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Importance Of Intellectual Property Rights In Indian Perspective

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Abstract

Intellectual property rights (IPRs) have been defined as ideas, inventions and creative expressions for which there is a public willingness to grant ownership status. Intellectual property rights grant certain exclusive rights to the inventors or creators of that property to enable them to reap commercial benefits from their creative efforts or reputation. There are several types of intellectual property protection, such as patent, copyright, trademark, etc. A patent is recognition of an invention that meets the criteria of global novelty, non-obviousness and industrial utility. Intellectual property rights are a prerequisite for better identification, planning, commercialization, rendering and thus protection of invention or creativity. Each industry should develop its own IPR policies, management style, strategies and so on depending on its area of specialization. These rights strengthen the innovation environment by providing recognition and economic benefits to creators or inventors, while lack of awareness of intellectual property rights and ineffective enforcement can hinder a country's economic, technical and social development. Dissemination of knowledge about intellectual property rights and their appropriate implementation is therefore the highest requirement for every nation. This article highlights various IPR terms such as Patents, Trademarks, Industrial Designs, Geographical Indications, Copyright etc. with their corresponding rules, regulations, their needs and roles, especially in relation to the Indian context. Further, the status of Indian participation in IPR related activities worldwide was briefly discussed.

Keywords: Intellectual property rights, WIPO, patents, trademarks, industrial designs, layout design of semiconductor integrated circuit, geographic indications, copyright and related rights

Introduction

As a result of globalization, it is of utmost importance to be ahead in innovation and creativity to compete with the tough competition in technology and business. India is well known for its intellectual prowess in software engineering, rocket technology, missions to the moon or Jupiter and other technological fields. However, India lags behind in creating IPR assets in terms of registered patents, industrial designs, trademarks, etc. In a recent report by the US Chamber of Commerce, India was ranked 29th among 30 countries in the Intellectual Property Index worldwide. It is a very alarming situation for the policy makers and the nation as a whole.

The development of any society directly depends on intellectual property rights and their political framework. [1] Lack of awareness of intellectual property rights has resulted in the death of inventions, high risk of infringement, economic losses and the decline of the intellectual era in the country. Thus, there is an urgent need to disseminate information on intellectual property rights to encourage original inventions and research and technology developments.[2]

An attempt has been made in the previous section of this paper to highlight the various intellectual property rights in the context of India with the corresponding rules, regulations, their needs and role in the society.

History of Intellectual Property Rights in India

The first patent law was introduced in India in 1856, followed by the Indian Patent Act of 1970. The first major step towards protecting intellectual property rights came in 1995 when India joined the World Trade Organization (WTO) and became a signatory to the Trade Agreement on Related Aspects of Intellectual Property Rights (TRIPs). It set minimum standards for the regulation of intellectual property by its members. The Madrid Protocol, of which India is a party, now allows the filing, registration and maintenance of trademark rights in more than 90 countries.

Intellectual property rights and their classification

The term intellectual property is related to the human brain used for creativity and invention. Inventing or creating something new requires various efforts in terms of inputs of human power, time, energy, skill, money, etc. The final idea on the basis of which the invention or creation took place is the intangible property of the person who made the invention or creation she tried.[3] Therefore, statutory rights or monopoly rights are granted by law to creators or innovators to reap economic benefits from their invention or creation. Intellectual property rights (IPR) are territorial rights under which the owner can sell, buy or license their intellectual property (IP) similar to physical property

Although one must register the intellectual property rights with a statutory authority in some presentable or tangible form in order to exercise its benefits. Each type of intellectual property rights gives its inventor and/or creator special rights to maintain and obtain economic benefits, further motivating the development of skills and society.[4]

Based on the type of invention and creation of the human mind and their applications, intellectual property rights are classified as follows: i) patents, ii) trademarks, iii) industrial designs, iv) semiconductor integrated circuit layout design, v) geographical indications of source, vi) copyright and related rights (literary and artistic works, musical works, artistic works, photographic works, films, computer programs and performing arts and broadcasting).[5]

WIPO

The World Intellectual Property Organization (WIPO) was founded in 1967 in Stockholm to protect intellectual property rights around the world.[6] Later, in 1974, it becomes one of the agencies of the United Nations. The WIPO framework organization operates and regulates various policies related to intellectual property rights around the world. Economic, social and sustainable cultural development with the preservation of biodiversity, traditional knowledge through a balanced and efficient international intellectual property system is the main objective of WIPO. In addition, it is responsible for harmonizing differences between different countries, especially between developed and developing countries, by changing international regulations so that each has equal opportunities in the developing world.

Patent

A patent is an intellectual property right granted to an inventor by a relevant government agency for his new technical invention. The term invention refers to the solution of any problem in terms of product or process development. Among the various types of intellectual property rights, patents are considered the most valuable and rightfully so. The patentability of any invention must meet the following criteria:

1. Utility: The invention must have industrial applicability or be used for practical purposes.
2. Novelty: the invention must be a new technology that has not been published or available in the state of the art in that country or elsewhere in the world before the patent filing date.
3. Non-obviousness: An invention which can be made by any person of ordinary skill is obvious and cannot be patented. Therefore, the invention must not be obvious for patentability.

Under Section 3 of the Patents Act 1970, the following cannot be patented:

- Frivolous invention
- Invention against the laws of nature
- Inventions that are not fair to the health of people, animals, plants, the environment and are contrary to public order or morality
- Discovery of any living being; the discovery of any non-living matter occurring in nature; formulation of any abstract theory; the discovery of any scientific principle

- A substance or chemical obtained by mere admixture leading to an aggregation of properties; simply arranging or rearranging familiar devices
- An invention related to atomic energy and related to the security of India.

In the patent process, on the one hand, the inventor is granted exclusive rights that provide recognition and financial benefits, but on the other hand, the inventor must communicate all relevant information in a descriptive manner to the patent office at the time of filing the patent application. The information available in a patent document can be seen by anyone and it undoubtedly gives direction to other researchers to further innovate in the relevant field.[7] In India, the office of the Comptroller General of Patents Designs and Trade Marks manages the patent registration process. This office comes under the Department of Industrial Policy and Promotion of the Ministry of Trade and Industry. The procedure for applying for a patent is as follows:

1: Filing a patent application or priority application

There are four patent offices in Chennai, Mumbai, New Delhi and Kolkata (headquarters). The applicant must file a patent application in the appropriate form with all relevant information related to the invention, such as description, claims, drawing, abstract, etc. The applicant has the option to file a provisional specification to determine the priority of the invention if the disclosed invention is only conceptual phase. The applicant must then submit a complete specification in the prescribed format within 12 months.

2: Publishing the application

The patent application is published in the official gazette after 18 months. The applicant may also apply for early publication by paying the prescribed fee.

3: Opposition to the patent

Any preliminary patent opposition can be filed within three months of the publication of the patent. This type of objection is handled by the administrator of the patent office if the applicant of the patent application has submitted a request for a patent examination. There are also provisions for post-grant opposition.

4: Request a trial

The applicant must separately request a patent examination within 48 months of filing the patent application with the prescribed fees.

5: Examining and clarifying objections raised, if any

The patent examiner will review all aspects of patentability, i.e. novelty, inventive step, non-obviousness and industrial applicability, and issue a First Examiner's Report (FER) to the applicant. If there are objections in the examination report, the applicant must clarify the objections within one year.

6: Grant of patent

A patent is granted to the applicant by the Controller after overcoming the objections raised in the examination process. Under the Patent Amendment Act 2002, the applicant must pay a renewal fee from time to time to keep the patent in force. Full details regarding the Indian patent can be found on the DIP&P website. 19 It is also possible to apply for a patent since 2007. After obtaining the rights, the owner can explore these rights by industrial production or can sell, distribute or license them at will. Patent rights are granted for 20 years. Once the patent expires, the invention becomes public domain and anyone can use the knowledge.

Compulsory licenses

The Patent Act gives the inventor a monopoly on obtaining financial profits for the invention, but in contrast, in a national emergency under Section 92 of the Patent Act 1970, the government can issue compulsory licenses to a third party for non-commercial use by the public. In addition, when the authorized patent owner is unwilling or unable to meet the demand of the company to produce a patentable product or service, such as in the case of drugs, food, medical equipment, vaccination, life-saving equipment, etc., the government is fully authorized to allow someone else to produce the patentable product by granting a compulsory license . In this case, the government is required to pay the patent owner fair and justifiable economic benefits.

Patent Cooperation Treaty (PCT)

Patents are territorial rights; therefore, the applicant must file a patent application with the patent offices of different countries individually. This practice requires a huge amount of investment, time and energy. In the same concern, the Patent Cooperation Treaty (PCT) concluded in 1970, which provides the possibility to file a single international patent application instead of filing several separate national or regional patent applications. Although the grant of the patent remains under the national or regional patent offices of the various PCT member countries, the applicant gets a priority first filing date valid in all member countries, which is more than 145 in number with this single patent application.

Industrial design

An industrial design covers creative activity to achieve an ornamental or aesthetic appearance of mass-produced products or objects. Design can be expressed in either two-dimensional or three-dimensional forms. The UK Designs Act 1949 refers to features of shape, configuration, pattern or ornament. In general, industrial design refers to the shape, surface, pattern, line, color, etc. characteristics related to the appearance of industrial products, such as watches, vehicles, mobile phones, laptops, various household appliances, buildings, textile patterns or handicrafts. Aesthetic value, or how the product appeals, is a major sales concern, along with technical quality and other aspects.[8]

To be protected under most national laws, an industrial design must be new or original and non-functional. Thus, an industrial design deals only with aesthetic features and no technical features or aspects of the product to which it is applied are protected by design registration. Although technical features, if new, can be protected by obtaining a patent. 8 In addition, a design that has a literary or artistic character, such as a cartoon, label, leaflet, map, tailor's pattern, etc., is protected by copyright instead of an industrial design.

The period of validity of industrial design rights varies from 10 to 25 years in individual countries. In India, according to the Designs Act, 2000, the protection period for an industrial design is 10 years. This period can be extended for another 5 years.

Industrial design encourages creativity and skill development between the individual and the manufacturing sector by promoting products that are more aesthetically pleasing to society. The design and shape of the product not only creates an aesthetic appearance, but in the case of machinery, furniture, automobiles, etc., design is indirectly linked to ergonomics and plays a major role in customer comfort.

Patent offices in Chennai, Mumbai, Delhi and Kolkata also deal with industrial design. The Patent Office, Calcutta, maintains a Register of Designs as a matter of law of all concerned information on the applied for design.

Trademark

Trademarks already existed in the ancient world. Indian artisans used to engrave their signature on their jewelry or art creations about 3000 years ago. With industrialization, branding has become a key factor in the modern world of international trade. A trademark is a distinguishing mark or logo that indicates that a particular item is made or provided by a particular person or industry or business. Similar to a trademark, a service mark differentiates service businesses from their competitors. A company may have different types of trademarks for its different products, but a trade name is used to distinguish itself from another company or business. 8

A trademark or trade name helps companies gain recognition, reputation and trust among customers. In most cases, consumers rely on trademarks where it is difficult to quickly check the quality of a product or service. A certain segment of customers are very interested in the

brand and pay heavily for brand prestige and a similar kind of quality to stand out from the crowd.

A trademark/service consists of words (name, surname, geographical name, slogan, etc.), letters and numbers, drawing, logo, symbol, phrase, image, design, or a combination of these elements to distinguish a business or service from another. Apart from these, there are some other "non-traditional" trademarks as follows:

Scents or scent marks: the smell of freshly cut grass for tennis balls, the smell of beer for dart flights and roses for tires have all been registered in the UK. A similarly fresh floral scent reminiscent of Plumeria flowers have been registered in the US for sewing thread and embroidery thread.[9]

Sound mark or sound marks: distinctive sound marks in the form of a musical note can be registered as a sound mark. NBC successfully registered sheet music as a trademark in 1950 for its radio broadcasting services. Lion's Roar is also a registered sound trademark for MGM.

Color signs: this category includes words, devices with their color combination or color as such. Similarly, few flavors and shapes (three-dimensional characters such as the Mercedes three-pointed star) can be registered as non-traditional trademarks in some specific cases.

Important Criteria of Trademark Registration

Under the UK Trade Marks Act 1994, the three main requirements for registering a trade mark are as follows: [10]

a. A trademark should be a sign or anything that can convey information.
b. The label should be able to distinguish the products or services of one company from the products or services of another company. This is clearly a requirement for the distinctiveness of trademarks.
c. The trademark is capable of graphic representation for accurate identification in the trademark register.

Generally observed rules of trademark registration

- The word "apple" or an Apple device cannot be registered to Apple because it is not distinguishable in this case. However, it is registered as very prominent in the case of computers.
- Similarly, the Camel trademark is registered for cigarettes. A generic term such as "furniture" cannot be registered as a trademark for a chair, table or similar type of item. 11
- In the case of letters or numbers, in some countries registration is only allowed if at least a few numbers of letters and/or numbers are combined or, in the case of letters, the word combination is pronounceable.
- Similarly, common surnames are not registered in some countries because they are not distinctive.

- In addition, a deceptive designation or trademark that is misleading or violates public policy or morals is not eligible for registration.
- Designations that are reserved for a state, public institution, organization or international body cannot be registered as a trademark.

Indian Trade Marks Act

The Indian Trade Marks Act states that a trade mark can be any trade mark which is distinctive i.e. capable of distinguishing the goods and services of one business from another and can be graphically represented. Since trademarks do not confer exclusive rights that could be exploited, there is no need to limit their validity. However, without a time limit, trademark validity would lead to an unnecessary number of registered trademarks without any validity. 11 In India, the initial period of trademark registration is 10 years, after which it has to be renewed from time to time. An applicant can apply for registration of a trade mark at the Trade Marks Registry, Mumbai (Headquarters), Delhi, Kolkata, Ahmadabad and Chennai.

Trademark infringement

Infringement occurs when someone else uses a trademark that is the same or similar to a registered trademark for the same or similar goods or services. In case of infringement, the fake product is issued to the customer under the impression of a genuine product, therefore the term "passing" is also used for this type of practice. A 'spoilt' product is very detrimental to business as it takes market share away from the genuine manufacturers and customers are also cheated into receiving a lower quality product. When receiving a product of lower quality, without knowing the fact that it is a "waste", the customer may choose a different trademark in the future under the false impression that the manufacture produces a product of lower quality. An imitation in the store is also known as a counterfeit product.

Collective and certification marks

In some countries, collective marks and certification marks are used to indicate that a company's product meets certain standards. For example, in the case of chemical processing of textiles (dyeing and printing), a group of companies that strictly use herbal or environmentally friendly chemicals may consider a collective brand in addition to their individual trademarks. ISO, hallmark, wool mark etc. are some examples of collective/certification mark. So certification marks; to protect the customer's interest by helping him choose a quality product among misleading products.

Design of a semiconductor integrated circuit layout

Nowadays, life cannot be imagined without electronic devices, i.e. mobile or smart phone, laptops, computers, watches, cameras, security or medical devices, home appliances, etc. All appliances today are very compact thanks to their integrated circuits. In addition, most

instruments have a basic microprocessor control or operating system made up of integrated circuits or layout design. These circuit designs are creations of the human mind as a result of enormous investment and efforts by highly skilled professionals. While copying these designs by another party is a fatal hurdle for electronic research organizations/industry.

"Layout" means a three-dimensional arrangement of elements in which at least one element is active and/or some of them all have connections as an integrated circuit, or such a three-dimensional arrangement prepared for an integrated circuit planned for industrial production. 11

The Integrated Circuit Intellectual Property Treaty (IPIC) was concluded in Washington DC in 1989 and is open to all WIPO members. According to the treaty, protection is granted to the layout design for up to 10 years from the date of application, but a member country can grant protection for up to 15 years from the creation of the layout design. 11

In India, the Semiconductor Integrated Circuit Design (SICLD) Act, 2000 was enacted to protect the requirements of the electronics industry in accordance with the TRIPS Agreement. The Act was implemented by the Department of Information Technologies of the Ministry of Information Technologies. Any original and inherently distinctive design can be registered under the Indian SICLD Act, 2000 for a period of 10 years.

Trade Secrets

Any invention or knowledge that is not innovative (unpatentable) but is useful for business and provides economic benefits can be kept as a trade secret. In addition to this new or creative information, it is also kept as a trade secret when a patent, copyright, industrial design, etc., is or is being registered. 12

Technological information or process such as recipe, idea, device, software, blueprints, pattern, formula, maps, architectural plans and manual or any commercial information or business strategy or secret in the form of any compilation of data or databases, marketing plans, financial information, personal records, etc. may be kept as trade secrets. 13

This right has great potential for ripening secret knowledge into economic profits. Therefore, most companies protect their technologies with a trade secret rather than a patent. Trade secrets act as an incentive for incremental innovation in technology that does not meet the ambiguities of patent law and copyright.

The process of developing a trade secret requires years of experience, research and skill. The composition of Coca-Cola is a good example of a trade secret for its formula. Some countries have special trade secret rules, such as the Unfair Competition Prevention Act in Japan, the Uniform Trade Secret Act in the United States of America. The TRIPS Agreement recognizes trade secrets under "undisclosed information" but is silent on the mechanism and modalities. under common law, contract law, etc. 14

Geographical indications

The use of geographical or local origin to identify goods for commercial purposes is not a new phenomenon. Some agricultural products have special characteristics that are influenced by geographic climate or soil. "The concept of geographical indication (GI) chosen by WIPO includes all existing means of protecting such names and symbols, regardless of whether they indicate that the characteristics of a given product are due to its geographical origin (such as designations of origin) or merely indicate the place of origin of the product (e.g. source).

Champagne, Havana, Darjeeling Tea, Arabian Horse, Alphanso Mango, Nagpur Orange, Basmati etc. are some well known examples of names that are associated worldwide for their specific quality and GI registered product. Similar to the field of handicrafts, textiles, etc., the specific properties of products are linked to the human factor and its skills. 15 The reputation of products is built and maintained by masters or creators of this skill who belong to a certain region or locality in the most suitable climate. The skill is traditionally passed down from one generation to the next with great care and compromise by a particular tribe or region. Dhaka muslin, Venetian glass, Chinese silk, Mysore silk, Chanderi saree, Kanchipuram silk saree, Kullu shawls, Solapur chadar, Solapur terry towels, Kashmiri handicrafts etc. are well known examples of geographical indications for cutting edge craftsmanship.

In India, registration of such products can be done under the Geographical Indications of Goods (Registration and Protection) Act, 1999 and the Geographical Indications of Goods (Registration and Protection) Rules, 2001. The Geographical Indications Act is administered by the Controller General of Patents, Designs and Trade Marks. , GI registrar. The Central Government has set up a "Registry of Geographical Indications" in Chennai where rights holders from all Indian jurisdictions can register their Geographical Indications. Under these rules, geographical indication protection is granted for 10 years and may be extended from time to time for another 10 years.

Copyright and related rights

Copyright protects the expression of ideas of the author, artist and other creators that relate to mass communication. It protects only the form of expression of an idea, not the idea itself. The development of any country or society depends on the creativity of its people. 14, 38 Copyright therefore supports this type of activity. The following literary and artistic works are covered by copyright:16

Literary and scientific works: novels, poems, reference works, newspapers, plays, books, pamphlets, magazines, journals, etc.

Music creation: songs, musical instruments, choirs, solos, bands, orchestras, etc

Works of art: such as painting, drawings, sculpture, architecture, advertisements, etc.

Photographic work: portraits, landscape, fashion or event photography, etc

Films: includes cinematographic works such as film, drama, documentary, newsreels, theatrical exhibition, television broadcast, cartoons, video cassettes, DVDs, etc. Computer programs: computer programs, software and their related databases, maps and technical drawings.

IPR in the context of traditional knowledge and biodiversity

"Traditional knowledge (TK) means the innovations and practices of indigenous and local communities embodying traditional lifestyles; wisdom developed over many generations of holistic traditional scientific use of the lands, natural resources and environment.

The use of turmeric, neem, tulsi etc. in daily life as a ritual is a very well known example of traditional knowledge existing in India."7

A US patent was granted to the University of Mississippi for the use of turmeric in wound healing; A European patent was granted to W.R. Grace and Company for the discovery of the fungicidal effects of neem oil; the agro-biotech giant Syngenta tried to acquire the rights to thousands of rice varieties that already existed in India. These are all a few examples of biopiracy in which rights have been revoked departmentally in favor of the true owner of the Traditional Knowledge. IP-related rights, such as cultivation practices, medicinal uses of plants or herbs and plant varieties, as well as their genetic resources, are included under the Sui generic means of the unique systems of country law or region, as they are not covered by standard IPRs. systems. 7 The WIPO Convention on Biological Diversity (CBD) was concluded in 1992 with the main objective of conserving biological diversity, the sustainable use of its components and the equitable sharing of benefits arising from the use of traditional genetic resources. India is a member of this convention enacted in accordance with legislation in Parliament to protect traditional knowledge and rights of farmers 44

Plant Variety Protection and Farmers' Rights Act 2001 (PPVFR Act)

This law recognizes the individual and community roles played by farmers and their interests in the improvement and conservation of varieties. This sui generis law contains a combination of intellectual property rights and public interest provisions, harmonizing the balance between farmers and the giant seed producing or genetically advanced research laboratories and marketing companies. 45

Biodiversity Act 2002 Biodiversity includes millions of races, local variants of species and subspecies, recognized primarily as genetic, species and ecological. Global biodiversity is estimated to have 1.75 million identified species. 46 The Convention on Biological Diversity (CBD) states that a member country should facilitate access to its genetic resources to other parties on mutually agreed terms, but access requires prior informed consent (PIC) of the resource country. It also has provisions to ensure the equitable sharing of any profit from the commercialization of traditional knowledge to local people subject to domestic legislation.

"India ranks second in agricultural production in the world and around 60% of India's population depends on this sector for rural development." 47 The Biodiversity Act 2002 thus protects the rights of India's vast population, especially farmers, their resources and raw materials , such as seeds, fertilizers, pesticides, etc. It impacts agricultural production, farmers' livelihoods as well as sustainable utilization and equitable benefit sharing in a positive direction. The Central Government also established the National Biodiversity Authority (NBA) in 2003 for the proper implementation of the Biodiversity Act, 2002.
The Patents Amendment Act 2005 The Act (Section 3) states that "merely a new use of a known substance" and an invention which is in fact traditional knowledge or which is an aggregation or duplication or known properties of a traditionally known ingredient or ingredients will not be an invention. These provisions of the laws prevent the misappropriation of TK and its applications available in the public domain in India. 48

IPR Status of India

The WIPO World Intellectual Property Indicators Report (WIPI) also showed that patent and industrial design filing activity increased again in 2020, illustrating the resilience of human innovation even in the midst of a dire global health situation.
Trademark application activity grew by 13.7%, patents by 1.6% and designs by 2%, according to WIPI, which collects new data from around 150 national and regional offices and shows how innovators, designers and brands are increasingly relying on the tools intellectual property in expansion. their businesses and looking for new growth.

Patents

Global patent filing activity returned to growth in 2020 after the first decline in a decade in 2019, which was driven by a decline in China. In 2020, China's IP Office showed growth again with 1.5 million patent applications. This was 2.5 times more than the amount received by the patent office of the second leading country, the United States of America (USPTO; 597,172). The US was followed by Japan (JPO; 288,472), the Republic of Korea (KIPO; 226,759) and the European Patent Office (EPO; 180,346). Together, these five offices accounted for 85.1% of the global total.
Among the top 10 offices, only three offices - China (+6.9%), India (+5.9%) and the Republic of Korea (+3.6%) - saw application growth in 2020, while Germany (-7.9 %) and Japan (–6.3%) experienced a steep decline.
Germany (62,105), India (56,771), the Russian Federation (34,984), Canada (34,565) and Australia (29,294) also featured in the top 10 offices.
Offices located in Asia received two-thirds (66.6%) of all applications filed worldwide in 2020 – a significant increase from 51.5% in 2010 – thanks to long-term growth in China as well as increased intellectual property activity in other parts of Asia. North American offices accounted for nearly one-fifth (19.3%) of the global total, while European offices accounted for just over one-tenth (10.9%). The combined share of offices located in Africa, Latin

America, the Caribbean and Oceania was 3.2% in 2020. Ten years ago about five out of 10 IP applications were in Asia, last year this figure was closer to 7 out of 10 IP applications.
With a focus on foreign filings, a sign of a desire to expand into new markets, US applicants filed the most foreign equivalent applications (226,297) in 2020, followed by Japan (195,906), Germany (99,791), China (96,268). and the Republic of Korea (80,133).
The number of valid patents worldwide increased by 5.9% to approximately 15.9 million in 2020. The highest number of valid patents was recorded in the US (3.3 million), followed by China (3.1 million), Japan (2 million) and the Republic of Korea (1.1 million) and Germany (0.8 million).
China saw the fastest growth in valid patents in 2020 (+14.5%), followed by Germany (+8.1%), the US (+6.9%) and the Republic of Korea (+4.6%). Japan showed a small decline in 2020 (-0.7%).
In 2019 – the most recent year for which complete data is available due to the lag between confidential filing and publication – computer technology was the most frequently cited technology in published patent applications worldwide, with 284,146 published applications, followed by electrical machinery (210,429), measurement (182,612), digital communications (155,011) and medical technology (154,706).

Trademarks

In 2020, an estimated 13.4 million trademark applications covering 17.2 million classes were filed worldwide. The number of classes listed in applications increased by a remarkable 13.7% in 2020, marking the eleventh consecutive year of growth. Many countries around the world have experienced a significant drop in economic activity during the COVID-19 pandemic. In contrast, 16 of the 20 largest offices saw significant increases in trademark registration activity. In fact, 11 offices saw double-digit growth in 2020, ranging from 12.2% in Germany to 44.3% in Indonesia. In most cases, overall growth was driven by growth in resident filings.
The Chinese Intellectual Property Office had the highest volume of registration activity[1] with around 9.3 million classes; followed by the USPTO. (870,306), the Islamic Republic of Iran (541,750), the European Union Intellectual Property Office (EUIPO) (438,511) and the Office of India (424,583). The Indian office has overtaken Japan to become the fifth largest office for trademark registration activity.
Offices in Asia accounted for 71.8% of all trademark filings in 2020, up from 41.3% in 2010. Europe's share fell from 34.1% in 2010 to 14.7% in 2020. North America accounted for 2020 5.9% of the total while the combined share of offices located in Africa, Latin America and the Caribbean and Oceania was 7.7% in 2020.
Strong growth in global trademark filing activity is driven by massive growth in trademark filings in advertising and business management related products and services; pharmaceuticals; surgical, medical and dental goods. The share of drug-related submissions

increased from 4.1% in 2019 to 4.6% in 2020, while the share of surgical, medical and dental goods increased from 1.5% to 2.3%.

These trends have been reflected at the national level in many countries, where there has been a large increase in trademark registration activity. For example, the 15.4% growth in trademark activity in India was driven by pharmaceutical resident registrations. In Iran, on the other hand, local pharmaceuticals were the third largest contributor to the overall increase of 19.1%, behind advertising, business management and transportation.

An estimated 64.4 million active trademarks were registered worldwide in 2020 – up 11.2% from 2019, with 30.2 million in China alone, followed by 2.6 million in the US and 2.4 million in India.

Industrial designs

In 2020, an estimated 1.1 million industrial design applications containing 1.4 million designs were filed worldwide, representing a 2% year-on-year increase. The Chinese IP Office received applications containing 770,362 designs in 2020, accounting for 55.5% of the global total. This was followed by EUIPO (113,196) and KIPO (70,821), USPTO (50,743) and Turkey (47,653).

Among the top 10 offices, the UK (+9.5%) and China (+8.3%) saw strong growth in filing proposals in 2020, while Turkey (+3.1%), Republic of Korea (+2.1 %) and the USA. (+1.8%) experienced moderate growth.17

Offices located in Asia accounted for 70.9% of all designs in applications filed worldwide in 2020, up from 60.8% in 2010. Europe's share fell from 31.5% in 2010 to 22.1% in 2020. The combined share of Africa, Latin America and the Caribbean, North America and Oceania was 7% in 2020.

The total number of industrial design registrations valid worldwide increased by 11% in 2020 to approximately 4.8 million. The largest number of valid registrations was in China (2.2 million), followed by the US (371,870), Republic of Korea (369,526), Japan (263,307) and EUIPO (251,692).

Designs related to furniture and homeware accounted for the largest share of global registration activity in 2020 (18.4%); followed by textiles and accessories (14.1%); tools and machinery (11.6%); electricity and lighting (9.8%) and construction (8.5%).

Varieties of plants

Around 22,520 plant variety applications were filed worldwide in 2020, an increase of 5.1% over 2019. China's competent office received 8,960 plant variety applications in 2020, accounting for 39.8% of of the total number in the world. China was followed by the Community Plant Variety Office of the European Union (CPVO; 3,427) and the relevant authorities of the USA (1,432), Ukraine (1,260) and the Netherlands (837).

Among the top 10 offices, six saw filings increase between 2019 and 2020, with double-digit growth in Argentina (+18.8%) and China (+14.4%). Strong growth was also reported in the Netherlands (+9.1%), the Republic of Korea (+4.9%) and the Russian Federation (+4.6%).

Geographical indications

Figures from 92 national and regional authorities show that there are an estimated 58,800 protected geographical indications (GIs) in 2020. such as Gruyère for cheese or Tequila for spirits. Germany reported the largest number of valid geographical indications (14,394), followed by China (8,476), Hungary (7,566) and the Czech Republic (6,180).

Valid geographical indications related to "wines and spirits" accounted for approximately 56.1% of the total in 2020, followed by agricultural products and foodstuffs (38.6%) and crafts (3.6%).

"Patent data refers to the number of equivalent patent applications. Trademark data refers to the number of equivalent trademark applications based on the number of classes - the number of classes listed in the applications. Design data refers to the number of equivalent industrial design applications based on the number of designs – the number of designs contained in the applications."

Conclusion

In a knowledge-based economy, intellectual property rights are very important for progressive social development. IPR is a basic necessity to be a part of local and global competitive business, because without the dissemination of knowledge and implementation of IPR, creating an innovative environment is really impossible. It is essential for policy makers to integrate IPR into the basic education system and promote the registration of IPR by encouraging innovators and creators. India has all the resources in terms of available raw materials, cheap labor, innovative and creative dedicated workforce. There is no doubt that India and other developing countries will definitely take advantage of their proportional share of global trade by exploring intellectual property rights.

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