Promoting the Creation and Utilization of IP

Bamboo Forest
Bamboo, which grows straight and green, symbolizes the incision and spirit of Korea from old times.

Linking R&D with IPRs

01 *Analyzing Patent Trends of Government R&D projects*

KIPO has been conducting trend analyses for patented technology by utilizing patent information at the planning phase of government R&D projects, ensuring that these projects are efficiently carried out.

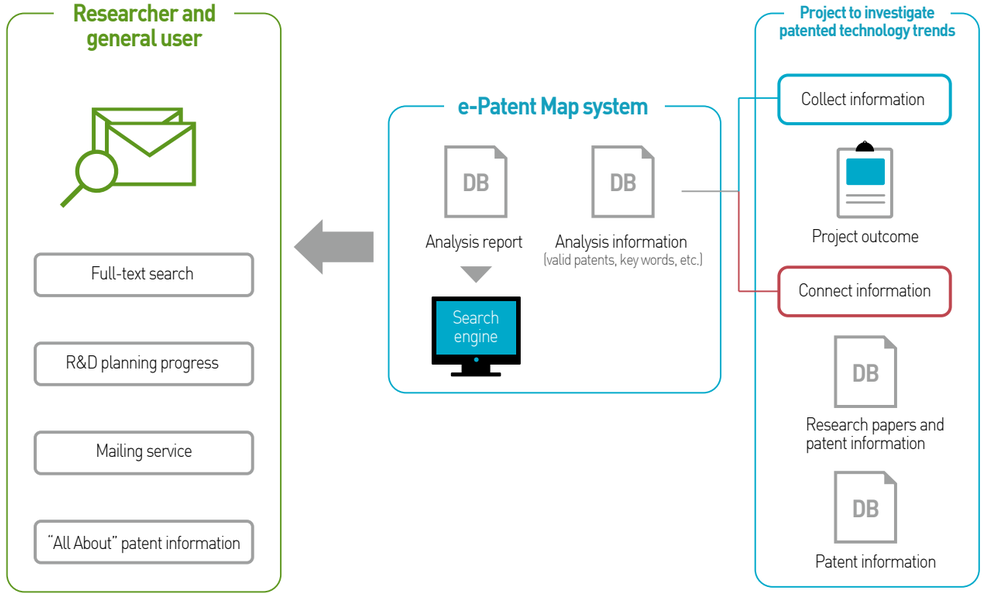
These analyses are to guide the carrying out of medium- and long-term R&D projects which aim to create superior patents that have the appeal to enter into the future market by providing patent analysis results about the project at the research planning phase or task selection phase.

Through these analyses, we can set the direction for patent creation by ensuring that similar or duplicate patents do not already exist, and that no legal issues stand in the way of a potential patent.

We supported analyses on patent trends and duplicate patents for 3,885 governmental R&D projects in 2013; 3,214 in 2014; 2,829 in 2015; and 3,113 in 2016.

Patent trend analyses are available on the Patent Map website (http://www.patentmap.or.kr). They are easily accessible for general researchers, and useful for conducting R&D.

Diagram of government patent trend analyses



02 *Project for dispatching patent management experts*

In 2006, we launched a project for dispatching patent management experts, and have since strived to create and promote high-quality IP generated by universities and public research institutes.

This project has contributed to raising IP awareness and building IP capacities through the provision of IPR consultations, the holding of seminars and briefings, and the construction of a patent management system, thereby benefitting each and every university and public research institute.

In 2016, by dispatching 13 patent management experts, we provided 806 consultations, held 173 seminars as well as briefings, and performed 685 technology transfers which are valued, in total, at approximately 18.1 million USD.

03 *Invention interviews and public IP utilization support project*

KIPO has been conducting an "Invention Interview Project" and a "Public IP Utilization Support Project" for the past 10 years to promote outstanding IP creation and utilization at university-public research institutions.

The "Invention Interview Project" invites patent lawyers and other experts to review the contents of an invention, before a patent for the invention is registered, to encourage only the best inventions. In 2016, 30 university-public research institutions participated in the Invention Interview Projects, where 3,506 cases of inventions were reviewed. 1,137 outstanding inventions were discovered, whereas 640 cases of inventions were decided as not being suited for a patent application.

The "Public IP Utilization Support Project" helps university-public research institutions to transfer their outstanding patent technologies to businesses by presenting utilization strategies to the research institutions and assisting them with technology marketing. In 2016, 30 patent technologies owned by university-public research institutions were identified for the project. Their market prospect and business feasibility were analyzed to present a utilization and technology marketing strategy. As a result, 55 cases of successful technology transfers with 8.9 million USD of technology profits from fees were finalized.

04 *Product unit patent portfolio set-up project*

To assist the transfer of outstanding patent technologies at university-public research institutions, and ease the adoption of such patent technologies by private businesses, KIPO has been conducting a "Product Unit Patent Portfolio Set-up Project" since 2011.

This project helps individual patents owned by many university-public research institutions to be re-aligned into a product unit based patent portfolio, and transfers them to individual companies. In 2016, 20 cases of the Product Unit Patent Portfolio Set-up Project were selected, and through successful technology marketing, 40 transfer cases resulted in a technology fee profit of 10.9 million USD.

05 *IP utilization network set-up project*

To ensure a smooth supply of patent technologies to actual users, that is, businesses, KIPO has been operating the IP utilization network (IP-PLUG) project since September 2015. IP-PLUG is a technology networking session that brings together diverse individuals and groups of IP users (businesses), IP suppliers (university and public research institutions, businesses), IP investors (venture capital and banks), IP brokers (Korea IP Strategy Agency and Korea Invention Promotion Association), IP utilization experts, and other private IP trading agencies to share IP information, discuss difficulties in working with IPs and to connect with necessary partners for better utilization of IPs. In 2016, 28

Regional IP Capacity Building

IP-PLUG sessions were hosted to transfer 155 cases of patent technologies to 85 SMEs, 5 of which also received an additional 1.5 million USD of private investments and loans.

The IP-PLUG started as a medical device and electronic parts network set-up in September 2015. Then, in March 2016, the network expanded to four other sectors including robots and atomization machines, construction and transportation technologies, maritime biology, as well as Internet of Things (IoT). Now, it provides excellent networking opportunities within the six top technology sectors.

Since 2013, KIPO has been working with SMEs in hosting the "Public Technology Roadshow", which support outstanding patent technologies of university-public research institutions to be transferred to SMEs and turn them into new business opportunities. In 2015, Korea's Ministry of Science, ICT and Future Planning participated in the Roadshow, and in 2016, the Ministry of Trade, Industry and Energy as well as the Ministry of Land, Infrastructure and Transport also joined. It has now become a prime example of a successful joint Ministry cooperation project. In 2016, KIPO held two Roadshows, identifying 1,035 cases of outstanding public technologies, resulting in the signing of 93 technology transfer MOUs.

01 *Regional IP Centers*

To promote awareness of the importance of IPRs and to encourage more inventions, creation as well as utilization of IPRs at the regional level, KIPO operates 29 regional IP Centers nationwide.

The regional IP Centers are run with regional and central government support and serve as an IPR support channel. In 2016 alone, 6,856 cases of domestic and international IPR registrations, along with 208 cases of customized patent maps, and 55 cases of brand development in non-English speaking markets were supported through the regional IP Centers.

The IP Centers in 8 major provinces and cities (Gangwon, Gwangju, Daegu, Busan, Incheon, Jeonju, Jeju and Cheonan) operates an 'IP creation zone' where a variety of IPR training is conducted and outstanding ideas are identified and cultivated. In 2016, 980 people received training at the Centers, 606 ideas were identified and ultimately 181 cases became registered IPRs.

The IP talent sharing project invites patent lawyers, designers and university students to volunteer their IP related talents to society. In 2016, the IP talent sharing project became a nationwide project, bringing together and partnering up 259 talent volunteers with 149 recipients in 216 talent sharing projects. 83 cases of IP consultation, 45 cases of design development support, 33 cases of brand development support, 20 cases of prior art searches, 19 cases of IP training, and 16 other cases (i.e. writing up specifications) were performed.

02 *Providing regional IP awareness*

Regional IP forums and IP policy meetings

It has become mandatory for regional governments to draw up their IP plans in accordance with the Korea's Enforcement Decree of the Framework Act on Intellectual Property (effective as of 2011), resulting in a growing need for improved understanding of IP throughout Korea. In 2016, we responded to this need by holding IP forums in the cities of Incheon, Ulsan, Sejong and Jeju, as well as in the provinces of Gangwon, Jeonnam, Gyeongnam and Gyeongbuk.

In addition, 2013 saw the launch of regional IP policy meetings for discussing ways to jointly implement, together with regional governments, advanced IP policies for building a virtuous cycle of IP creation, utilization, and protection. These meetings in which we have been actively participating in, along with 17 regional governments, are held twice a year to implement consistent IP policies between the federal and regional governments.

Customized IP training across all demographics and promoting IP ecosystem through customized training and invention competitions

KIPO operates diverse education programs through the regional IP Centers for SME management, local government officials, students and the public. These education programs demonstrate the importance of IPs and their values, and in 2016, 22,805 individuals participated in the various education and training programs.

In 2016, KIPO hosted the following different types of training sessions for both public and private audiences:

① 344 sessions of general education on the basics of the IP system for 12,235 individuals including students, to-be entrepreneurs and the public;

② 308 sessions of customized training for 3,715 people in the business community with tailored contents to match the company's IPR capacities and needs;

③ 230 sessions of focused training for 4,861 individuals with the aim of improving the corporate IP capacities and training IP experts within companies; and

④ 65 sessions of 'public sector IPR training' for 1,994 local government officials.

To promote IP awareness and encourage invention activities of the members of our armed forces, KIPO is working with the Ministry of Defense, the Military, Navy and Air Force Headquarters to conduct IPR training. In 2016, KIPO visited 93 units, and trained 6,630 soldiers through 71 training sessions. In addition, KIPO hosted separate invention competitions for the men and women of the armed forces and for the maritime police in which 34 cases of the armed forces and 11 cases of the maritime police were recognized with awards.

Enhancing the IP Capacities of SMEs and Promising Enterprises

01 *Expanding IP financial services*

IP financial services evaluate the value of IP of outstanding IP companies and provide support for guarantees, loans, and investments from financing institutions based on such evaluation results.

In 2013, together with the Korea Development Bank, we enabled SMEs to acquire loans using only their IPRs as collateral. We recently expanded our IP financing service to include the Industrial Bank of Korea in 2014 and the Kookmin Bank in 2015. In 2016, funding in the amount of 261.3 million USD was provided to companies, and over the past four years, a total of 642.4 million USD in funding has been provided.

02 *Fostering the Star IP Company Project*

We are working to nurture the potential of Korea's Star IP companies as a method for improving IP creation and utilization among SMEs. The Star IP Company Project involves identifying regional SMEs with impressive growth potential and, over a three-year period, assisting them with transforming their ideas into patents through the use of customized patent maps, as well as brand and design development.

Through this Project, we provide professional consultations on IP management strategies in order to foster regional business that standout. Since 2010, we have nurtured a total of 1,166 promising SMEs into Star IP companies and we provided intensive customized support to such Star IP companies.

Fostering the Development of an IP Workforce

01 *Increasing IP competency in academic institutions*

IP courses in university

Since 2006, KIPO has supported universities and graduate schools in providing courses (both elective and required) that incorporate IP-related content. We also sponsor the hiring of IP-focused professors in order to build a foundation for independent IP education at universities and support selected schools as IP Education Leaders to further disseminate IP knowledge within academia. KIPO also runs its IP Professor Fostering Programs to increase the number of university professors qualified to teach IP-related courses.

Undergraduate and graduate IP education courses (Science and Engineering Departments)

			Education module					
Stage	Year	Introduction to IP	Patents and creative thinking	IP creation	Patent information investigation	IP protection	IP utilization	R&D patent strategies
Course: Intro-duction	Freshman		Creative thinking and basic design		Basic creative design			
Course: Basic	Sophomore	Introduction to IP				Introduction to IP		
Course: Basic	Junior	Students can choose from the following courses: Patent analyses and invention application, Business startup, and IP I, and IP II						
Course: Basic	Senior		Compre-hensive creative design		Compre-hensive creative design			
In-depth	Graduate students	R&D strategies from a patent viewpoint						

IP University Courses

Type of Course	2012		2013		2014		2015		2016	
	Number of Courses	Number of Participants	Number of Courses	Number of Participants	Number of Courses	Number of Participants	Number of Courses	Number of Participants	Number of Courses	Number of Participants
Regular IP Courses	57	8,345	57	8,057	64	8,569	56	7,308	33	3,260
Training for Teachers	71	285	64	268	88	303	84	350	84	318
Selected IP Leading Education Institutions	3	3,441	6	7,638	9	16,002	12	20,028	15	28,936

We have developed, and are now distributing to universities, standardized IP education curriculum at both undergraduate and graduate levels, culminating in an engineering certificate and enabling students to systematically build upon their IP knowledge. In addition, we produced and distributed IP education textbooks targeting people with different knowledge levels and academic background

Master of Intellectual Property (MIP) program

Since 2010, we have operated a special Master of IP course at the Korea Advanced Institute of Science and Technology (KAIST) and Hongik University as a way of systematically nurturing Chief Intellectual Property Officers (CIPOs). The program provides an interdisciplinary approach based on IP-related subjects, such as engineering, law, and business management. Furthermore, in 2015, we selected two Korean universities to manage a scholarship program for SMEs lacking in staff members exclusively responsible for handling IP.

02 *Promoting academic-industrial cooperation*

Campus Patent Strategies Universiade

Since 2008, we have held the Campus Patent Strategies Universiade to raise collegiate interest in patent education, expand practical patent education at the university level, nurture engineers who possess the patent-related knowledge that companies need, and keep industry supplied with innovative ideas coming from universities.

At this Universiade, students at both graduate and undergraduate level, with help from their academic advisors, draw up future strategies and offer solutions to questions prepared by private companies. The private companies then screen the answers and award monetary prizes to their top choices. The Universiade represents a new type of cooperation among government, industry, and universities. Students can quickly grasp the corporate R&D process as a result of the IP-related knowledge they have gained, while participating companies are provided with new creative ideas. In 2016, we had participation from 38 companies, as well as 147 universities represented by 3,415 teams.

Design to Business (D2B) Fair

Since 2006, Design to Business (D2B) Fairs have been held as part of a concerted effort to raise design right awareness and, in doing so, reinforce national industrial competitiveness. D2B Fairs are distinctive in that companies gain creative designs through the open innovation of talented designers, while designers retain the IPRs to their innovative designs. At the fair, companies propose designs for goods in need of a makeover, and designers submit their designs to companies. When companies commercialize an award-winning design, both the award-winners and the companies sign a licensing

contract. The award-winners receive royalties in relation to the product's generated revenue. In 2016, 23 companies presented goods for the contest, and 5,385 designs from 77 universities were submitted to the D2B Fair, resulting in 108 design applications.

Collegiate invention activities and academic–industrial cooperation

As yet another way to boost inventions from universities, as well as to turn their inventions into IPRs, commercialize their inventions, and foster creative inventors well-versed in IP, we have been holding university invention contests ever since 2012. For each contest, we operate IP summer camps, and IP experts train and actively support students in conducting prior art searches and preparing patent applications. Furthermore, when it comes to especially innovative ideas and IPRs, we take care of the patent application fee, the testing of product prototypes, commercialization, etc.

During the 2016 contest, a total of 4,636 ideas were submitted from 134 universities, posing an 8% growth rate in the number of requests made compared to 2015.

03 *Fostering creative inventors*

Management of invention classes

KIPO enhanced national invention education by supporting invention classes and special class activities. Furthermore, we designated four universities to educate teachers, and we operate education centers there to train and nurture professional invention teachers, both prospective and current. In 2015, we operated creative invention education centers for primary, middle, and high school students in a total of 199 schools in 17 cities and provinces nationwide in order to develop and provide invention education programs targeted not only to students, but also their parents and the general public, thus contributing to enhanced IP awareness and invention education throughout those regions. We plan to continue to finance such programs in hopes of cultivating awareness of and interest in IP among students and their parents.

Invention promotional programs for youth

We conduct various invention and creativity activities in order to discover creative, talented inventors, and further, we select and support excellent students and teachers actively engaged in invention classes. The Korean Student Invention Exhibition has been held ever since 1988 to discover and nurture promising inventors that can lead tomorrow's knowledge-based society by encouraging them to design and produce innovative inventions. Since 2002, the Korean Student Creativity Championship has been jointly held by KIPO and Samsung Electronics, with the aim of nurturing outside-the-box thinking among today's youth by having them collaborate with each other to solve problems. This championship is distinctive in that students form teams, and their creativity is evaluated as they resolve

various tasks given to them both in advance and during the event.

The Youth Inventors Program (YIP) is a program that nurtures creativity, collaboration, and entrepreneurship among today's youth by having middle and high school students present creative solutions to dilemmas proposed by companies, which then help support the students in submitting patent applications. In addition, we award scholarships to promising student inventors.

In 2011, we established a new grand prize for outstanding invention instructors in order to recognize those who promote invention-oriented thinking and the spread of invention education.

In 2016, a total of 10 companies participated in YIP. Seventy teams (193 students total) were selected to present their ideas, and 70 patent applications were filed.

Education for the next generation of entrepreneurs

We have run educational programs, at KAIST and the POhang University of Science and TECHnology (POSTECH), aimed at middle and high school students who have the potential to become creative IP-based entrepreneurs. We offered various educational programs on core entrepreneurial skills, including creative problem solving and future technology forecasting, while simultaneously fostering IP expertise. In addition, as part of an effort to enhance the business startup capacities of students who completed the next generation talented entrepreneur course, we run a step-by-step business startup program covering everything from conceiving new inventions to the early stages of a business startup.

The Gifted Future Generation of Businesses is a 2-year program that, as of 2016, has been completed by 677 students.

04 *Events to promote inventions*

Invention Day was established to celebrate the world's first rain gauge, which was invented on May 19, 1441, during the reign of King Sejong of Joseon Dynasty. Every year, we host an annual Invention Day Ceremony to promote the importance of invention and inspire members of the general public to become inventors.

In 2016, we hosted the 51st Invention Day Ceremony, which was attended by such high-ranking government officials as the Chairperson of the Presidential Council on IP, and this type of participation demonstrates the government's strong will in supporting IP growth. At the ceremony, 80 inventors were specially awarded for their contributions to Korea's industrial development.

To further celebrate the occasion and raise IP awareness, a commemorative movie screening, ceremony performance, outstanding invention exhibition and many other exciting events were held. We also selected the "Inventor of the Year" in recognition of how new products and new technologies have contributed to our national competitiveness. The Inventor of the Year's photo and invention are publically displayed in the Inventor Hall of Fame as a way of affording inspiration to other inventors.

On December 1, 2016, KIPO hosted the Korea IP Exhibition in Seoul, which is a culmination of three exhibitions: Korea Invention Patent Exhibition, Trademark and Design Right Exhibition, and Seoul International Invention Fair sponsored by WIPO and the IFIA. It featured 643 inventions from 31 countries, including the US, Germany, and Russia. It also featured about 93 outstanding inventions and 22 outstanding trademarks and designs of Korea.

As part of KIPO's efforts to encourage female inventors to create and commercialize inventions, we host the Korea International Women's Invention Exposition alongside with WIPO and the Korea Women Inventors Association. This expo was held on June 16 to 19, 2016 at the KINTEX and was a huge success, with more than 60,000 visitors as well as 296 inventions submitted by female inventors from 25 different countries.

In conjunction with the International Exposition, we hosted the IP Wave for Creative Women Leaders on June 20 to 22, 2016. It was attended by a total of 100 female inventors and business leaders, who came from 19 different countries and each of whom had previously received IP management training from WIPO.

At the 2016 Woman Idea Living Show, women submitted creative, fun, and sophisticated ideas for everyday inventions. Women whose ideas were selected received support in filing patent applications and manufacturing prototypes. The online community was invited to vote on the prototypes displayed on the homepage (http://www.womanidea.net), and the inventors gave presentations explaining their ideas.