Definitions) The terms used in this Act mean the following: 1. "Design" means the shape, shape or color of an article [including part of an article, typeface and "Locarno Convention on the Establishment of an International Classification of Industrial Design"] or a combination thereof, ".

The Locarno classification has only administrative features and does not impose the nature and scope of protection afforded to industrial design by the Contracting States, and each Contracting State may confer a reasonable legal effect on this classification. In other words, it is up to the liberty of the Contracting States to designate the articles in accordance with the Locarno classification as an object to be designed. So Korea can adopt Locarno convention into the definition of article to protect interior design.

2) Protection of interior design by Copyright Protection

Under copyright law, the object of protection of architectural works is the "expression", not the architectural idea. The architectural ideas of architectural works are expressed as "blueprints" or "models", so they are protected as architectural works. In order for a blueprint to be recognized as an architectural work, it is necessary to complete the blueprint in such a degree that it can be constructed according to the blueprint, It is the attitude of the case. The architectural works are functional works, and for the functional works, there is a criterion that

creativity should be found in parts other than the functional elements in order to be recognized as copyright. In particular, interior design is not regarded as a architectural works, but it can be protected only as a graphic work or an applied art work of copyright. Therefore, it is said that the construction according to the design of the interior design is based on the idea shown in the design drawing but not the expression. In other words, it does not correspond to the reproduction of the work. Therefore, it is considered that the construction of the interior according to the design plan without permission of the copyright owner of the design is not in principle infringing the copyright. This means that interior design is not easy to be protected as copyright. The copyright is legally granted to the creator from the time of creation, but it is difficult to protect it due to problems such as burden of proof and judgment of creativity in infringement litigation. Copyrights are not allowed to be imitated because the design of the other person is recognized as an independent work as long as the original creator can not prove that the other's work is the same as the original interior design. Also, if it is judged that the design does not have creativity enough to be recognized as a copyrighted work, copyright infringement will not be done even if others imitate it.

3) Protection of interior design by Trademark Act

In Korea, there is no concept of trade dress, which is developed in the United States under Article 32 of the Federal Trade Marks Act. Trademarks similar to the closest interior design in the Korean Trademark Act are three-dimensional trademarks. A three-dimensional trademark refers to a trademark containing a three-dimensional shape among the constituent elements, and means a three-dimensional representation of characters, symbols, and graphics, or a

three-dimensional representation of a product or a package itself. In other words, interior design with three-dimensional character is the most appropriate trademark to register. However, In the Trademark Act, it is stipulated that the registered trademark shall not have effect if the three-dimensional form of the registered trademark can not be identified as to whose business the goods are to be displayed. It is difficult to register a trademark if it is not a result of interior design directly connected with the brand identity. Even if it is a space with a brand, registration is difficult if consumers can not remind the brand.

4) Protection by Unfair Competition Prevention Act

If interior design is widely known as a mark of business, imitating is considered to be unfair competition behavior. Because, In Article 2 of the Unfair Competition Prevention Act, "unfair competition" is defined as "the act of confusing others with the facilities or activities of others by using the same or similar marks as those of other people's name. In addition, Article 2 stipulates that "the act of infringing the economic interests of others by unauthorized use of performance made by a substantial investment or effort of another person in a manner contrary to fair trade practice or competitive order". It seems that protection is possible through this, but there seems to be few cases and the case accumulation seems necessary.

5. Conclusion

The protection of the rights of the interior design is presently done, but its scope and form of protection is very limited. The following improvements should be made to protect the results of more creative interior designs.

First, the design protection Act protects the interior design as a component such as furniture, lighting, and materials. However, since the interior design is a look and feel that occurs through the combination of these elements, it is necessary to establish a legal system to be evaluated.

Second, the protection of the interior design field should include the protection of the design concept along with its components. In fact, it is very difficult to prove imitation when used in another space with only one element of design, so it is necessary to protect the concept which is important in the design process.

Examination criteria for design protection Act and registration show that the characteristics of interior design different from those of other design are very insufficient. In order to protect the interior design in the future, it is necessary to revise and supplement the protection system by organizing the characteristics of the interior design results systematically.

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6. 전통지식 등 최근 이슈, 반독점법과 지재권의 접점 (Traditional Knowledge and Other Emerging Issues; Interface Between Antitrust and IP Rights)

□ 교육기간 : 2017. 09. 11. ~ 10. 04.

□ 담당교수 : Stephen Corones 교수 (QUT 법대)
Natalie Stoianoff 교수 (UTS 법대)

□ 과정내용

○ 과정 개요

본 과정에서는 전통지식(Traditional Knowledge) 문제를 포함한 지재권 분야의 최근 이슈들과 함께, 서로 다른 영역에 있는 반독점법과 지재권법이 그 방향이 대립하는 경우에 이를 어떻게 해결하고, 상호 협력해가는지 다룬다. 외부 세계로부터 고립된 채 자신들의 전통을 고수해가는 토착민(indigenous people)의 전통 지식의 보호 차원에서 제기되어, 그 영역을 확장해가고 있는 전통지식에 관한 이슈와 더불어, 보편적 인권, 기후변화, 생물학적 다양성 보호 등의 다양한 주제에 있어서 지재권 보호가 어떤 역할을 할 수 있는지에 관하여 학습한다. 또한, 특정 시장의 독점을 금하는 반독점법과 독점권인 지재권을 부여하는 지재권법이 하나의 시장에서 어떻게 조화를 이룰수 있는지를 다룬다.

○ 세부 내용

i) 유전적 자원 접근에 관한 지재권 및 국제법 시스템
ii) 전통 지식 및 문화에 대한 보호
iii) 지재권과 공공 보건, 환경보호 및 보편적 인권
iv) 지재권법과 반독점법의 정책적 목표
v) 지재권 라이센스 거절, 끼워팔기(tying), 결합판매(bundling)
vi) 반경쟁적 행위에 대한 소송
vii) 불공정 경쟁으로부터의 보호

□ 주요 연구결과 - Research Paper

○ Topic : A study on the regulation of the patent abuse with competition law about NPE

1. The Concept of NPE

While patent law grants exclusive rights to right holders, competition law has the role of preventing right holders from monopolizing, so these two laws have room for mutual conflict. It is a common view that in each country, competition laws are applied to unfair practices of patent rights by establishing examination guidelines. In other words, the competition law does not apply the regulation for the legitimate exercise of the patent right, but it applies the regulation to the unfair exercise of the patent right. The regulation of the competition law on these patents has become a lot of issues due to the active activities of the NPEs (Non Practicing Entities). Since the 2000s, NPE has employed technologists and lawyers without production facilities and has gained tremendous profits through the patent portfolio, especially in the IT field. NPE is also called a patent monster negatively. After NPE filed a large number of patents to make technology nets or to buy valuable but low-priced patents, NPE filed a patent lawsuit against large corporations that are producing the patent as a weapon. Through these patent lawsuits, NPE aim to receive a large amount of license fees. As a result, it may result in undermining the intention of the invention of the other companies and thus undermining the purpose of the patent system to promote industrial development through technology innovation.

It is a legitimate exercise of rights for a patentee to claim damages for patent infringement. However, there are the following problems in that

NPE use patents to construct a patent portfolio in order to maximize their monetary profits without producing products, and to strategically obstruct the production of manufactures. Firstly, Companies can ignore technological innovation. Secondly, NPE can unreasonably increase license fees, which excessively increases manufacturing costs. Thirdly, the validity of the patent may become uncertain, so investment in the patent and technological innovation may be delayed.Forthisreason,regulationofcompetitionlawforNPE'spatentingisactivel yunderdiscussion.

2. Advantages and Disadvantages of NPE

1) Advantages of NPE

(1) Providing incentives for invention of an individual inventor or small business

Promote the development and innovation of technology by providing financial incentives for the creation of new inventions by helping individual inventors or small and medium sized enterprises that can't commercialize patented inventions individually, and by increasing the liquidity of assets using patent rights.

(2) Activation of patent market

NPE can facilitate technology licensing by building a patent portfolio. In other words, NPE provides the opportunity to commercialize an invention by constructing a new portfolio by purchasing low valued patents among the patents owned by universities or small and medium enterprises. The NPE also reduces transaction costs by enabling multiple purchased patents to be traded at one time.

(3) Preparing measures against patent infringement

NPE may also provide patent protection measures for individuals or SMEs to prevent large companies from infringing their patents. In the past, large companies have long lagged in costly litigation, taking advantage of patent infringement lawsuits with individual inventors or SMEs. An NPE may be formed if there is an investment that financially supports individual inventors or SMEs, and if there are lawyers who do litigation under a success incentive arrangement. This NPE can help individual inventors or SMEs to file lawsuits against large companies.

2) Disadvantages of NPE

(1) Increase in cost

As NPEs charge licenses, manufacturing companies will pay for licenses, which will increase manufacturing costs. The abuse of patent rights may cause the cost of litigation to rise and adverse effects on economic development due to indiscreet litigation.

(2) A large amount of licensing fees

The NPE is waiting for the other company to produce the product and then filing a patent lawsuit, demanding a large amount of license fees against companies that are already stuck with the patent and can't stop production. Unless NPE's responding companies can easily switch from the current production line, they will be forced to meet NPE's license fees. This is problematic in that it expands the high cost licensing problem.

(3) Inhibition of Innovation

NPEs may not be able to contribute to technology development and

society because they do not make efforts to further develop patented inventions or develop products themselves. NPEs may simply abuse patent rights for companies that develop technology or produce products, which ultimately hampers technological innovation across society and loses the existence of the patent system itself.

3. Types of patent abuse by NPEs

The reason for the regulation of NPE is that NPE is 'abusing' rights beyond the scope of legitimate patent rights. It is not a problem if the NPE license at a fair price through pre-negotiation before the company enters production. NPEs use post-negotiation to get high licensing fees for those companies that are already in production and can't easily switch to other technologies. The types of patent abuse that NPE uses are rejecting licensing, tie-in, and litigation abuse. If NPE's abuse of the patent is anticompetitive, it can be regulated by competition law.

(1) Rejecting licensing and tie-in

It is natural that patent holders have the freedom to choose licensing traders at will. However, it is a matter of rejecting a patent license that is essential to a competitor for the purpose of excluding a competitor beyond a simple license transaction rejection. In particular, if a license is refused due to requesting excessive licensing fees in patent negotiations, competition law may be illegal. If the NPE is forced to license its patents collectively to technologies that are not needed for the other company, it will cause problems such as 'tie-in'.

(2) Formation of Patent Barriers

NPEs may apply for a number of patents on certain products for anti-competitive purposes in the market, or acquire additional patents

from third parties if the competitive product is on the market. The problem is that patents acquired by NPE hinder the entry of potential competitors into the market as a patent barrier.

(3) Litigation abuse
This means that npe interferes with the business activities of other companies by deliberately delaying the lawsuits by abusing patent lawsuits.

4. The concept of competition law in some countries

1) The U.S.
The competition law in the United States consists of three laws and cases, including the Sherman Antitrust Act, the Clayton Antitrust Act, and the Federal Trade Commission Act. The Sherman Act mainly regulates monopoly practices using superior status, and most of the competition laws in each country are enacted on the basis of the Sherman Antitrust Act. The Clayton Antitrust Act is designed to promote competition among companies by preventing monopolies and deals with mergers. The Federal Trade Commission Act comprehensively regulates unfair trade practices.

< Main provisions of the Sherman Antitrust Act>
Section 1:
"Every contract, combination in the form of trust orotherwise,orconspiracy,inrestraintoftradeorcommerceamongtheseveralStates,orwithforeignnations,isdeclaredtobeillegal."
Section 2:
"Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize

any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony”

< Main provisions of the Clayton Antitrust Act >

Section 7:

Section 7 elaborates on specific and crucial concepts of the Clayton Act; "holding company"definedas"acompanywhoseprimarypurposeistoholdstocksofothercompanies",whichthegovernmentsawasa"commonandfavoritemethodofpromotingmonopoly" andamerecorporatedformofthe’oldfashioned’trust.

< Main provisions of the Federal Trade Commission Act >

Section 5(a):

Section 5(a) of the Federal Trade Commission Act (FTC Act) (15 USC §45) prohibits “unfair or deceptive acts or practices in or affecting commerce.” This prohibition applies to all persons engaged in commerce, including banks.

2) The E.U.

The EU competition law does not exist in an independent legislative form, Including the provisions of the Treaty on the Functioning of the European Union (TFEU), the rules established by the European Council and the judgments of the European Court of Justice (ECJ). The EU is trying to unify the legal system, but there is no unified patent law, and it is implemented by the member countries through individual laws.

< Main provisions of the TFEU >

Article 101:

Article 101 prohibits business agreements or arrangements which prevent, restrict, or distort competition within the internal market and affect trade between Member States.

Article 102:
Article 102 says “Any abuse by one or more undertakings of a dominant position”

3) South Korea
The Fair Trade Commission in South Korea has established guidelines on the examination of intellectual property rights based on the competition law, limiting the exercise of patent rights.

< Main provisions of the competition law >
Article 59 of the competition law stipulates that it does not apply to acts recognized as a legitimate exercise of rights under the Copyright Act, the Patent Act, the Utility Model Act, the Design Protection Act, or the Trademark Act.

5. Regulation of Competition Law on Patent Abuse

In the U.S., the E.U. and South Korea, abuse of patents is not exempt from competition law. In the U.S. and the E.U, and South Korea, abuse of patents is not exempt from competition law. In the U.S. and the E.U., the act is regulated only by the companies with market power, while the act of the companies without market power is exempted from the competition law. In Korea, there is an attitude regulating patent rights centering on unfair trade practices. When judging based on the competition law for abuse of patent rights, it is necessary to establish the scope of the relevant market considering the existence of the substitute technology of the patented technology, and to demonstrate whether it has actual market dominance. The application of competition law only when this has been proven is seen as a way of balancing the application of competition law with the purpose of legislation protecting

patent law.

6. Regulations in competition law about the types of patent abuse by NPEs

1) Competition law about rejecting licensing

In the case of NPE with dominant market power, if the patent for which the license is rejected is an essential element of the product, it is illegal to abuse the market dominant position. In addition, even if a patent rejecting a license is not an essential element of a product, it will become an abuse of market dominant position if licensee rejection limits competition. There is a consumer welfare balancing test as a criterion for limiting competition. This test seeks to balance the producer and consumer aspects by looking for justifiable reasons for NPE's refusal. In other words, this test determines whether NPE's licensing rejecting will raise the price beyond the normal price. In addition, if there is a licensing rejecting even though competitors are willing to pay a high price, it is judged whether there is a justifiable reason. If the market share of the NPE is small, it is not considered abuse of the patent because the restriction effect on competition is minimal. In the following cases, the rejecting licensing may be unlawful. Firstly, If the goods subject to the refusal are essential to the business of the counterparty. Secondly, If the licensing refusal causes difficulties for the business of a specific company and consequently reduces its competitiveness in the relevant market.

2) Competition law about tie-in

If NPE forces other companies to be licensed collectively for patent technology that is not needed, it will cause problems such as 'illegal tie-in'. Specifically, the tie-in may be regulated by the competition law

in the following cases. (I) the two products are separate products; (ii) the NPE is the dominant operator in the primary product market or has considerable economic power; (iii) If the NPE does not give the option to purchase only the primary product, except for the secondary product. A typical case is window product of Microsoft. Computer makers were supposed to pay for licenses whether they were using Microsoft's Windows programs or not. These arrangements can be an example of unreasonable tying.

3) Competition law about formation of Patent barriers

If patent barriers interfere with entry of competitors into the market, competition law can be regulated. If NPE's market power is strong and it is recognized that there is a patent right for essential technology now, and also if NPE is trying to acquire a patent for a competitive patent, NPE's acquisition of competitive patent will reduce the possibility of other companies entering the market, So this is likely to hinder fair trade.

4) Competition law about litigation abuse

In the event of abuse of patent litigation and interfering with the business activities of other companies, the regulation of competition law is possible. In other words, if there is a deceptive act in the process of patenting, it is possible to regulate if there is a possibility of obstructing the fair market due to unfairness of transaction contents. As a specific example, if NPE knows that a patent infringement does not hold, or even if it is objectively clear that the patent is invalid, it is highly likely that the litigation of NPE is illegal against competition law when NPE has filed a patent infringement lawsuit.

5) Standards and related NPE acts.

Regulation is needed to solve problems such as 'patent ambush' which are hidden in standardization process and appear after standard decision. This is because technology adopted as a standard can be used by all producers, which can result in huge licensing benefits. Standardization bodies impose obligations to impose "fair, reasonable, and non-discriminatory (FRAND)" licensing obligation, or to disclose the status of related patents or the status of pending patents. The issue of whether a FRAND agreement can be treated as a breach of the competition law if it is violated in the past. In this regard, there are several big cases such as Rambus case, IPCOM case, N-DATA case. In the case of standard patents with patent ambushes, these cases are considered to be regulated under the competition law in view of the large impact on the market.

7. Conclusion

It is not possible to say that all actions of NPE are unconditionally prohibited because of NPE. However, if there is an act that deteriorates the development desire of the subsequent developer who intends to develop the technology in the behavior of the NPE and, as a result, hinders the development of the industry, some regulation of competition law is necessary to keep fair trade.

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7. 지재권 관리 및 상업화 (IP Management & Commercialization)

□ 교육기간 : ‘17. 09. 11.~ 10. 04.

□ 담당교수 : Philip Mendes 겸임교수 (IP Australia)
Brian Richards IP 컨설턴트 (BDO)

□ 과정내용

○ 과정 개요

최근 지재권에 대한 경제적 가치가 매우 높이 평가되어 있으나, 대부분의 지재권이 상업화되지 못하고 소멸되고 있는 실정임. 본 과정에서는 지재권의 가치를 정확하게 확정하고 평가하는 방법과 이에 대한 상업화 방법을 다룸. 상업화 방식으로서 라이센싱 계약, 창업, 지재권 공유 및 협력 등을 설명. 구체적인 사례 연구로서 상표, 특허 등 지재권 창출에서부터 상업화에 이르는 전과정을 학생들간의 그룹 토론을 통하여 논의하고 발표하였음. 또한 상업화 과정에서 요구되는 협상 기술과 경제적 이익 증대를 위한 협상 전략을 소개하였음.

○ 세부 내용

i) IP 확정 및 평가 절차
ii) IP 보호 방법에 관한 사례
iii) IP 공유와 협력
iv) IP의 상업화 방법
v) 라이센스 계약에 관한 사례
vi) 창업과 벤처케피탈 설립
vii) IP 거래를 위한 협상 전략
viii) 아시아·태평양 국가들의 IP 관리 현황

□ 주요 연구결과 - Research Paper

○ Topic : University Technology Transfer in the Republic of Korea: Challenges and Success

Introduction

In past 40 years, Korea is one country that succeed in using technology transfer as a significant factor to drive economic growth. In the early phase of industrialization, the R&D policy of Korea focus on foreign technologies transfer in order to obtain technological competitiveness in high-tech products. Korea used foreign technology as a significant source to build its R&D and innovation base as well as develop its domestic capacity with highly educated personnel. In past decade, the Korean government established various technology transfer policies for commercializing the technologies developed by public research institutes to achieve advanced technological innovation and competitive advantage as well as to increase economic growth. Korean Government had launched a series of pro-technology transfer programs after the enactment of the Korean Technology Transfer Promotion Act of 2000 which in 2006 the title was changed to the " Technology Transfer and Commercialisation Promotion Law", which resembles the US Bayh-Dole Act of 1980 and the US Stevenson-Wydler Technology Innovation Act of 1980 in many ways.

University technology transfer (UTT) is one of mechanism that has been exploited by Korean government in developing technology and innovation system as well as enhancing creative economy of the country. UTT outcome by the universities have increased rapidly since the early 2000s, nevertheless emerging issues and challenges of UTT performance have been acknowledged by all stakeholders nowadays. As

major mission of the universities is teaching and fundamental research, enhancing commercialisation of university research is not a priority, nevertheless, universities in Korea recently have faced pressure to combine eminence in teaching and research with commercialisation and fund-raising activities. Thus, there are many factors that cause an impact to the effectiveness of UTT in Korea.

The research paper is structured with the question whether the Korean UTT system is on the path to success or failure. What is the causes and factors that obstruct the effectiveness of UTT performance in Korea.

The first section of the paper will explore background of UTT and current state of UTT performance in Korea. Section 2 will examine the statistic of UTT in Korea. While related laws and government policy as well as the challenges of UTT performance will be discussed in Section 3, which will analyze practical issues and conditions that cause an impact on technology transfer success in detail. The recommended solution on effective UTT performance will be provided as well.

I. University technology transfer

University technology transfer (UTT) is a process by which knowledge flows from academic researches to industrial production or services, bridging the disparate cultures of the donor and recipient organizations. Initially, technology transfer was referred to “two different ways of technology transfer. Horizontal technology transfer is the transfer of technological knowledge or innovation between organizations, industries, and nations. Vertical technology transfer is the transfer of technological knowledge or innovation, from basic to advanced research, for development through to commercialization”.

More recently, technology transfer has been considered as “the route of technological knowledge, ideas, and research results from the initial conceiving organization to the user organization, which focuses on licensing-in and technological cooperation.”

After being invented by scientists or professions in research laboratories, new technologies go through a sequence of processes and are eventually applied by recipients. Recipients can, and mostly, be business firms, and those firms involved can be classified into several groups. For example, the technology may flow from universities to a existing company or an intermediary; also, the transfer can occur between academic institutions and a startup or spinoff. Existing companies could be large or small entities and they generally seek for partnership with universities in different stages. In addition, there is a distinction between spinoffs and startups: startups are companies created by licensing an early-stage invention to an independent entrepreneur, with the goal of developing the company around the growth and commercialization of the technology; spinoffs are new companies formed by individuals related to the university or university research park to develop a technology that was discovered in, and is transferred from, the parent organization.

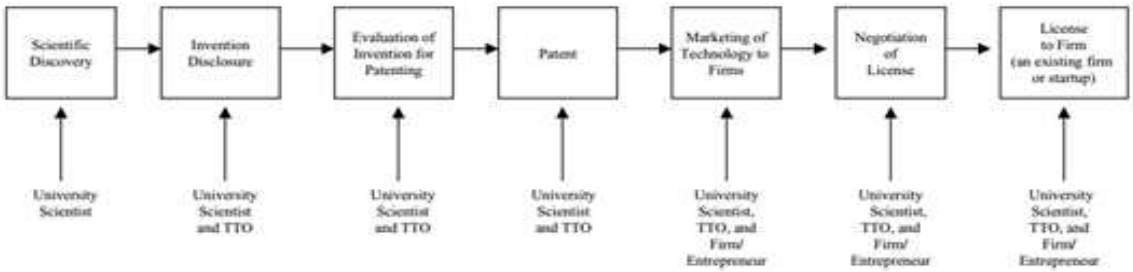
That is to say, new inventions trigger the foundation of both startups and spinoffs, but startups are operated by an entrepreneur who works outside universities while faculty members establish the latter.

Models of UTT

Since being introduced at the first time, UTT has been developed several times, and so as the models of UTT.

As people defined UTT as a flow where technology and knowledge transferred from colleges to public, the models were initially divided

into shielded innovation transfer in which inventions ultimately went to the market and unshielded technology transfer where the basic researches were taken to applied or developmental levels. Although some critics argued that the shielded pattern was not consistent with universities' mission, shielding an invention was the most popular choice among universities because it is an energy-saving way and can cut down investors running cost, which can improve universities' competition to attract capital investment.



More recently, several definitions of traditional UTT model come from different perspectives. Some scholars outlined the traditional model of UTT as a general linear flow (Figure 1). The process starts with a discovery by scientists or faculty of colleges and ends when another party obtains the license of the invention. To be finally licensed, technology transfer offices (TTOs), an institution embodied in universities and firms might be involved. TTOs take responsibility for deciding whether to patent the inventions and for make an evaluation regarding commercialization potential prior to interest being expressed by companies, and after the patent is granted, TTOs are in charge of, sometimes with faculty input, seeking for the potential corporate licensees. Other opinions characterize traditional technology transfer as an organization-centric model, which is considered as a combination of triple helix model theory and the concept of multiversity. Under the

triple helix model, universities, industry and government have connection with each other, and reciprocal relationships are formed among the three institutions in which each attempts to enhance the performance of others. The multiversity is a modular institution centered on undergraduate and graduate schools with multiple activities and organizations, including science parks and research institutes, undertakings integrate or release from the core depending on the needs of the students, faculty, and regional communities.

As the technology has developed rapidly and society has experienced a huge number of changes, the models of UTT has been crafted, or proposed to be altered in the last decade. For example, Miller and Acs propose universities find methods and models focused on supporting individuals in unleashing their knowledge to solve local and regional challenges.

Benefits and challenges of UTT

UTT has proven to be an extremely valuable method of ensuring that innovative university discoveries become more readily accessible as commercial products. This enables the outcome of technology innovation to be available outside university laboratories.'

What's more, connecting university technology with industry is a mutually beneficial arrangement. Technology transfer can be a significant source of revenues for the university and provide industry with important new technologies. The collaboration with industry provides faculty opportunities to obtain sufficient research funds, to test the practical application of their theory as well as employment opportunities for students. Technology transfer is beneficial for industry because utilizing university-developed technologies can help maintain a comparative advantage in the marketplace and save R&D time and cost,

and being affiliated with a university might provide a halo effect for the firm. Also, firms that collaborate with universities have greater access to new university research and discoveries.
However, technology transfer will not really make universities or research institutions rich because building a robust technology transfer program takes a large amount of time and money. First, to establish TTO requires sufficient financial investment. After that, it takes around 8 to 10 years to arrange a TT institution such as building an IP portfolio, establishing contacts, and developing skills in technology transfer. And it may take up to two decades or more before a university technology transfer program substantially affects the local economy. Although the ultimate impact may be very large for the academic institution or the wider community, most universities can barely survive.

What is the situation of UTT in Korea?

In Korea, university technology transfer began to be promoted in earnest in 2000 when the Technology Transfer and Commercialization Promotion Act was established to construct a series of bases for technology transfer, thereby making the installation of organizations dedicated to technology transfer mandatory and providing incentives for technology transfer.
According to Act on promoting technology transfer and commercialization, transferrable technology refers to intellectual property (IP) rights applied for and registered under the Patent Act, including patents, utility models, designs, layout design of semiconductor integrated circuits, and software; or IP-related goods or information; or scientific, technological and industrial know-how that can be transferred or commercialized.

There are three main organizations that provide funds for UTT projects which are:
the Ministry of Trade, Industry and Energy (MOTIE), the Ministry of Science, ICT and Future Planning (MSIP) and the Korean Intellectual Property Office (KIPO). The MOTIE allocates government budget for Research & Development (R&D) programs; the MSIP is the main part that takes responsibility for channeling technology transfer and commercialization and the KIPO has some proportion of the funding for technology transfer and commercialization. These three organizations respectively triggered projects to support UTT. For instance, the MOTIE funds the activity to promote technology transfer and transactions as well as some follow-up projects of transferred technology such as supporting technology license office (TLO) embodied in universities; and the MSIP supports the cost of technology valuation and feasibility analysis when establishing lab-based company, a key channel for direct commercialization of research outcome from public research institutes.

II. Statistics of University technology transfer in Korea

In the reality that technological competition system is intensifying, it is necessary to continuously increase R&D investment to prevail competitive advantage. Korean government has tried to increase its R&D expenditure. As a result, Korea's GDP on R&D and net GDP expenditure is among the highest across the developed nations.

In 2014, Korea's Gross Domestic spending on R&D was 4.29% and 1st rank followed by Israel (4.11%), Japan (3.58%), Finland (3.17%), Sweden (3.16%), Denmark (3.05%), and China(2.05%). Even though the total R&D expenditure was small compared to USA, Korea's total R&D expenditure was $60.5 billion and 6th rank in 2014. Korea also has a

good indicator of other science and technology competitiveness such as the number of SCI thesis and Patent registration. Korea's SCI papers in 2014 was 54,691 and ranked 12th. The number of Korea's patent application to USPTO, EPO and JPO was 3,152 and ranked 4th in 2014. As the statistics showed above, Korea has competiveness of technological field. However, Korea's techniques trade balance was still minus 5.7 billion dollars in 2012 which meant that Korea had the highest technical trade deficit among member countries of the Organization for Economic Cooperation and Development (OECD).

The Korean government analyzed the reasons and found that the output of R&D in universities was not good enough. So, the Korean government has put a lot of effort into promoting the commercialization of technologies developed in universities. Even though the public technology transfer policy of the government has improved the infrastructure of technology transfer and commercialization these various efforts the technologies obtained from the government R&D programs have not been transferred to the Korean industry property.

The ratio of the university's ownership of technical transfer business division in 2014 was 65.7% which was lower than that of the public research institute (73.6%). The total number of employee in the department was 405 and each university had an average of 6.7 employees. When we based on FTE (Full Time Equivalent), the number dropped 5.1 employees. The average number of years of work experience was 2.8 years, and the ratio of work experience less than 2 years was the highest at 47.6%.

In 2014, 63.0% of all universities did not conduct any education related to technology transfer or commercialization for researchers. Only 37% of all universities conducted education to researchers and the average number of training was 10.9. Also, this trend was almost the same as the staff in division. 52.6% of all universities did not conduct

any education related to technology transfer or commercialization for the staffs. When the developed technology was filed and registered as an industrial property right, the ratio of the financial compensation to the researchers was very low at 42.9%. Most universities (90.2%) reflected in the achievement evaluation of the researchers or developers. When technologies were transferred, only 37.1% of the universities made monetary compensation for the staff in technical transfer business division.

The number of technology transfer in universities was 3,712 and the number of developed technology was 14,633. The rate of technology transfer was 25.4% which increased 10.1%p comparing to 2007. The types of contracts were as follows. Technology transfer was 774, free transfer was 32, license was 2,855 and etc. (such as OEM) was 51. 92.8% of technology was transferred to SME and 3.2% to larger company such as Samsung, LG. Only 108 technologies were transferred to large company. In terms of transferred parties, 72.9% of royalty income received from SMEs, 16.6% of large company, and 10.5% of other institutions. 61.4% of the total transferred technology is acquired using public sector research and development costs. The transfer of the technical achievements obtained by utilizing the private sector research and development expenses accounted for 38.6% of the total transferred technology.

In 2014, the university's royalty income was about 45 million dollars, an increase of about 12.1 million dollars from the previous year (3.2 million dollars). In types of contacts, total royalty consisted of technology transfer (21.5%), nonexclusive license (41.3%), exclusive license (32.4%) and etc. (4.8%). The technology revenue from technology transfer was 9.6 million dollars. The nonexclusive license fee was 18.5 million dollars. The royalty income from the exclusive license was 14.5 million dollars. Royalty income by amount was as follow. The amount

less than 500 dollars was 20.7%. The amount between 500 dollars and 1000 dollars was 5.9%. The amount between 1000 dollars and 5000 dollars was 25.2%. The amount more than 5000 dollars was 23%. The technology transfer efficiency of universities is 1.16%. In 2014, the university spent a total of 4.3 billion dollars' R & D expenditures and gained 50 million dollars in technology transfer. It was 10.5% that the transferred technology was successfully utilized for product, service production, and process improvement to earn revenues (sales). 66.5% of the transferred technologies have not been able to grasp the status of commercialization since the technology transfer contract.

The above statistics is showing some problems of technologies transfer in Korean universities. First, the number of technology transfer and the total royalty income were very small. Even though technology transfer efficiency has increased since 2009, it was still about 1%. Second, universities in Korea do not have enough employees to transfer technology. Furthermore, monetary compensation system is not good enough to encourage researchers or staffs in technical transfer business division. Researchers in universities get a good evaluation instead of monetary compensation and the staffs in transfer division even do not get a good evaluation. Besides, universities do not make efforts to improve ability and knowledge regarding technology transfer for researchers and staffs. Third, the results of the joint research with large corporations are owned by large companies and universities in form of joint ownership, thus technology transfer does not happen. In the future, when the university wants to make a technology transfer contract with other SMEs, the technology transfer cannot be done because it is necessary to obtain the consent of the large company who is joint owner. In addition, most of the technologies developed with the government are transferred to SMEs, and it is another problem that technology transfer to large corporations is not possible. Finally,

universities did not follow the technology which transferred to SME or large company which mean the universities have a very passive attitude towards royalty income from technology transfers.

III. Challenges of University technology transfer in Korea

Korean laws and system in relation to technology transfer are in a little bit closed system. Currently, these related laws and systems encourage companies to develop their technologies by themselves without importing from universities, and discourage universities not to transfer their technologies to overseas.

However, nowadays, diverse technologies are converging and combined into one product. For example, to implement driverless cars, it needs various technologies such as communication technology, mechanical technology, A.I. technology etc. So, it is very difficult for company to develop all technology which is needed to a product without outsourcing the technology these days. And it takes lots of time and lots of costs to develop all technology alone. Therefore, technology transfer is essential for company these days. Especially we need to make the most of university technology, since university has lots of competent researchers.

Key challenges which are barriers to the effectiveness of technology transfer that need to overcome include: Joint ownership issue, R&D government funding system, Tax system , vague regulation for transferring technology to overseas, and poor quality patent system.

(1) The need to improve system to assign joint ownership of patent to a 3rd party easily.

Major Law for university technology transfer is “The Act on Technology Transfer and Commercialization Promotion” which was enacted in January 2001. The goal of this Act is to promote technology transfer from Public sector to Private sector. In here, Public sector includes public research institute and universities. This Act declares that public sector has the responsibility of transferring technology to private sector and this Act provides various methods for transferring technology (Article 3).

There are other laws related to university technology transfer such as Regulations on Public Official Job Invention, Regulations on management of national R & D projects, Act on Promotion of Venture Business and Patent Act.

According to Patent Act, in case of universities, research is conducted with support from government agencies or large corporations. If university applies for a patent, university will apply as a joint ownership. Therefore, technology transfer of the universities will be performed as transfer of patent rights that are joint ownerships.

At present, the requirement of consent of other shareholders is strict when transferring a shared patent. Article 99 of the Patent Act stipulates that if a patent is transferred to a third party, the other party’s consent must be obtained.

[Current] Patent Act, Article 99 (Transfer and Joint Ownership of Patents)
specifies that:
(1) A patent is transferable.
(2) If a patent is jointly owned, no joint owner of the patent may

transfer his/her share or grant any pledge over his/her share, without the consent of all other joint owners.
(4) If a patent is jointly owned, no joint owner of the patent may grant an exclusive or non-exclusive license of the patent, without the consent of all other joint owners.

If the university is a holder of a shared patent, the law should be amended to make it easier to grant rights to technology transferred agencies. It is necessary to give other sharers an opportunity to buy first or to relax other sharers' agreement conditions when university transfer its technology to private sector.

[Suggesting amending] Patent Act, Article 99 (Transfer and Joint Ownership of
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(4) If a patent is jointly owned, joint owner of the patent may grant an exclusive or non-exclusive license of the patent, unless joint owner specifically agrees to the contract

Since some countries such as U.S., Canada, France already allow joint owners to assign their right to the 3rd Party, Korea may consider about this issue.

(2) The need to reduce the gap between technology providers and technology users

In the past, the technology in Korea has been driven by the government. Supplier-centered policies by the government are made from this time. However, Government-centered policy seems to be limited in current technologies where various technologies are fusion with each other. The government tries to achieve its technological goal by supporting universities, without considering SMEs. But It is time to change form government-centered policy to company-centered policy. Chief executives in private sector are concerned about 'where are the promising business opportunities to earn profit' rather than 'what technology to pursue technology transfer', so there is a significant information asymmetry between university and private sector. That is many university technologies are not transferred because university technology is far from market demand.

<Reasons why SMEs do not adopt IP for commercialization>

Difficult to identify the promise of technology	Difficulty in finding new business items	Difficulty in navigating information
47.6%	46.8%	31.5%

Until now, the technology transfer project has been supporting the commercialization of the completed research results of universities, but it is not suitable for the demand of the private sector. As a result, private companies prefer direct development rather than open innovation, such as acquiring external technology through technology transfer. This leads to low transaction and low profit. Thus, a new transaction system is required in order to identify and support the needs of private sector. It is necessary for the university to develop the technology that meet the company need, it is needed to have expertise pool to support the problem of the patent and commercialization through the technology transfer.

Since companies often do not know what level of technology is transferred from the universities, a system to evaluate technology is essential. The evaluation system should Integrate Database for real transactions between universities and private companies and also, Database should have evaluation cases about technology transfer. In other words, the value of the university technology should be evaluated when universities finish research, and Database can allow private company to access to the university technology and Database can give private company about which technology is valuable. And the evaluation of technology should be reliable. It means there should be a reliable quality which is supported by government.

(3) The need to adjust tax system for technology transfer

Korean companies have a closed corporate culture with the high percentage of their own technology development ratio, which is far higher than the use of external technology, in other words, most companies are focused on developing their own technologies rather than buying external technologies. According to some reports, as for the company's technology acquisition method, self-development accounts for 84.5%.

<Korean company's technology acquisition method>

Direct technology development	Joint development	Purchase a license	M&A
84.5%	11.7%	1.5%	0.3%

And companies often try to take out without paying the proper price even when they need external technology. Thus, companies need to change their strategy for technology development in order to facilitate university technology transfer. To do this, companies need to get

incentives to introduce university technology. Adjusting tax benefits would be a proper way for the company to introduce external technology. The current tax system is more favorable for developing technology by itself than the introduction of external technology. The tax exemption rate is 25% (small and medium-sized company) for technology development by itself and 7% for technology acquisition from outside. In terms of tax deduction, it is advantageous to develop technology directly. Considering that SMEs are a major consumer of university technology, adjustments to tax policies are needed. In terms of tax exemption, it is necessary to design external technology to be more advantageous than direct technology development .

(4) Vague regulations for transferring technology to overseas

The Management Regulations of the National R & D Project allows SMEs in Korea to have priority for being transferred technology, when university or public research institute are going to transfer their technology which is funded by government (Article 21 (1) of the Regulation). This clause only declares the principle of domestic company priority, but it does not specify what kind of procedures should be practiced, and in some cases, there is no exemption for transferring the technology to 'overseas'. The most difficult stage among the various stages of technology transfer is to find a demanding company. There is no rule as to whether public research institutes actively found domestic company. Therefore, there is a problem that unnecessary controversy may be caused to the technology holding organization and the technology transfer contributor when the overseas technology transfer succeeds.

In addition, complex foreign trade laws such as the Industrial

Technology Protection Act, the Foreign Trade Law, the Defense Business Act, and the Unfair Competition Prevention Act, which regulate foreign technology transactions, are also a psychological barrier for the universities to transfer their technology to overseas. Although the prevention of overseas technology leakage through industrial security is an important value in international competition, there is psychological inertia that domestic technology should be maintained in domestic. In addition to this psychological inertia, due to the procedural complexity of transferring abroad, universities have trouble in finding legal boundaries between technology transfer overseas and technology leakage prevention. As a result, technology transfer practitioners in universities try to avoid transferring technology overseas due to vague concerns that they may violate industrial confidentiality protection, and that they could bind to the future responsibility. One of the ways to solve these complex legal problems is to integrate laws related to the regulation of foreign technology transfer into one. Although each law is different in purpose, it is necessary to determine at least whether the technology can be transferred overseas or not and it is necessary to make it possible to find the related procedures to transfer technology overseas.

(5) The need to improve poor patent protection environment

If the university develops technology, it intends to acquire patent rights together. When university is trying to transfer this technology, they are often based on these patents. In other words, the SME that receives the technology may also appreciate the value of the technology on the assumption that the technology has patent rights. Despite soaring patent disputes, technologies with stable and strong rights are poor in Korea. In Korea, the amount of damages for patent infringement is 10% of the US, and the dispute settlement system is inferior. So, a small number

of people are arguing that they do not need a patent system. Therefore, the unstable patent rights of technology developed by the university can be a psychological hindrance for SMEs to receive university technology. When we look more closely at the Korean patent environment, most of the inventions of universities are being filed with patents that are not valued without practical examination of business feasibility. As a result, there has been a point of pointing out that ineffective patents are still being produced.
The reason for this is that the evaluation of R & D at universities is focused on quantitative evaluation rather than qualitative evaluation of patents. Also, even if patent holder wins the patent infringement lawsuit, the domestic patent court infringement lawsuit damages are very small with an average of 78 million WON (about 88,000 AUD), so the market value and the status of the patent are very low. From this point of view, the legal protection environment of the patent can be poor. However, if SME is caught up in patent litigation due to the technology which is transferred from university, SME will have very difficult time due to the economic burden and time burden about the litigation.

Therefore, if the value of patent technology can be enhanced by strengthening protection of patent rights, it will be a momentum to activate technology transfer. To do this, if the university intends to apply for a patent, it should be screened for the marketability and the value of the patent so that a patent application can be filed only for high-quality technology. In addition, if SMEs becomes involved in patent litigation due to technology received from the university, a support system is needed to resolve it promptly, such as an arbitration system and an arbitration system. The improvement of the stability of the patent system will make the transaction of patent technology more

active.

(6) Ownership of Intellectual property and institutional issues

In case graduate students and/or non-faculty or employees engaged in research. This issue can occur and cause tensions between universities and students. It can be resolved by allowing students to own their inventions creating during enrollment.

Apart from that, mindset of researchers is another significant issue that obstruct the effective technology transfer of the university. As researchers or professors focus only on research not commercialisation. Even though the Government funding aiming of successful commercialisation but it appears in many cases that incentives are not passed on to professors/researchers properly. Furthermore, according to the system in evaluating university quality, the priority is on patents and academic citations not on aspect of business. In this case, innovation challenge prizes may be applied as a method to reward the innovators to stimulate innovation for achieving a future goal. Currently, innovation challenge prizes have not been used broadly in Korea and there is only limited extent of prizes offered.
The weaknesses of the R&D system in basic research and university research competences is another current problem. As most of Korean universities have not considered research as a matter of priority as the quality of research does not help the researchers in recruitment or promotion. This issue can be regarded as an outcome of the weaknesses of the domestic knowledge base which involves with the flow of R&D funds from the government. Public funding for university research in general is always lower than research institutes funding, however, there

is an exception of a few leading research universities. While low ranking universities have faced the problem that they cannot attract private sector to fund their research as well.

(7) Technology holding companies (THCs)

In 2010, there is an establishment of Technology holding companies (THCs) for profit organizations which creating by individual universities or group of universities for the purpose of commercialisation early stage technology of the university by start-ups or joint venture. However, there is conflict issue between THCs and TLOs regarding university technology licensing as well as issue of the failure of THCs in commercialisation phase that the universities seem not to satisfy with. As a result, some THCs have operated just only two or three years then has been dissolved, this issue should be resolved as a suitable long timeframe for effective operation is needed for THCs. And well-equipped THCs will be useful for the universities in providing advice regarding intellectual property for the start-ups.

Conclusion

Korea is one major country that has actively engaged in fostering and promoting technology transfer and commercialisation. Even though, the Korean Government has created framework in Science and Technology since 2001 which included mid and long-term science and technology policies and plans, as well as support for R&D programs. And the improvement of UTT in Korea continues moderately since the implementation of the Technology Transfer Promotion Act and with a robust support of the government in enhancing many strategies to foster UTT in the country. Nevertheless, UTT performance of Korea in past few years seems to be ineffective when compared to the

performance of other major countries as the United States or the United Kingdom. The conditions that affect the functioning of UTT system vary from legislation to a lack of expertise in IP commercialisation, including an issue on balance of incentive gain between university and researcher. The solution to improve UTT performance in Korea may include legislation amendment and a change of UTT practice and system in many aspects.

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29) The technology transfer efficiency = Total income from Royalty / Total R&D expenditure.

30) The technology transfer efficiency was 0.84%(2009), 0.85%(2010), 0.92%(2011), 1.05%(2012), and 0.94%(2013).

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※ 본 연구는 4인 협업으로 작성된 논문입니다.(4 people is involved for this research paper)

8. 개별 주제 연구 (Individual Research)

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□ 담당교수 : Matthew Rimmer (QUT)

□ 과정내용

○ 과정 개요

이 단원은 WIPO-QUT 코스를 통한 경험을 적용하여 구조화 된 개별 연구 프로젝트를 수행 할 수있는 수단임. 선행 연구 단원에서 받은 기술과 지식뿐만 아니라 이전 연구 논문에서 얻은 피드백, 도서관 기술 및 이전 7 개 단원에서 개발 한 분석 기술을 활용함. 이 과정을 통해 주도적으로 주요 연구 프로젝트를 성공적으로 완성하고 프로젝트를 관리 할 수 있음을 추구함. 이 논문은 지적 재산권 법에 관한 실질적인 연구를 구성하고 개별적으로 수행되며 실용적이고 현대적인 지적 재산권 문제의 법적 측면을 조사 및 분석함. 주제는 이전에 과정 중 어느 하나에서 주제를 개발하도록 교육

○ 세부 내용

i) 최근 지식재산권 관련 주요 세계 이슈
ii) 미래에서 지식재산권의 기회 및 도전 이슈
ii) 연구주제 선정 방법론 및 연구 논문 작성 방법론
iii) 개별 연구 주제 관련 면담

□ 주요 연구결과 - Research Paper

○ Topic : Protection Of BM(Business Model) Patents in Financial Technology

Ⅰ. The concept of BM

Technology development related to the IT(Information Technology) that forms the basis of the knowledge-based economy is a long-term driving force for economic development. By protecting this technology development with intellectual property, technology development can be promoted. There is a lot of controversy about whether BM patents which combine IT and business model can be patented, whether the granted patents have novelty and inventiveness. Although the BM invention was deemed patentable in the United States, it has recently become difficult to patent it through the Alice case. And if it does not show how to solve technical problems in the E.U., it is not patented. Therefore, various protection methods through patent, trade secret and copyright are discussed for BM invention. Among the BM inventions, there are BM inventions related to FINTECH that relate the business model to finance. Since the global financial crisis, as governments and financial institutions have tightened the conditions for high-risk loans or investments, the financial accessibility of consumers has weakened. However, FINTECH has been providing financial services that eliminate space and time constraints and also can manage risks.

Ⅱ. Significance of FINTECH patents

These days, Financial Technology emerges rapidly. FINTECH's attention is due to the increase in mobile traffic and the increase in financial transactions through mobile equipment. Since IT technology is combined into Finance, especially, in the field of mobile banking, digital currency

and so on. To facilitate financial technology, there are some issues such as regulation requirement issue, privacy issue, security issue, and protecting Innovation with patent, copyright. FINTECH patent applications are increasing. Major companies such as APPLE, GOOGLE, and FACEBOOK are investing in FINTECH.
The hot issue in this field is block Chain technology which is related with security in the internet. The essence of FINTECH is to transform centralized financial services into P2P distributed services. This characteristic is an important concept that distinguishes FINTECH from existing electronic finance or e-finance. In this regard, the block chain technology will serve as the basic infrastructure for FINTECH activation. Block chaining is a P2P trust network that ensures mutual trust among peers in a P2P network. Therefore, the issue about the protection of BM patents has become more important. So, from this reason I chose my topic as protection of BM patent in FINTECH.

Ⅲ. The problems about FINTECH BM invention

1. Patentability of BM invention (Before getting a patent)

Some of the well known BMs include Amazon's "One-click Shopping" and Priceline's "Reverse Auction." Now, in the digital economy era, innovative software and BM models have been successful examples such as FACEBOOK, LINKEDLIN, UBER. However, the reality is that the criteria for BM inventions are ambiguous. This is long standing arguments. In general, BM inventions are abstract idea method. So, the patentability of BM depends on public policy. Because, if patent criteria are too high, it can't be incentive for innovation, but if patent criteria are too low, the abstract idea will have broad right with strong monopoly through the internet, since abstract claim have the broad

right. So there is still a lot of controversy about BM patentability. In particular, as the issue of FINTECH, BM patentability has recently become more important again, it is necessary to review these issues.

2. BM patent can exercise right against infringement? (After getting a patent)

The business method in FINTECH is a business method in which customers (users), suppliers, financial institutions, and telecommunication companies are electronically connected through wired and wireless networks. Therefore, the method of operating FINTECH requires that the involvement of plural subjects is inevitable because a plurality of subjects are connected to each other via a network and perform each function through exchange of information. In this situation, a patent of a starter who checks a late runner is easy to proceed due to a wide range of rights and ambiguity, and the technology of a late runner may similarly imitate a patent of a starter. As the possibility of proceeding with an attempt to avoid infringement is very high, lawsuits are increasing accordingly. In the case of a patent for FINTECH, various subjects cooperate with each other via a wire / wireless network to constitute a scope of rights in many cases. In this case, the issue of whether the patentee can be held responsible for patent infringement is emerging.
This is relatively recent arguments compared to patentability. Although BM invention is patented in the difficult situation, the patent can be useless due to Joint infringement. Since BM patents usually has method claims with multiple steps, if 3 steps of method claim are performed by two different entities(Entity A and Entity B), It will be not Direct infringement. But, it might be Joint Infringement by Entity A and Entity B with some conditions. Therefore, under the all elements rule, which is

a requirement for patent infringement under the patent law, a person who has performed all the functions or steps of the patent claims may be liable for patent infringement, And some of the steps are performed by 'A' and the rest are reviewed by 'B' to see who can be held responsible for patent infringement.

Ⅳ. Trends in major countries about BM

1. Patentability of BM invention (Before getting a patent)

The U.S., the E.U., and Japan have similar strict policy on patentability of BM, With regard to the U.S. which is most influential country, from the Diamond case of The Supreme Court in the U.S., the patent eligibility of BM invention has begun to be recognized. Since then, in the State Street Bank case, BM inventions have increased significantly, as the CAFC in the U.S. recognized that if BM is useful, concrete, and tangible, BM is a patentable subject. However, in the case of Bilski case in 2010 and Alice case in 2014, the Supreme Court in the U.S. sentenced to deny the patentability of the BM invention and the patentability of the BM invention became more and more strict. In the E.U., it is not patented unless it shows how to solve technical problems. In the Japan, The BM is patentable, if the software is integrated with the hardware to enhance or control the performance of the hardware.

(1) State Street Bank case

The US Court (CAFC) acknowledged the invention of how to use software in the State Street Bank case. The CAFC ruled that the key to this case was whether the algorithm was expressed as an abstract idea or in a form that could be practically applied, and concluded that even

a mathematical algorithm would be patentable. In other words, if the mathematical algorithm is useful, concrete, and tangible rather than an abstract idea, the algorithm is patentable. The State Street case sets out important criteria for inventions involving computer programs or business methods. In other words, if the core of the invention stays in an abstract idea as a mathematical formula, it can't be patented like the natural law itself, but it can be patentable if the mathematical formula is used to produce concrete and useful results.

(2) Bilski case

Bilski case is about the invention of distributing a risk. And the U.S. court(CAFC) ruled out that the invention don't have patentability. The CAFC stated that the 'Machine or transformation' principle is the appropriate criterion for judging the patentability of the invention. Also, in 1998, CAFC abrogated the Useful, Concrete and Tangible criteria that were proposed as the principle of establishing the BM invention in the State Street case. With regard to the Machine or transformation principle, the Court has stated that if the method applied is interlocked with a particular mechanism, or if it results in transforming a particular object from an existing state to another state, It has patentability regarding to Section 101 of the Federal Patent Act. Bilski case stated that BM invention should be satisfied in the essential part of the above requirements, and if the above requirements are not satisfied and the patentability of the invention is not found, and if the BM invention may be limited to use in a specific field, or may be combined with additional non-essential elements, It is judged that the patentability of the invention is not obtained. The US Supreme Court concluded, through Bilski's judgment, that the method of hedging the risk of futures commerce could not be patented as an abstract idea.

(3) Alice case

Alice's case is whether the idea of a computer program implementing an electronic escrow service that facilitates financial transactions can be patented. The Supreme Court ruled that the natural laws, natural phenomena and abstract ideas could not be included in Article 101 of the US Patent Act, and therefore Alice's patent was null and void as it was an abstract idea among the above requirements.

(4) Recent case

Recently, a hopeful precedent in software patents for 2016 came from CAFC court in the U.S. that specializes in patent cases. First, on May 12, 2016, Enfish, LLC v. Microsoft Corporation, The two key patents of this case were a quick search of computer data and the court ruled that the invention passed the first stage of Alice's two-step test, not just an abstract idea, because it was a specific improvement to the computer operating system. In light of Enfish's case, a software invention could be a legitimate patent object if it is an improvement on computer function. Second, on June 27, 2016, Bascom Global Internet Services, Inc. v. AT & T Mobility LLC ruled that Internet content filtering software could be patented. In conclusion, software and BM inventions were very difficult to become patents granted by the Patent Act. However, the CAFC, recently presented a guideline for identifying technology that is considered to be patentable through the aforementioned two judgments. However, it is still unclear what these decisions will have on the software and BM patent inventions in the federal courts and the Patent Office

(5) The U.S. Examination guideline in USPTO

Although the MPEP (Manual of Patent Examining Procedure) published by the US Patent and Trademark Office is based on the words of the

United States Patent Act, the interpretation introduces the standards recognized by the precedents. The MPEP reflects the court ’s judgment in the examination standard and harmonizes the attitude of the patent office with the attitude of the court. The first step is to judge what the applicant is inventing and what the patent wants. To this end, it is necessary to identify and understand any usefulness or practical use claimed in the invention, and to review the detailed disclosure of the invention and its specific implementation in order to understand what the applicant has invented. In the second stage, a thorough search for prior art should be conducted. In the third stage after the prior art investigation, it is judged whether the invention is in accordance with Article 101 of the United States Patent Act. At this time, it is necessary to find out the patentable scope of Article 101, and then judge whether the claimed invention falls within the four categories of the listed patents. In Step 4, if it falls within the four categories, it determines whether the claimed invention is a natural law, a natural phenomenon, and an abstract idea, which are the three judicial exceptions prescribed by the Supreme Court of the U.S. Determine whether the claimed invention falls under the legal exception of section 101 or the practical application of the judicial exception of section 101. In the case of practical application by physical conversion or practical application that produces useful, concrete and practical results, it is stipulated to grant a patent.

(6) The E.U. Examination guideline in EPO

The European Patent Convention does not define what an invention is. According to Article 52 (1) of the European Patent Convention, the European patent is granted to inventions which are novel and progressive in all technical fields and which are industrially available, so that the invention must be of a specific and technological nature. On

the other hand, the European Patent Office (EPO) defines inventions as practical and reproducible, suggests problem solving from technical considerations, defines them as practical ideas with technical features, and uses planned rules to use natural laws to arrive at predictable results. Article 52 (2) of the European Patent Convention excludes plans, rules, methods and software for conducting business, but the business model and the software are not unconditionally excluded from the object of the patent pursuant to Article 52 (2) Patentability is recognized when it includes features. Article 52 (2) of the European Patent Convention enumerates discovery, scientific theory and mathematical methods, aesthetic creation, mental activity, methods for conducting games or business, providing software and information, etc., which are not patentable inventions However, patentability is denied by Article 52 (3) only if such object or act is itself. Therefore, in the specification, if the software itself is claimed, it is excluded from patent legal protection, and in practice, discussion is focused on how to determine the software itself. Increasingly, as the importance of the software industry grows and the number of applications of related inventions increases, so does the need to address the issue of determining the scope of the software itself. However, Article 52 (3) of the European Patent Convention restricts the patentability only if it is itself (such as a simply abstract creation lacking technical features) directly related to the content of the reasons for exclusion of the patent In the case of software, for example, if the subject of invention is the software itself, the patent can not be obtained, but in the case of a machine or process using software, the software is used but not the software itself, it can be patented. Therefore, the financial business model can also be patented if it uses software.

(7) The Japan Examination guideline in JPO

At present, the definition of the invention of Article 2 (1) of the Japanese Patent Act was established in the 1959 Patent Act. Although there were negative views on the provision of the definition of invention in law, it is very important to clearly define the meaning of the main terms used in the law, and it is very important to understand the law in an understandable way. Even if the difficulties are pointed out, it is intended to reduce the number of disputes by making it clear in the text. The Japanese Patent Act stipulates in Article 2 (1) that the term "invention" means a high level of creation of technical ideas using natural laws, unlike the European Patent Treaty. However, there is a pros and cons about the fact that software has patentability. The argument varies from the theoretical discussion of whether the software uses natural laws to the point that there are difficulties in reviewing or practicing the software if it recognizes the patentability of the software. On the other hand, according to the Japanese patent law, software is defined as one of the inventions, so that the software is integrated with the hardware so that the software is registered as a method or an apparatus for increasing or controlling the performance of the hardware. In this case, if software is recorded on a floppy disk, it is recognized as a recording medium and protected as a patent object.

2. BM patent can exercise right against infringement? (After getting a patent)

U.S. cases admits joint infringement if any party "direct or control" the another party. In the U.S., Joint infringement is very related with Inducement infringement (U.S. Patent Act Section 271). In the past, it is a Inducement infringement if a person who knows the existence of a patent let a third party to infringe a patent for the purpose of infringing the patent. But in the Akamai case by the CAFC in the U.S., the third party doesn’t necessarily require that all of the components of

the patent be implemented, and if the patent is carried out jointly with the infringer, and substantially all of the components could be implemented by infringer, it would be the Inducement infringement by Infringer and the third party jointly.

(1) BMC case

Although the US Patent Act establishes the principle of establishing single entity infringement, the precedent does not deny joint infringement by plural subjects. In the case of the US case of common infringement, a common infringement was recognized if a series of relations between the pluralities of subjects related to the infringement act were recognized prior to the BMC judgment, but after the above judgment, the requirement is strengthened, The defendant must be able to prove that the defendant is direct and controlling how the defendant performs the defendant's constitutional elements.

(2) Akamai case

On August 13, 2015, the US Federal Court of Appeals (CAFC) En banc dismissed CAFC's judge in May against Akamai case and found that Limelight violated Akamai's patent. In this case, if each step of the patent infringement is carried out by plural actors, it is an issue that the patentee can insist on infringement of the infringer who has only part of the patented invention. The facts in this case are that Limelight's system is duplicating some of the steps included in the Akamai patent, and the final step was to provide the information and support required by the customer to complete it. The CAFC En banc believes that even if a party exercises only a few steps, direct infringement (Joint Infringement) may be granted to that party if the other party conducts directs or controls. The court ruled that all steps of the method are by Limelight, since Limelight has directed or

controlled each step of the way customers conduct it.

Ⅴ. The considerations for healthy financial innovation

1. Patentability of BM invention (Before getting a patent)

(1) Healthy financial innovation

It is worth to how to set up healthy financial innovation to have a balance between innovation and fairness. If innovation became strong, monopoly can occur. I think we can have a balance about this by public policy, patent law, and competition law. When it comes to patentability of BM, people are likely to discuss this issue within the patent system without considering other thing, especially about the patentability. With regard this issue, two aspects are needed to consider, the first is the relation between innovation and BM patentability, and the second is the relation between country benefit and BM patentability. Although there are lots of articles about relation between technology and patents, most of articles only mentioned that the pharmaceutical, medicine and chemical industry is strong relation between innovation and patents. I can't find good evidence about relation between innovation and BM patents. Although the first aspect can't be good criteria to the patentability, the second aspect is can be standards. Since financial system and IT system is base on the connection through the internet, and the two systems are very similar to each countries, if a company has good FINTECH with patent, the company can have monopoly easily in that country. And this company can easily apply this FINTECH to other country with patent due to the characteristics of FINTECH. So, If some countries are favor in patentability in BM, that country has the chance to make a profit from other countries. But if a country doesn't allow BM patentability, that

country would lose a chance to make a profit from other countries by competition. So some countries which have strength in FINTECH should allow BM patentability, while some countries which don't have strength in FINTECH should not allow BM patentability. And a FINTECH company has a monopoly easily with patent due to the characteristics of FINTECH, there should be competition law issue to deal with this problem .

(2) Monopoly of FINTECH patents

The patent system recognizes the temporary monopoly of individual inventors for the spread of technology and technological innovation. This monopoly problem is one of the old controversies that have always been raised in the history of the patent system. However, in the recent digital economy or knowledge economy, the problem of monopoly must be seen again. Because, in the knowledge-based economy, network externality (the greater the number of people who use one product, the more the value of the product increases. For example, as users use MS Windows more often, It's easier to solve problems and more people will use them to increase the value of Windows products) and lock-in effect (people wouldn't find other possibilities because of the switching cost once they get used to certain technologies) don't allow other technologies or products to enter the market. This can be explained by the fact that the amount of output increases exponentially as the number of input factors increases. In the information industry, the software industry, and the cultural industry such as the digital economy follow this fact. Therefore, "Internet is a preemptive one" can be said. In other words, in the Internet industry, the new economic rules of the winner-first type, which the first can take the market. Applying patents to these industries is like providing a weapon that will allow early entrants to market their late entrants

completely. Now, we must look at the issue of monopoly and competition from a new perspective, and before we can bring new technology fields into the framework of the patent system, it must be preceded by verification of the technological innovation realized through monopoly recognition.

(3) Possible policies against monopoly of FINTECH patents

- Although the beginning of a patent was intended to protect intellectual property rights, in reality, patents serve as one of the strategic choices for firms as well as means for protecting intellectual property. There are many ways in which patents can be used as a strategic competitive tool. Based on the patents they own, they may be more advantageous when presenting cross-licensing agreements or negotiating with other companies. It may be used for strategic purposes to prevent patents from being used or to prevent the acquisition of patents by competitors in order to prevent patent infringement lawsuits that may. In the process of using patent rights as strategic means in such a variety of ways, there may be an act of inhibiting competition. In this case, appropriate intervention of competition policy will be socially desirable. Competition inhibition due to intellectual property rights can occur in two forms. The first form is a case where patentees form a kind of cartel, which causes harm in general cartel. For example, patent pooling may lead to such concerns. In other cases, it is a case of abusing patent rights to claim unfair trade terms using patents, bundling with other products, or offering competitive conditions to competitors, which in turn impedes competition. Cross-licensing or co-licensing patent pooling is an effective way to avoid an inevitable intellectual property infringement or the risk of hold-ups of detainees when several patented technologies are used to develop new technologies in the field of computer software. However, this method is

based on cooperation among competitors, which causes competition policy concerns. For example, it may be the case that a competitor is unfairly excluded through mutual licensing or co-licensing. In the case of license rejection, a company that has a monopoly power in the form of holding intellectual property rights for certain intellectual property products, seems to restrict the competition by refusing to license the license period for its intellectual property to a specific business. However, if they can't gain more than expected profits by allowing access to their intellectual output, they may not want to produce intellectual output first. Therefore, over-constraining license rejection would not necessarily be desirable for licensing all the companies that want it, because it could hinder the emergence of useful technologies and products when viewed society-wide.

- It is also possible to abolish the application of the current patent system for software or Internet business methods. In addition, there is no evidence that the Internet industry will not evolve unless the business model is patented. Strengthening patents in the Internet field will contribute to the development of the patent industry rather than contributing to the development of the Internet industry. The knowledge-based economy and the digital economy are invented through interactive, sequential processes. Creativity is not just about the head of an inventor. Rather, an invention of the invention is established based on a number of different technologies. Therefore, Internet-related technologies should be protected through alternative systems other than the current patent system. The alternative model should be enough to solve the problems of free riders. The resolution of this free-rider problem must be distinguished from the exclusion of others' imitation. This is because the knowledge-based economy is a dynamic environment in which inventive technology is born through an

interactive sequence of processes, and imitation can provide incentives for technological innovation. Exclusion of free riders and encouraging creative imitation can be institutionalized by extending the scope of patent rights so that patent rights do not extend to proprietary inventors. A patent right is a right granted by industrial policy considerations, not a right granted on the basis of the basic property right that "the inventor deserves exclusive rights". In this respect, it is undeniable that rewards for social merits that have contributed to the innovation of technology have been increased, but the rewards have expanded to the point where someone's first sweat gave them the right to deprive others of the freedom to sweat. On the other hand, the reward or incentive for the creator of technology can't be achieved only by economic compensation through exclusive exclusion rights, so it would not be impossible to find a system that strengthens the concept of technology as a resource. The free software movement, the open source movement, and the evolution of Linux make it clear that this type of development also makes it possible to develop software products that are superior to proprietary software. Therefore, the hypothesis that technology does not advance if it does not give patent rights to computer software or Internet business technology is no longer established.

- Concerns about the negative impact of business model patents on the Internet industry appear to have formed a consensus on the broader scope of rights. Strengthening screening for this is not very helpful in solving problems. Rather, it is possible to consider specifically defining the problem of reducing the rights of the BM patents more aggressively. The issue of reducing the scope of patent rights can be addressed as a matter of interpreting the scope of the invention's claims as set forth in the claims, in which certain elements of the copyright

system are added to the interpretation of this patent right scope. In addition, there is a need to enforce specification requirements to enforce embodiments to be very specific in the specification and to force the disclosure of the source code used by the applicant for actual model implementation through the specification. This is in accordance with the basic purpose of granting a temporary monopoly exclusive right in exchange for disclosing technical content, as well as in that it can be used as a basis for interpretation when narrowing down the scope of rights to a specific embodiment. It is necessary to prevent the patent application for preempting the market in the simple idea stage without developing the form.

- Given the pace of development of the Internet industry, the duration of 20 years of patents is too long. If we look at institutional issues to reduce the duration of the patent, rather than reducing the duration of all Internet patents uniformly, let applicants choose the duration of their desire within a certain range, and judge the legitimacy of this choice at the examination stage. It would be reasonable to open the path of contention to the other party at this or the right conflict stage. Although the provisions of the TRIPs Agreement may be problematic in reducing the duration of patent rights, it is possible to realize a period of independent rights protection if the Internet invention or business model is protected not only from the point of view of patent law, but also in the form of other laws.

2. BM patent can exercise right against infringement? (After getting a patent)

If FINTECH patent can be protected from infringement, the innovation and patent about BM can be useless. So it is also important to consider

healthy financial innovation. In the case of BM patent infringement, unlike other patent infringement, there is possibility of Joint infringement. This issue can be divided into two cases. The first is the case when all components of patent claim are in one country. And the second is the case when all components of patent claim are scattered in several countries.

(1) If some of the infringing activities are done overseas

A typical example of a direct infringement of a patent right is a case in which a single entity carries out all of the components of a patented invention in the domestic industry. However, in the case of FINTECH, some entities may execute some of the components outside the country. It is necessary to examine whether the recognition of patent infringement contradicts the principle of patentability or the principle of patent independence. The principle of patent independence is based on the principle stipulated by the Paris Convention for the Protection of Industrial Property of March 20, 1883, that countries can freely define the scope of their rights and their validity It was introduced in order to prevent the patentee from subordinate to the patents of the home country, which would cause a disadvantage to the foreigner. In other words, the principle of patent independence is that a patent filed by a nation of an ally of a treaty with each of its allies shall not be subject to a patent acquired in another country in respect of the occurrence, alteration, extinction and effect of that right. Accordingly, as many independent patents as the number of patents granted to the same invention are established, these patents are mutually independent. The principle of patent independence is that the patent rights of other countries and the patent rights of the other countries exist independently of each other and the patent rights of other countries do not affect the patent rights of their own countries. Therefore, even if a

part of direct infringement is done in a foreign country, it can't be said that it is contrary to the principle of patent independence to judge infringement by each act. In other words, if some of the components of a patented invention are executed in a foreign country and there is a relationship between the entities, such as collusion, instrumental use, or domination and control, it would be reasonable to admit.

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Ⅳ. 훈련 참가 소감 및 총평

1. 관찰 및 평가

○ 로스쿨 학생, 현직 변호사 등을 대상으로 하여, 참여자들이 지식재산권 및 법률에 대한 기본 지식을 습득하고 있다는 전제하에 밀도 높은 실무 중심의 교육이 진행되었음

○ 강사진들도 호주 QUT 대학 교수진은 물론 현직 변호사, 국제기구 종사자들을 비슷한 비율로 구성하여 이론과 실무의 균형을 잡았음

○ 토론 수업이 강조되어 주제에 따라 그룹내에서 내용을 정리한 후 그룹별로 찬반 토론을 진행하였음

○ 지도교수(Kamal Puri)는 한국 특허청 파견자에 대해 애로사항 청취, 집으로 식사초대 등 최대한 편의를 제공해주려는 노력이 엿보였음

2. 지재권 제도 관련 제안 사항

○ 최근 스마트폰과 인터넷의 결합에 따라 Financial Technology(FinTech) 산업이 급성장하고 있음. 그러나 FinTech 산업은 BM(Business Method) 발명으로서 특허 허여여부에 대한 논란이 있음. FinTech 관련 기술이 특허를 받은 경우 권리 범위가 넓고 지역적 제한이 없어 쉽게 실시할수 있어 독점적 지위가 발생할수 있다는 이유로 정책적인 결정을 통해 국가별로 FicTech 기술에 대한 특허여부를 결정하고 있음.

○ 그러나 최근 모바일 금융 거래 등 FinTech 관련 산업이 크게 성장하면서 이에 대한 기술개발이 더욱 중요하다고 판단됨. 특히 FinTech의 최근 기술 이슈인 Block chain technology는 금융 암호화 기술의 일종으로 이를 기반으로 다양한 응용기술이 발전할 수 있으므로 다양한 응용기술이 등장할 수 있도록 정책적 토대 마련이 필요.

○ FinTech 산업 특허활성화를 노력하되 그동안 문제점으로 지적되는 과도한 독점성 또는 넓은 청구범위에 대한 우려를 줄일 수 있도록 경쟁법을 통해 과도한 독점성을 규제할 수 있는 제도적 장치 마련이 필요하고, 또한 독점성이 발생하더라도 빨리 권리가 소멸하도록 하고 IT기술의 짧은 라이프 사이클을 고려하여 FinTech 기술의 특허 존속기간을 20년보다 단축하는 것도 고려해볼 수 있다고 판단됨.