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RESEARCH ARTICLE

INTELLECTUAL PROPERTY RIGHTS: A BIRD'S VIEW AND ITS IMPLICATIONS IN INTELLECTUAL PROPERTY

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Abstract

Intellectual property (IP) is a unique set of ideas and creativity developed in the brain of individuals. It is the assets of individuals and nations which has given exclusive rights to inventors or creators in form of intellectual property rights (IPR). These rights are designated by statutes in order to enable them to implemented for public purpose and maintain the reputation of inventor and his investment on invention. There are different forms of IPR that satisfy the criteria of novelty, non-obviousness and utility. Lack of knowledge on intellectual property rights may cause the damage to economic and social development of nation. The present review highlights various forms of IPR and their role, along with related Indian context. Further, the statutes of IPR related activity have been discussed in brief under a single umbrella.

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Introduction:-

Intellectual Property (IP) relevant to unique creations originates from the human intellect. Inevitably, it is a product of human mind used for his wellbeing, such as inventions in all fields of human endeavor including technology, designs, artistic, music, broadcasts, trademarks, commercial service marks, logo and literary. These properties may be industrial property or non-industrial property resulting of intellectual activity in industrial and artistic field's scientifically (1,2). It has been well known that prosperity of nation depends on the exploitation of its intellectual property (IP). These properties are valuable assets that play a crucial role in economics of a nation and described as the "Knowledge Goods" (3).

Properties may be corporeal and incorporeal; corporeal property may be termed as tangible, which relates to material things. The incorporeal is intangible which includes immaterial one. The immaterial things, which law recognize as the subject matter of rights which extended to various immaterial products resulted from the human skill and labor, which are referred as intellectual property (IP) due to outcome of human intellect (4).

These intellectual activities are well protected by laws; assure legal rights to inventor or creator in the form of intellectual rights, which are tangible, statutory and territorial rights (3). The law of intellectual property is territorial in nature, by confirming exclusive rights to the owner or creator to enjoy and prevent misuse for a specific period of time. Due to rapid development in science and technology with cost associated of inventions, there has been global pressure on the protection of IP in legal way. The stakes of the developers of technology have been raised and

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hence, there is need to protect the knowledge and skill from unauthorized use which leads to burden and loss, thus infringing on individual rights. For this purpose statutory law is very essential for recovery of investment made in inventions by the inventor (5,6,7).

Today, IPR is best tool to protect the effort made and time spend by the inventor on his IP, since it yields the inventor an exclusive rights for a certain period of time. Thus IPR, in this form, supports the overall development of a country by promoting economic growth with healthy competition. In this manuscript, the author has tried to exhibit a bird's eye view on the concept of intellectual property and its rights in present scenario.

Objectives of Intellectual property rights (IPR):

1. To preserves novelty and originality.
2. Strictly speaking, the object behind intellectual property is that a person who creates a work or his idea and when he develops that idea, he has a moral and legal rights to control over its use and right to prevent others from taking unfair advantage of the effort.
3. To create awareness, about the soc-economic and cultural benefits of IPR.
4. To promote the commercialization and globalization of IPR
5. Solidification of IPR administration and its management procedures
6. To have the effective and strong legislative structure to balance the rights of creators/inventors.
7. To strengthen the enforcement and judicial system to combat the infringement of IP
8. To incentivize innovation of different generations of the IPR,
9. To promote and expand the human skill by the training and research regarding the IPR.
10. To build up the authority concerned to the IP registration.
11. To mobilize the IPR according to changes in the circumstances of society (9,10,11,12,13,14).

Intellectual Property (IP) and its Rights:

Intellectual Property (IP) is an intangible and corporeal right; whatever is produced or created by the human intelligence, labor, skill and efforts are referred as Intellectual property⁸. Thus, it confers the inventor and to authorizes him to take the action against anyone who exploits it without the concern of the original inventor or creator. IP is usually translated to tangible one when they assign the rights through law.

A person's intellect may be as valuable as any other material property; thus, intellectual property can be justify as property by many theories such as a) utilitarian theory b) labour theory, c) personality theory and social planning theory. Utilitarian theory, states that by allowing inventors to get profit from his original work and monetary benefits for their technological inventions and artistic creation which gives maximum benefit for the maximum members of the society. According to labour theory, person's applies his mind, that is mental labor for the creation of the products or process, which is knowledge goods, which would be entitled for the protection of such goods. The personality theory indicates that there is emotional attachment between the creator and his creations, which can be referred to as property and protected to as foster fundamental human needs such as privacy, self-realization, identity and benevolence. According to social planning theory, social welfare is inextricably linked to intellectual property, which can shape and foster achievement (4).

The bunches of rights in relation to objects / materials created or invented by creator/inventor for the first time in the world is known as Intellectual Property Rights (IPR) which are enforced by various laws. It is a legal entitlement that attaches to certain types of prowess, which are intangible. The purpose of IPR is to protect IP and to give utmost respect to the man for his invention, skill and creativity and knowledge which declares him as a superior intellectual entity on this mother planet. In India, National intellectual property policy was adopted in 2016 to guide future development of IPRs in the country, with the slogan of "Creative India; Innovative India". Over all the object of IPR is to protect, promote and preserve the private person's rights over the intellectual property. A few IP rights are automatic in nature, and while others will need formal applications and procedure to register. These rights are enshrined in article 27 of the Universal Declaration of Human Rights. There are numerous advantages to securing the IPR: I. Increase the market value of products and services of licensee II. To access finance for future business. III. Rolling ideas and thoughts into profit making assets. IV. Improvement in export and import business.

History of Intellectual Property of rights (IPR):

For the first time, IPR was legalized in 1883 through Paris convention regarding industrial property, later, 1886, the Berne convention is for copyright, after this the WIPO is the core organization enforcing both convention to

promote the innovativeness in the international IP system. The roots of laws related to IPR were first traced in Europe, during the fourteenth century with the practice of granting the patent. The very first copyright was found in a floating city called Venice, Italy, where the system of IPR was brought to the light with the help of Venetian statute in 1474. Although, there is some evidence of patent rights which was recognized in ancient Greece in the year 500 BCE in Greek city of Sybriai (Italy), but this was obscure in nature. The first known patent was granted to Filippo Brunelleschi for his industrial invention (Barge; part of the boat) for the period of 3 years in 1421 in Florence, Italy. This system gradually moved to the other parts of European countries. In 1449, John of Utynam, a glass maker, was the first English patent recipient for the period of 20 years for inventing glass making process by King Henry IV. Finally, in 1623 parliament of the England enacted the statute of monopolies which preserves the right to grant patent for the invention for 14 years of terms. After this in 1790, The United States Congress passed the first Patent statute to promote the progress of science and useful arts. Next year, this was followed by France. By the end of the 19th century, many countries started to adopt the laws and administrative procedures related to the IPR system (6).

In the Indian context, the law regarding the IPR is more than 160 years old, referred to as the Patent Act 1856, enacted by British, which provides the rights for a 14 years term. Along with these there are many provisions and rules that are enacted in the form of acts and rules depicted in Table 1.1

Importance of IPR in present scenario:

1. Stimulating innovation: The strong IPR provides legal rights and corporeal rights for the inventors. This encourages individuals and business enterprises to invest in research and development. As a result, country develops technically and scientifically.
2. Support of government with legal rights: The government plays very important role by enacting the law and creates an environment of creativity and security for inventors along with the grants of legal rights.
3. Economic development: An IPR system attracts investments and promotes overall economic development of a nation.
4. Enhancing the competitiveness: IPR enhances competitiveness in domestic and international markets, which is responsible for the creation of job and increase in exports.
5. Promoting the international relationship: The country's with the strong IPR enhances nation reputation and facilitating the trade negotiations with promoting the export of innovative products.
6. Safety and Public health: IPR contributes to public health and its safety by promoting availability of life-saving treatments and products for the instant pharmaceuticals industries.
7. Initiation of collaborative research: The collaboration of different creatives brings the skills and ideas together; this leads to unique inventions, which is very essential in the current world and also for broad-minded individuals.
8. Protection of the plant varieties: The protection of plant varieties, prevention of various forms of unfair competitions, prevention of misappropriation of goodwill, protection of reputation.
9. Communication and network: Improvement in transport and communications is due to globalization which has a huge impact on Intellectual property.

Intellectual property law is thus one of the most effective and fastest growing branches in law. In the present scenario broadcasting, cable casting, telecasting rights, internet websites, Cyber space and Artificial Intelligence, ChatGPT facilities in branch of data science, have become the most important integral part of intellectual property (IP).

Forms of Intellectual property rights

Patents, Copyrights, Trademarks, Industrial designs, Geographical indications of goods, Trade secrets, Integrated circuits and also protection of plant varieties are different forms of Intellectual property rights (IPR). All these properties create goodwill for the growth of individuals and the nation (15).

Patent:

The word "patent" comes from the Latin term "Patere" which means "to lay open". This is one of the basic monopoly intellectual property rights, awarded for an invention by the government to an inventor or patentee for a period of 20 years. The Patent Act in India is initiated 150 years ago. The first one was found in the Year 1856 during British regime (4). The patent may be regarded as a legal document safeguarding the privileges and rights of an Invention. In India it is a subset of intellectual property law, aiming to provide the exclusive rights to inventors.

The person procure/grant patent known as patentee or proprietor of the patent. This can be granted to the product and processes (any new article, composition of matter, machine) which processes usefulness, novelty, non-obviousness and capable industrial applications.

Patent rights can be licensed or sold for a commercial purpose, such as the right to initiate legal proceedings against infringement. If the invention is against natural law and public, frivolous, harmful to health of man, animal and natural resources, discovery of any living thing and non-living substances, and manipulating and formulation in immoral way, invention related to mass killing and related to threat to national security, just the arrangement of known materials. Any process for the medicinal, surgical curative, prophylactic, (diagnostic, therapeutic), mathematical or business methods computer program or algorithm, a presentation of information of integrated circuits, mere use of known machine-all of these above are not patentable according to the Patent Act 1970, 2003, 2016 in India (4,17,18). According to Patent Amendment Act 2005 Section 3 states just new use for a known substance with effect of the traditional knowledge or known property of traditional component will not be recognized as the invention. India's patent law operates under the first to file principle or first come first serve principle-if two people apply for a patent on an identical invention, the first one to file the applications will be awarded the patent. The patent application must be prepared by an expert with the assistance of a patent lawyer. Application must contain the information about the invention, description of nature of invention, figures and illustrations, utility etc; in patent office, after scrutiny, may reject the application or grant the patent. If rejected, the applicant may appeal to patent appellat board (17).

Copyright:

Copyright refers to an original piece of written or recorded literary, such as books, songs, poems, novels, newspapers, journals, pamphlets, plays, photographic works, motion pictures, films, cartoons, labels, computers programs, maps and technical drawings, paintings, and dramatic musical concepts like bands, solos, orchestra's choruses or artistic work; databases, choreographs, architecture sculpture, drawings all these cover under copyrights. Copyright is a legal term denotes rights of the creator, performers and broadcasters (19). The Indian Copyright Act 1957 regulates and registers copyright; this act was amended in 2012; according to this act, author procures copy right, his work can be registered at register of copyright maintained in the copyright office situated in different parts of the country (17). The copyright term varies according to the nature of the work (60 years after the date of author in case of literary dramatic musical concepts or artistic work) (20). The person who holds the copyright is known as author and owner; here author means in case of musical works-composer; artistic work; photographic-photographer; Literary/dramatic work-author of the work is well defined in the WIPO Performance and Phonograms treaty (WPPT); it allows other individuals to use the copyrighted work in the form adapted, published, performed or broadcast for the royalty and licensee can sell the copyright (21). In some countries like Germany and France these rights are designated as neighbouring rights. India is one of the signatories to the Berne Convention on copyright (21-24).

Trademark:

This is a distinctive right given to sign or logo indicator symbols images that are able to identify by graphical and capable of differentiating the goods or services of one person from others. This includes combination of colour, shape and way of packaging (23). This also includes audible signs, colored marks, sound marks, olfactory marks, 3D and 2D shape can be registered as the trade marks which are emerged from mind set of man. The Trademark or Tradename preserves companies trust, recognition and reputation and standard; genuine among the consumer; this determines the quality. Presently, different marks are categorized into many types such as Trademarks (for certain goods; eg Nestle, Nike, Puma) and Service marks (for service mode eg: Amazon.com, Master card), collective marks (both goods and services; e.g., Reliance Communications, TATA Sons), certification marks (marks from certified authority eg: ISO, Hallmark) and well known marks (logo-commonly well known in market) (24-25).

In Indian context, the trademark was traced back to ancient India, where Indian crafts were seen with signatures on their artistic work and jewellery work (23). Today, due to industrialization, globalization and liberalization in the competition world trademarks has become key driving factor for promotion of business and economics of the nation, as well as maintaining the quality of the standard. For this purpose there are some requirements to set as trademarks. a. There must be signs that convey the message and information. b. The sign should be able to distinguish the goods or services. c. The sign should be graphically represented to show the precise identity during the registration procedure (25). Apart from this, in a few countries, common surnames is not allowed to be registered, and deceptive signs that are contrary to public order and public health are not fit to be registered. Along with this, the government

has reserved some signs or logos for their functionary bodies, institutions and international bodies that cannot to register as trade mark. In India, the term of the trademark rights is given for 10 years and it can renew time to time (18,23,26,27,28).

Industrial Design (ID):

This IP attributes to acquiring the registration which protects originality and creativity of shape, configurations, patterns ornamentations or composition of the lines or colors applied to any article (Artificial/Partial). Along with this surface appearance related to industrial products such as textile designs, buildings, home appliances and handicrafts cover under the industrial designs. Moreover, this type of design should be novel one with originality and should have a visual appeal being disgraceful and nasty in nature (29). An industrial design (ID) inspires creativity among individuals and pleases the customers to buy the products. This indirectly boosts manufacturing unit by providing the employment for upcoming generations having the role of customer comfort (30). In India, as per Design Act, 2000 the duration of the protection of industrial design is 10 years, extensible for another 5 years.

Geographical Indications (GI):

The term Geographical Indications, as denoted by WIPO includes all existing means of protection of such symbols and names of the products that are indigenously originated in a specific place and geographical region (23,31). A geographical indication is a sign on goods that have a specific definite geographical territorial origin (32,35). The signs used in the goods possess special qualities reputations or characteristics attributable to their place of origin. Certain products, such as agricultural or natural products also typically influenced by specific local factors such as soil and other climatic factors such as temperature, humidity, water, etc. This also includes manufactured goods which are processed or prepared in that specific territory (35). GIs have traditionally played a fundamental role as source identifiers by informing consumers about the originality. GI also preserves the culture and economic heritage. The GIs also help in promoting the goods of a particular area in so far as they avoid consumer confusion by preventing misrepresentation and misuse of GI (33,34,35).

The Mysuru Sandal soap and oil, Mysuru Betal leaf, Channapatna Toys, Mysore Silk, Mysuru Agar bathi, Trupathi Laddu, Darjeeling tea, Salem Silk and fabric, Kanchivarum silk are some of the best examples of GIs tags of India with special qualities and features. In the same way, some of the food items such as Coorg Orange and Cardamon, Alphonse Mango, Nagpur Orange, Peppercorns, Basmati, Bangalore Blue grapes etc; are famous GIs founds in the country. Similarly, some of the human skills and factors which are inherited traditionally from one generation to next found in the particular community for e.g., Mysuru silk, Muga silk, Kashmiri handicrafts, Warangal durries, Thanjavur art plate are result of GIs which are registered in India and conserved from long time for their originality (36). In India, registration of such products can be done under Geographical Indication of Goods Act 1999 and rules 2001, The GI is regulated and administrated by the Controllor General of patent, design and trademark also and registrar of Geographical Indications. The right holders of Geographical Indications from all over India can register at the office of Geographical Indication Registry (Chennai) established under the Central Government of India. As of today, around 400 GIs tags are registered from different parts of the Indian sub-continent. The registration of a GI for a period of 10 years shall be renewed from time to time in accordance with the provisions of the Geographical Indications Act 1999. Registration of GI in India assures that it can be maintained and exclusively used. It also gives the right to initiate infringement action against any infringer.

Trade Secrets:

Any non-innovative knowledge that is kept in confidential is not patentable. But probably very useful data which accelerates business can be considered as the trade secrets (37). This also involves the methodology of distribution, advertising, and lists of suppliers, customers their sales. The technological Information such as recipes, ideas, devices and software, databases, personal records, etc. can be kept as trade secrets (38). Sometimes, the creative information also kept as trade secret when the registration of the rights is pending. This right is a very powerful tool for economic gains; thereupon, the companies are going disclose their methodology to control the piracy for this purpose it has kept has a trade secret than patent e.g., the composition of Coca Cola, and other energetic drinks and sweets which are manufacturing at the local level etc (23,39). In a few countries, like the United States, they have adopted specific rules, namely the Uniform Trade Secrets Act for the Trade secrets and Unfair Competition Prevention Act in Japan. Usually trade secrets are protectable under various state statutes and by the contractual agreements between the parties for e.g., employers are required to get the signature of employees for not to disclose the trade secret with the help of the confidential agreements. Trade secrets are recognized by TRIPS agreement under common law and also via the law of contracts (38, 39).

Integrated Circuits Layout:

In the present scenario, electronic gadgets such as smart phones, watches, laptops, computers, cameras, and health care devices have become an essential part of our lives. All appliances depend on integrated circuits made up of silicon chips, which have the property of being semiconductors. These semiconductors are capable of conducting electricity through materials such as silicon, selenium, germanium, etc.; they are used in microprocessors that have a base control or operating system that has various layout designs to perform electronic circuitry functions. These designs may be in 3D or have a different layout well planned for the manufacturing of the electronic appliances. These designs of circuits are thoughts that come from the human mind as a result of the huge investments in the field of electronics are commercialized. Whereas pirating these designs will be the major setback for research and development. To combat the problem of piracy of design layout, The WIPO has set rules and regulations in the form of a treaty on the Intellectual Property of Integrated Circuit (IPIC), which was held in 1989 in Washington. This treaty provides the protection of IPIC up to 10 years from the date of the applications. In Indian context Semiconductor Integrated Circuits Layout Design Act (SICLD)-2002 secures the rights to the layout design of circuits for 10 years. It is implemented by Department of Information Technology under the Ministry of Information Technology.

Protection of Plant Varieties:

The continuity and survivability of life depend on the food and crops produced in agro-industry, which is the back bone of a nation. Being, that India is an agricultural country, there are many varieties of food crops that are indigenously and traditionally cultured by our farmers (40) (e.g., different paddy seeds), which are maintained and culture from generation to generation. It has to protected and preserved from the exploitation of multinational company. For this purpose, there should be rules and regulations implemented by the government in the form of statutory act. The objectives of this act should be to a. recognize the role of the cultivator and conservers by encouraging them for their contribution and stimulate them to produce traditionally the new varieties of seeds. b. To grant moral and economic rights to farmers who are the inaugural creators of plant varieties, which is highly economically beneficial to other farmers and society. c. To preserve the rights and intellectual property of local farmers and their seeds (41).

In view of above consequences, the Indian government have enacted The Plant Variety Protection and Farmers rights Act- 2001 to protect the plant varieties, but the act came into force on 30-10-2005 through authority. India has adopted a sui-generic system instead of the patenting to protecting new variety of plant. The Department of Agriculture and Cooperation will assist for the registration and other matters. The duration of protection of plant varieties is different from plant to plant (18 years for trees and 15 years for other crops) (42).

Sources of Intellectual Property act in India**Table 1.1:-** List of the Intellectual Property laws enacted in India according to year.

Sl.no	IPR enacted acts in India	Year
1	Patent act on the basis of British law-1852	1856
2	Patent Monopolies called exclusive privileges	1859
3	Patent and Designs Act	1872
4	Protection of Inventions Act	1888
5	Modern patent era by patents and Designs Act	1911
6	Appointment of Controller General of patents for the first time in India	1947
7	The Copy right Act	1957
8	Justice Ayyangar's report	1959
9	Introduction of Patent Act bill in Parliament	1967
10	Patent Act bill was passed by parliament	1970
11	The Patents Act came into force on April 20, 1972	1972
12	Inclusion of Exclusive Marketing Rights through Amendment	1994
13	New patent amendment Bill referred to selected committee	1999
14	The Trade mark Act	1999
15	The Geographical Indications Act	1999
16	Protection of Plant varieties and farmers rights Act	1999
17	Designs Act	2000
18	The Information technology act	2000

18	Geographical Indication of goods	2001
19	The Patents Act 1970 with second amendment came into force	2003
20	The Biological Diversity act	2005
21	Patent Act 1970(2016 amendment rules)	2005
22	National IPR policy	2016
23	National Intellectual Property Awareness Mission (NIPAM)	2021
24	Kalam program for Intellectual property literacy and awareness Campaign	2020

The source of intellectual property law in India depends on several national and international IPR treaties, accords and conventions. India being the member of the many Global IPR treaties follows the international procedural and substantive matters when dealing with Intellectual Property rights (43).

Indian IPR in international considerations:

After become the signatory to the WTO since 1995, WTO members should enact IP Protection acts in their national laws. The provisions and procedures that are enforced in India are more or less similar to those in the United Kingdom.

Along with this, India is also a part of the following International IP agreements (44):

1. The Paris Convention-1883: According to this convention, any person from the signatory nations can apply for a patent or trade mark in any other signatory nations. The rights and status granted are similar for all member nationals. This convention emphasis on industrial property in the widest sense.
2. The Berne Convention-1986: According to this treaty, member states recognize the copyright of authors from other member states in a similar way as the copyright of their own nationals (181 signatory member nations)
3. The Madrid Convention-1981 and protocol-1989 allow person to file a single trade mark application at their national's office that will provide safe guard for all multiple nationals. This system simplifies the management of the mark because recording and renewing the marks is done through in a single procedural step.
4. The Patent Co-operation Treaty (PCT) of 1970, 1984, and 2009: A patent application filed under this is a central system is referred as international applications. It provides the unified procedure for filing patent applications in all signatory nations through single applications.
5. World Intellectual Property Organization (WIPO) 1967: created by the UN (Head quarters-Geneva) with the objective to encourage creative activity, to promote the protection of intellectual property throughout the world. India became member in 1975, currently WIPO has 193 member nations.
6. Budapest Treaty of 1977: is a treaty on the recognition of the deposit of microorganisms relating to patent procedures. India has signed it and became a part in 2001.
7. Nairobi Treaty 1981 which was signed by India in 1983, this treaty relates to the sports. But India is not a member state of the Hague agreement, which allows the protection of design in multiple countries through a single filing.

Enforcement of IPR in India:

Indian legislation related to intellectual Property (IP) covers every significant aspect for the protection of IP. From time to time there are many amendments are done for many act to enforce the rights coupled with the IP. Along with this over all, in India, rights related to IP can be enforced by adjudication of law through civil and criminal courts. These laws, which pertain to setting out procedures for both civil and criminal proceedings concerned with IPR, as in other countries, one can bring criminal action against the infringer. This can be done through complaints to the magistrate or police authorities by the owners or creators. This is followed by proceedings and carries much harsher remedies, including penalties, imprisonment, or both. In the patenting process, the inventor is given exclusive rights for his invention, and along with this, he should disclose all relevant documents or information in a particular format. These applications are published for any opposition; in this way, anyone can see the information available in the documents. These are followed by the steps. a. Filing of patent applications; this will be a priority application; b. Publication of applications; c. Opposition of patents; d. Examination of inventions by the experts; e. Clarification of objections raised; d. Grant of patents.

Apart from this, the Government of India implemented Indian IPR policy in 2016 with the aim of encouraging creativity and innovation and ensuring awareness of IPR in the public sector. This policy provides a comprehensive framework that seeks to streamline IP registration and enhance enforcement mechanisms with easy-to-access procedures for IPR in the country. It has laid out the road map for a strong IPR ecosystem with well-protected and

preserved intellectual property. The intention of IPR Policy 2016 is to replace obsolete rules with accurate ones. It is also modernizing with improvements in service-oriented IPR administration, education, management, and research. This has led to the enhancement of promotion and outreach, raising understanding of IPRs, which affects society and the culture of the nation. Moreover, with the help of government IPR policy in 2016, there have been tremendous changes in the administration and also in the judicial system for protecting IPRs that comply with TRIPS. This has been achieved by increasing the manpower to solve the problems related to IPR issues so that transparency and accuracy can be maintained. It will decrease the amount of time needed to process the blacklist of IPR applications. As a result of IPR policy, 2016 can be observed in the WIPO-issued Global Innovation Index (GII), where India's position is shifted from 81st in 2015 to 48th in 2020. This is reflected in the number of applications filed in the field of IPR, which is increasing annually. The major outcomes of the policy establishment of Centers for Technology and Innovation Support (TISCs) have been started in universities across various states, along with WIPO. Thus, IPR policy 2016 has its own merits in terms of promotion, solidification, registration, and strengthening the legal structure that is concerned with IPR by facilitating capacity to build up the human resources that help to rebust the IP of the nation. Even though the IPR policy of 2016 is favorable to the growth of the IPRs, it has not well addressed the traditional knowledge of the country. Along with these drawbacks of civil legal contests, it is unlikely to recover large damages, and punitive damages are rare. Another important setback of civil litigation is that if the infringer gets the injunction order, the case may be backlogged for many years, and then the real owner will suffer in the case of patent rights. But not in case copyright and trademark infringement damages are recovered early and imprisonment for six months with a minimum fine of Rs 50,000/-.

Role of Database in search of IP

Searching the IP all over the globe is a hectic phenomenon for the inventor and creator for the purpose of identification related to their or others IP. For this purpose, there are many databases that are available online, such as free databases such as lens.org and freepatentsonline.com. Google Patents, Global Dossier; Patent Authority Databases, namely patft.uspto.gov (official database of US patents and trademarks); epspacenaet.com (official database of European countries); wipo.int (database of WIPO); ipindiaservices.gov.in/public search (patent information of India). Along with this, there are specialized databases available online for paid services exclusively meant for prior-art searches. For these databases, the user must subscribe to access them, such as Questel Orbit, Patseer, Derwent Innovation, PatBase, and Relcura, which are well-known databases that are available for research purposes in the public sector. These sites cover more than 9 million patent documents from all over the world in collaboration with the WIPO. These databases are retrieval systems that store over 68 million DNA and protein sequence details. Some specific IPs are stored in databases such as freepatentsonline.com for chemical researchers; Google patent databases include 87 million patents with full text from the patent offices of over 17 different countries.

Infringement of IPR:

Infringement of intellectual property is the violation of exclusive rights in the form of making, manufacturing, using, selling, distributing, and exercising the invention by a person. In India, copying essential features, omitting non-essential elements, adding additional features or making the equivalent of an invention amounts to infringement (4). The act of being deceptively similar to another person's or company's registered trademark. It could be a similar symbol, logo, word, phrase, design, or combination of logo and word that may lead to infringement of a trademark or trade name.⁴ Every person who is directly and indirectly involved in or abets the act of infringement is also an infringer. Along with these infringements, there is an injunction and recovery damages or an account of profits available in the law against infringers, which provide relief to the creator and inventor. The infringer will be subject to a variety of offenses and penalties, depending on the type of intellectual property. According to the Indian Patent Act 1970, Section (118–124) deals with patent offenses and penalties: Ex: The fine may be extended to 2 lakhs and imprisonment of 2 years, depending on the type of gravity of the infringement. In cases of copyright infringement, minimum imprisonment is 6 months and a 50,000/- fine, and minimum imprisonment is 1 year and a fine of 1,00,000/- for a second and subsequent conviction. If an individual violates a trademark without permission from the registered owner as per Sections 103 to 121 of the Trademark Act, 1999, they will be jailed for at least 6 months, extendable to 3 years, or fine up to Rs 5,00,000/- or both. Similarly, penalties for the GI are also the same as trademarks. The GI will carry a penalty with imprisonment for a term that may not be less than six months to three years and a fine up to Rs 50,000/- and both. The infringement of any right under the Plant Varieties and Farmers Rights Act attracts punishment up to two years imprisonment and a fine of \$50,000 or both (23).

Today, with the present technology and high speed internet infringement of the IP has become common. IP owner is unaware about his / her IP rights are infringed in the cyber world. So, there will be a huge loss for the owner of IP.

For instance, if an individual is a best seller book author or copyright author with best unique novel has given his right to publisher only for hard format. Suppose if a publisher publishes soft copy in e-format for particular period for his self benefit without the consent of author who doesn't knew the cyberworld. In this way, the author will be unaware about novel e-contents and profit of the subscription will be deprived.

Self prevention is better before infringement:

There some of solution for making the harder to infringers before infringement of IPR:

1. When you employ the staff, place the effective IP-related clause in the employment agreement copy and educate employees regarding the Intellectual Property Act and its rules and regulations.
2. Ensure sound physical protection and destruction methods for the documents, drawings, machinery, samples, etc.
3. Ensure that production of products storms over to make sure that genuine products are not being sold under a different mark or name.
4. Look into the leakages of packages that might be used by the local infringers to pass off fake products.
5. Be careful about the design or trademark of the product when designing it, and anticipate how easy it would be for infringers to pirate it without seeing the original designs.

Avoiding the IPR problems:

1. The patentee or inventee should be able to defend his rights and obligations in regard to IP.
2. Aware of publications after filing on the IP rights.
3. Communicate and take advice from patent agents and experts regarding the rules and regulations of IP.
4. Be in touch with the dealers and distributors on how best to safeguard your IPR.
5. Scrutinize trademarks, patents, designs, and copyrights, or IP, whether they have been previously registered or not, and approach patent attorneys to check whether they are filed or not.
6. Speak to other businesses already performing similar kinds of business.
7. Take suggestions from an Indian IP expert at an initial stage on how to protect your IP—prevention is better than cure.
8. Adhere to familiar business methods; don't be fascinated by doing things differently and attractively without a proper channel when you are involved in export business.
9. Work out the risk assessment and review for any person or organization you deal with.

Status of IP applications in India:

According to the Controller General of Patents, Designs, and Trade Marks (CGPDTM) in India, there was a drastic increase in filings. Applications for IPR from the past 5 years in various IPRs are depicted in Table 2, where 2021–22 shows higher applications (568049) than compared to previous years. Overall increase of 7.5% compared to 2020–2021. This shows the impact of IPR policy in 2016 and the efforts made by the Government of India in the field of IPR. Interestingly, there was the very least number (01) filed of the IP applications made towards SCILD. The data in regard to SCILD suggests the country is lacking the resources and ideas about SCILD, which is a very important component in the network technologies of the country. Even though there are many well-known international standard NIIT, IIT, and software companies in India, But the country is lagging behind the SCILD. Careful scrutiny of Table 2 suggests that IP, such as GI registration, has doubled in 2023 compared to the previous year. This indicates the country has the capacity for the well-known GI and also manifests the richness of biodiversity and ecological factors (47, 48).

Applications	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Patent	47,854	50,659	56,267	58,503	66,440	279723
Designs	11,837	12,585	14,290	14,241	22,699	75643
Trademarks	27,2974	32,3798	33,4805	43,1213	44,7805	1810595
GI	38	32	42	58	116	286
Copyrights	17841	18250	21905	24451	30988	113435
SCILD	02	00	00	05	01	08
Total	350546	405324	427309	528471	568049	2279699

Table 2:- Number of IP applications filed for IPR from 2017-2022 in India: **GI-Geographical Indications; SCILD-Semiconductor Integrated Layout Designs.**(Sources:https://ipindia.gov.in/writereaddata/Portal/IPOAnnualReport/1_114_1_ANNUAL_REPORT_20223_English.pdf)

Table 3. Reveal the number of IPR granted from 2017–2022, where the total number of the registered is 168505 and the number given in parentheses is the application that was disposed of (25325446) for many more unknown reasons. Apart from this, Table 3 discloses that the IPR system in the country is proceeding on a fast track, which can be observed in disposing and representing the IPR in the stipulated time. This is may be due to the adoption of the IPR policy in 2016, which has made it easier for inventors and startup companies to come up with new ideas (48).

IPR/Year	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Patents	13045 (47695)	15283 (50884)	24936 (55945)	28385 (52755)	30073 (35990)	111722 (243289)
Designs	10020 (10788)	9483 (11414)	12256 (14701)	9147 (9281)	15262 (15655)	56168 (61839)
Trademarks	300913 (555777)	316798 (519185)	294172 (419566)	255976 (294944)	261408 (318878)	1429267 (2108350)
GI	25	23	22	05	50	125
Copyrights	19997 (39799)	14625 (25943)	16029 (16029)	16399 (16477)	20673 (20820)	87723 (119068)
SCILD	00	00	00	00	00	00
Total	344000 (654059)	356212 (607426)	347415 (506241)	309912 (373457)	327613 (391343)	1685005 (2532546)

Table 3:- Comparative Number of IPRs Granted/registered Number of application disposed is in parentheses: **GI-Geographical Indications; SCILD-Semiconductor Integrated Layout Designs.** (Sources: https://ipindia.gov.in/writereaddata/Portal/IPOAnnualReport/1_114_1_ANNUAL_REPORT_202223_English.pdf)

Future Prospectus of IPR

In the present situation, intellectual property rights (IPR) have become inevitable in this digitalized world. Fostering innovation is one of the sustainable development goals set by the government of India. An India where intellectual property stimulates creativity and innovation for the benefit of all, which is the actual vision of our national IPR policy in 2016. Along with this, India needs to enhance the enforcement and strengthen the IP-related resources, experts, and their agencies through improved coordination between agencies and fast-track legal procedures for IP litigation. Along with this, there shall be a simplification of the regulatory environment for IPR and a need to reduce administrative burdens with transparency in IP registration. The need for encouragement in the formation of collaborations between government, universities, and industries should be enforced by simplifying the procedures involved in them, so it leads to incentivizing and propelling research and development with proper funding agencies in the country. The nation needs more free database establishments that can be used for searching for granted patents for new inventors and students who are interested in innovative research.

The National Intellectual Property Conference 2023 held at Vigyan Bhawan, New Delhi, with the motto “Nurturing Growth of IP for Knowledge Economy,” was held in the presence of Daren Tang, WIPO, and the Director General of the Indian IPR ecosystem. The conference highlighted the remarkable 36% increase in IP filings in India, with patent registrations crossing the impressive 32,000 mark, with 52.8% of these patents being attributed to Indian nationals. This surge not only underscores India's prowess in innovation but also emphasizes the nation's commitment to addressing societal challenges through IP-driven solutions. He further noted an astonishing 80% growth in design registrations and significant advancements in copyrights. Notably, India now grants a staggering 3.75lakh trademarks annually, with a significant focus on supporting startups. Moreover, India has recently witnessed the highest number of Geographical Indications (GIs) being registered, with plans to double the count this year. Currently, with 475 registered GIs, the potential for over 15,000 GIs in India underscores the nation's rich cultural and regional diversity. Apart from this Mera Gaon Meri Dharohar project, every village has been granted a digital identity; with 60% of the 6.4 lakh villages mapped using this digital identity. This initiative highlights traditional knowledge (TK), traditional cultural expressions (TCE), folklore, and cultural identity, bridging the gap between rural and urban populations and preserving India's rich heritage. In 2017, India was in the 29th position among the 30 countries in the IP index around the world, according to the Chambers of Commerce U.S. At present, India stands 42nd among 55 countries on the International Intellectual Property (IP) Index 2023. This data shows there was a significant improvement in the ranking list (23).

Conclusion:-

The development of a nation depends upon the creativity of the citizens. This creativity comes from the mind set; it is referred to as intellectual property, and it should be preserved in the form of rights called IPR. The duty of the government is to protect it. The Intellectual Property Right (IPR) is provided by the government for intellectual activity in industrial, scientific, literary, and artistic works. It is applicable to companies, industries, businesses, and corporate sectors, which determine product stability and safety. These rights are given to ideas generated in the minds of people to safeguard creators and inventors over a period of time. These are exclusive rights granted by the government for the protection of genuineness and novelty of intellectual property for maintaining the quality, safety, efficacy, and standard of the product and process. IPR acts as identification marks for identifying the product. At the same time, the management of IP with IPR is a multidimensional task involving the determination of the Indian legal system. The selection process for granting the IPR was based on criteria (a) whether the invention is the first of its kind in the world; (b) the importance of the invention in the present world; and (c) what is the breakthrough solution. (d) step for commercialization; (e) the socio-economic significance; (f) how does it impact India; (g) which sustainable development goals does it address? Lastly, harmonize India's IP regime with international standards and make all facets of society aware of the social, economic, and cultural benefits of IPRs. By this way, IPRs will be demonstrated with immense creativity in the fields of startups, the corporate sector, academia, and leading R&D institutions in India to identify and address the essential needs of the present society.

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