ABSTRACT
Intellectual property (IP) refers to the creations of the human mind like inventions, literary and artistic works, and symbols, names, images and designs used in commerce. There are several compelling reasons for Intellectual Property Protection. First, the progress and well-being of humanity rests on its capacity for new creations in the areas of technology and culture. Second, the legal protection of these new creations encourages the expenditure of additional resources, which leads to further innovation. Third, the promotion and protection of intellectual property spurs economic growth, creates new jobs and industries, and enhances the quality and enjoyment of life. These rights safeguard creators and other producers of intellectual goods & services by granting them certain time-limited rights to control their use. IP protection is an important determinant of economic growth. It helps entrepreneurs to recover costs of their innovative expenses. There are several types of intellectual property protection like patent, copyright, trademark, etc. Patent is recognition for an invention, which satisfies the criteria of global novelty, non-obviousness, and industrial application. Pharmaceutical industry currently has an evolving IPR strategy requiring a better focus and approach in the coming era. The present paper discusses about IPR and its present global scenario comparing developing and developed nations specially relating the situation in India.

KEYWORDS: IPR, Patent, Copy right, Trademark.

INTRODUCTION
Intellectual property (IP) refers to the creations of the human mind like inventions, literary and artistic works, and symbols, names, images and designs used in commerce. Intellectual property is divided into two categories: Industrial property, which includes inventions (patents), trademarks, industrial designs and geographic indications of source; and Copyright,
which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs.

The most noticeable difference between intellectual property and other forms of property, however, is that intellectual property is intangible, that is, it cannot be defined or identified by its own physical parameters.[1]

NATURE OF IPR
IPR are largely territorial rights, except copyright, which is global in nature in the sense that it is immediately available in all the members of the Berne Convention. These rights are awarded by the State and are monopoly rights, implying that no one can use these rights without the consent of the right holder. It is important to know that these rights have to be renewed from time to time for keeping them in force, except in case of copyright and trade secrets. IPR have a fixed term, except trademark and geographical indications, which can have an indefinite life provided that these are renewed after a stipulated time specified in the law by paying official fees. Trade secrets also have an infinite life but they do not have to be renewed.[2]

The Convention establishing the World Intellectual Property Organization (1967) gives the following list of the subject matter protected by intellectual property rights

- literary, artistic and scientific works;
- performances of performing artists, phonograms, and broadcasts;
- inventions in all fields of human endeavour;
- scientific discoveries;
- industrial designs;
- trademarks, service marks, and commercial names and designations;
- protection against unfair competition; and
- “All other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields.”

Intellectual Property Rights are legal rights, which result from intellectual activity in industrial, scientific, literary & artistic fields. These rights safeguard creators and other producers of intellectual goods & services by granting them certain time-limited rights to control their use. Protected IP rights like other property can be a matter of trade, which can be owned, sold or bought. These are intangible and non-exhausted consumption.
BRIEF HISTORY OF IPR
The laws and administrative procedures relating to IPR have their roots in Europe. The trend of granting patents started in the fourteenth century. In comparison to other European countries, in some matters England was technologically advanced and used to attract artisans from elsewhere, on special terms. The first known copyrights appeared in Italy. Venice can be considered the cradle of IP system as most legal thinking in this area was done here; laws and systems were made here for the first time in the world, and other countries followed in due course.[3] Patent act in India is more than 150 years old. The inaugural one is the 1856 Act, which is based on the British patent system and it has provided the patent term of 14 years followed by numerous acts and amendments.[4]

IP System in India
Despite the fact that, in today's intellectual era, India has shown a considerable growth in its research and development and presence of well established state of the art labs of Indian as well as multinational companies in the country has clearly proved the Indian IP status in the world yet In India IP laws are at cradle stage as if an infant makes an attempt to peep from its cradle. In India a peasant may be aware of his rights related to land but a penman or an industrialist may not be aware of his rights related to intellectual property.[5] India being a developing nation, has taken giant leaps in competing towards Trade Related Intellectual Property Rights (TRIPS) agreement and in compliance of US and European Intellectual Property Right (IPR) structure.

Earlier when IPR was in its preliminary stage, lot of problems arose relating to its implementation, policies, Act/Rules, financial and governmental support. Earlier, companies and inventors were also not aware of IPR, therefore risk of infringement was at an alarming level without a healthy system, and companies were not interested to go for R&D process in India. This resulted in the death of inventions, high risk of infringement, economic loss and decline of an intellectual era in the country. Earlier, when Indian Patent system was not in compliance with TRIPS, there was a risk of a healthy Patent protection provision in India. But today the condition has totally changed. India is now a member of TRIPS agreement and our patent system is fully compliant with the TRIPS.[6]

TYPES/TOOLS OF IPRs[7]

a. Patents.
b. Trademarks.
c. Copyrights and related rights.
d. Geographical Indications.
e. Industrial Designs.
f. Trade Secrets.
g. Layout Design for Integrated Circuits.
h. Protection of New Plant Variety

Prior to the TRIPS Agreement, the main IPR conventions played the biggest role in the worldwide adoption of national IPR systems sharing common standards, while still allowing these systems to vary widely.\[8\]

**Patents: Protecting a Particular Implementation of an Idea**

A patent is an exclusive right granted by a country to the owner of an invention to make, use, manufacture and market the invention, provided the invention satisfies certain conditions stipulated in the law. Exclusivity of right implies that no one else can make, use, manufacture or market the invention without the consent of the patent holder. This right is available only for a limited period of time.

**The conditions of patentability are**

- Novelty
- Inventive step (non-obviousness) and
- Industrial applicability (utility)

Once a patent is granted, its holder can exclude others from making, selling, or using the patented invention or substantially similar inventions for up to a congressionally mandated 20 years after the patent application was initially filed. (A subset of patents called “design patents,” which protect an ornamental design of a product, provide patent protection for only 14 years.\[9\]

Subject matter which may be excluded from patentability includes the following. Examples of fields of technology which may be excluded from the scope of patentable subject matter includes the following

- discoveries of materials or substances already existing in nature;
- scientific theories or mathematical methods;
plants and animals other than microorganisms, and essentially biological processes for the production of plants and animals, other than non-biological and microbiological processes;

schemes, rules or methods, such as those for doing business, performing purely mental acts or playing games;

Methods of treatment for humans or animals, or diagnostic methods practiced on humans or animals (but not products for use in such methods).

The TRIPS Agreement (Article 27.2) further specifies that Members may exclude from patent protection certain kinds of inventions, for instance inventions the commercial exploitation of which would contravene public order or morality.\footnote{10}

Provisional and Non provisional Patent Application\footnote{11-12}

Provisional Application
A provisional patent application is not a patent, and furthermore, never becomes a patent, with the single rare exception noted below. It automatically expires after twelve months following the day of filing and cannot be revived.

It does provide a priority date for concurrent later-filed non-provisional applications for the content that is in the provisional. This means that references that could defeat the later-filed application as to the matter in the provisional (but which could not defeat the provisional filing date) will now not be utilized to defeat the later-filed application. Further, it does not subtract from the twenty year term of the later-filed application unless it is truly converted as discussed below.

A provisional patent application requires a full written specification and all the drawing figures, but does not require claims. It is never examined (unless truly converted) other than to ensure that the proper papers are present.

Lastly, a provisional patent application never sees the light of day and remains confidential, unless a non-provisional patent application (or a Patent Cooperation Treaty application -- to preserve foreign filing rights -- or a design application) takes priority to it.

Non Provisional Application: A non-provisional patent application, sometimes called a "regular" patent application or just a "patent application", is a "real" application for a patent.
It will be examined, and ultimately, through the examination process can mature into a patent. It’s "term" or life ends twenty years from the earliest priority date, which may be the date it is filed or the date that an application from which it takes priority benefit is filed.

A complete non-provisional patent application contains at least a specification, all the drawing figures and at least one claim. Claims are the invention. The specification and drawings must disclose what is in the claims, but they do not comprise the invention, only the claims do. Twenty claims are paid for with the filing fee, of which three may be independent claims. (Independent claims stand alone. The remaining are dependent claims which refer to another claim and thus cannot stand alone.).

There are various types of non-provisional patent applications, including the "parent" application and such "children" as divisional patent applications (occasionally the USPTO examiner requires restriction between more than one invention in the patent application; after proceeding with one selected invention, the other or others can be filed as divisionals), continuation patent applications (typically only a new set of claims to the original invention) and continuation-in-part patent applications (the original patent application plus some new matter added -- this is the only way to add new matter to a patent application).

**Difference between provisional and non provisional application**

**A provisional patent application**
- Is less costly than a non-provisional patent application.
- Will not be examined at the U.S. Patent & Trademark Office (USPTO).
- Does not confer the right to prevent others from making, selling, and using your invention.
- Buys one year of time; the provisional patent application must be converted to a non-provisional patent application within one year or you lose the early filing date and possibly all patent rights in the invention.

**A non-provisional patent application**
- Is much more costly than a provisional patent application.
- Will be examined by a patent examiner at the USPTO.
- If not precluded by prior art (that which has been done before) and if adequately explaining the invention, will mature into a patent that confers the right to prevent others from making, selling, and using your invention.
Situations in which filing a provisional application makes sense:

- when investment is needed to commercialize the invention;
- if you have already disclosed the invention to another party;
- a prior art search has not yet been conducted; and/or
- Additional technical development of the invention is desire.

**Pct and international patenting**

**International patenting**[13]

An international application filed under the PCT is usually filed with the patent office of the country in which the applicant is a resident or national. Therefore, a U.S. applicant can file his or her international application with the U.S. Patent and Trademark Office at the receiving office. Receiving office is the national office where the international application is filed then checked and processed. The original of the application is sent to the International Bureau of WIPO and a copy to the International Searching Authority who will conduct the international search. Many inventors take advantage of the PCT when filing foreign patent applications.

PCT abbreviated, from the Patent Cooperation Treaty. PCT is an International treaty, which provides facility to the applicant to file a single patent application and designate the countries in which he/she wants to protect his IP rights. Thus a single patent application is filed for the purpose of an international search report and to claim the priority date in all the designated countries. After receiving the international examination report, the applicant has to file a request in each designated country to take on record his/her application and this is called national phase of a patent application. A PCT application also provides an international filing date through a single patent application. India is a member country to PCT.

**Rights of patentee**[14]

1. A patent granted before the commencement of this act confers on the patentee the exclusive right to make use, exercise, sell or distribute the invention in India.
2. A patent granted after the commencement of this act confers upon the patentee:
   a. Where the patent is for an article or substance, the exclusive right to make, use, exercise, sell or distribute such article or substance in India.
   b. Where a patent is for a method or process of manufacturing an article or substance, the exclusive right to use or exercise the method or process in India.
Copyrights: Protecting the Expression of an Idea

Copyright law is a branch of that part of the law which deals with the rights of intellectual creators. Copyright law deals with particular forms of creativity, concerned primarily with mass communication. Copyrights protect a particular expression of an idea and are generally associated with a variety of creative works including books, music, movies, magazines, paintings, sculptures, and any other expressive work.

A copyright entitles the holder to exclude others from performing, publishing, or otherwise copying the work. It also entitles the holder to exclude others from producing “derivative works,” such as a movie adaptation of a book or its translation into a foreign language. Copyright protection generally lasts the life of the author plus 70 years.

Subject Matter of Copyright Protection

Literary works: novels, short stories, poems, dramatic works and any other writings, irrespective of their content (fiction or non-fiction), length, purpose (amusement, education, information, advertisement, propaganda, etc.), form (handwritten, typed, printed; book, pamphlet, single sheet, newspaper, magazine); whether published or unpublished; in most countries “oral works,” that is, works not reduced to writing, are also protected by the copyright law;

Musical works: whether serious or light; songs, choruses, operas, musicals, operettas; if for instructions, whether for one instrument (solos), a few instruments (sonatas, chamber music, etc.), or many (bands, orchestras);

Artistic works: whether two-dimensional (drawings, paintings, etchings, lithographs, etc.) or three-dimensional (sculptures, architectural works), irrespective of content (representational or abstract) and destination (“pure” art, for advertisement, etc.); maps and technical drawings;

Photographic works: irrespective of the subject matter (portraits, landscapes, current events, etc.) and the purpose for which they are made;
**Motion pictures (“cinematographic works”):** whether silent or with a soundtrack, and irrespective of their purpose (theatrical exhibition, television broadcasting, etc.), their genre (film dramas, documentaries, newsreels, etc.), length, method employed (filming “live,” cartoons, etc.), or technical process used (pictures on transparent film, videotapes, DVDs, etc.).

**Computer programs** (either as a literary work or independently).

Many copyright laws protect also “works of applied art” (artistic jewellery, lamps, wallpaper, furniture, etc.) and choreographic works. Some regard phonograph records, tapes and broadcasts also as works.

**Infringement of copyright**

Copyright gives the creator of the work the right to reproduce the work, make copies, translate, adapt, sell or give on hire and communicate the work to the public. Any of these activities done without the consent of the author or his assignee is considered infringement of the copyright. There is a provision of “fair use” in the law, which allows copyrighted work to be used for teaching and research and development. In other words, making one photocopy of a book for teaching students may not be considered an infringement, but making many photocopies for commercial purposes would be considered an infringement. There is one associated right with copyright, which is known as the “moral right,” which cannot be transferred and is not limited by the term. This right is enjoyed by the creator for avoiding obscene representation of his/her works. The following acts are considered infringement of copyrights:

a. In the case of literary, dramatic or musical work, not being a computer program
   (i) To reproduce the work in any material form, including storing it in any medium by electronic means.
   (ii) To issue copies of the work to the public not being copies already in circulation.
   (iii) To perform the work in public or communicate it to the public.
   (iv) To make any cinematography film or sound recording in respect of the work.
   (v) To make any translation of the work or to make any adaptation of the work.
   (vi) To do, in relation to a translation or an adaptation of the work, any of the acts specified in relation to the work in sub-clauses (i) to (vi).
b. In the case of computer program\textsuperscript{[17]}

(i) To do any acts specified in clauses (a).

(ii) To sell or give on hire or offer for sale or hire any copy of the computer program, regardless of whether such copy has been sold or given on hire on earlier occasions.

c. In the case of an artistic work

(i) To reproduce the work in any material form, including depiction in three dimensions of a two-dimensional work or in two dimensions of a three-dimensional work.

(ii) To communicate the work to the public.

(iii) To issue copies of the work to the public not being copies already in circulation.

(iv) To include the work in any cinematography film.

(v) To make any adaptation of the work.

(vi) To do, in relation to a translation or an adaptation of the work, any of the acts specified in relation to the work in sub-clauses (i) to (vi).

d. In the case of a cinematography film\textsuperscript{[18]}

(i) To make a copy of the film, including a photograph of any image forming a part thereof.

(ii) To sell or give on hire or offer for sale or hire any copy of the film, regardless of whether such copy has been sold or given on hire on earlier occasions.

(iii) To communicate the film to the public.

e. In the case of sound recording

(i) To make any other sound recording embodying it.

(ii) To sell or give on hire or offer for sale or hire any copy of the sound recording, regardless of whether such copy has been sold or given on hire on earlier occasions.

(iii) To communicate the sound recording to the public.

**Trademarks: Protecting the Symbol of an Idea, Product, or Service**

A trade mark (popularly known as brand name in layman’s language) is a visual symbol which may be a word to indicate the source of the goods, a signature, name, device, label, numerals, or combination of colours used, or services, or other articles of commerce to distinguish it from other similar goods or services originating from another. It is a distinctive sign which identifies certain goods or services as those produced or provided by a specific person or enterprise. Its origin dates back to ancient times, when craftsmen reproduced their signatures, or "marks" on their artistic or utilitarian products.\textsuperscript{[19]}
The salient features of the Trade Marks Act, 1999 inter-alia include[20]

a) Providing for registration of trade mark for services, in addition to goods.
b) Amplification of definition of trade mark to include registration of shape of goods, packaging and combination of colours.
c) All 42 international classification of goods and services (as earlier used) now applicable to India as well.
d) Recognition of the concept of "well-known trademarks".
e) Increasing the period of registration and renewal of trade marks from 7 to 10 years, to bring it in conformity with the accepted international practice.
f) Widening the scope of infringement of trade marks. For instance, use of a registered trade mark as trade name or as a part of a trade name or use of a mark which is identical or deceptively similar to a registered trade mark.
g) Creation of an "Intellectual property Appellate Board" for hearing appeals against orders and decisions of the Registrar of Trade Marks for speedy disposal of cases and rectification applications which hitherto lie before High Courts.
h) Criminal remedies in case of falsification of trade marks.
i) Recognition of use of trade mark by even an unregistered licensee.
j) Expeditious examination of a trade mark application on payment of five times the application fee.

Trade Secrets: Limited Protection for Knowledge Kept Secret: Trade secrets consist of any information possessed by a firm that the firm takes reasonable measures to keep secret, is legitimately kept secret, and has commercial value because it is secret. This information may include information that could be protected as other forms of intellectual property but also includes knowledge that cannot be so protected, including customer lists, contracts, and other information whose value is diminished if it becomes publicly available.

Trade secrets are not formally protected in the way other intellectual property is protected. Protection is provided under state, rather than Federal, law. For example, protection occurs through the enforcement of the firm’s confidentiality provisions in contracts and the use of the legal system to block those who have improperly or illegally obtained a firm’s trade secrets from using or disclosing them. In general, however, a firm has no legal recourse to prevent others from using its trade secrets if they become publicly available. Trade-secret protection lasts only as long as the firm can maintain secrecy. One of the most successful trade secrets in this regard is the formula for Coca-Cola.
Although the definition of trade secret is variable as per the jurisdiction, there are the following elements that are found to be the same

- Is not known by the public.
- Provides some financial sort of gain to its holder.
- Involves reasonable efforts from the holder side for maintaining secrecy.
- Importance of data or information to him or for his rivals.
- The ease by which information could be learnt or duplicated by others.

ECONOMIC IMPORTANCE OF IPR

The protection of intellectual property rights plays an important role in inducing technological change and facilitating economic growth. Intellectual property protection does not directly lead to growth, but it helps create an incentive structure that encourages research and development, which in turn leads to increased innovation. Increased innovation generates greater rates of economic growth.\(^{[21]}\)

The link between improved intellectual property protection and increased innovation can be seen at the firm level for companies in developing and developed countries. A number of other recent economic studies have shown a more direct link between greater intellectual property protection and capital investment. One study of the relationship between patent protection and investment in research and development found that countries with the lowest level of patent protection invested less than one-third of 1 percent of their GNP in research and development while countries with the highest level of protection invested six times as much. Likewise, another study suggests that increasing intellectual property protection increases capital and research investment.\(^{[22]}\) As intellectual property protection makes investment in research and development more attractive, the supply of knowledge is increased, lowering the cost of innovation. The increase in innovation leads to an increase in the rate at which new products are introduced, resulting in greater economic growth. Intellectual property protection alone does not drive economic growth. There must be an existing research base in the country, a relatively unconstrained trade regime, a stable macroeconomic environment, the rule of law and well-functioning institutions that grant, monitor, and enforce the intellectual property rights.\(^{[23]}\)

The role of Intellectual Property Rights in Economic Activity\(^{[24]}\)

IP protection is an important determinant of economic growth. It helps entrepreneurs to recover costs of their innovative expenses.
The significance of intellectual property rights in economic activity differs across countries and depends on
1. The amount of resources countries devote to creating intellectual assets as well as
2. The amount of protected knowledge and information used in production and consumption.

ROLE OF IP IN PHARMACEUTICAL INDUSTRY
More than any other technological area, drugs and pharmaceuticals match the description of globalization and need to have a strong IP system most closely. Knowing that the cost of introducing a new drug into the market may cost a company anywhere between $300 million to $1000 million along with all the associated risks at the developmental stage, no company will like to risk its IP becoming a public property without adequate returns. Creating, obtaining, protecting, and managing IP must become a corporate activity in the same manner as the raising of resources and funds. The knowledge revolution, which we are sure to witness, will demand a special pedestal for IP and treatment in the overall decision-making process.[25]

The strict system of protection of intellectual property may have a different impact on different groups (e.g., consumers and manufacturers) even within a single sector of the national economy. For example, a pharmaceutical company that invests significant resources in R&D would be a potential advocate for the introduction of strict protection of industrial property rights in order to protect their inventions in which incorporated much like the material and the intellectual aspects.

IPRs are generally understood to have two principal areas of impact in pharmaceuticals. First, there is the issue of pricing and access, where discussion focuses on the links between IPRs (particularly patent rights), exclusion of competitors and the availability and pricing of new medicines. Second, there is the issue of R&D incentives – that is to say, the role of IPRs in providing incentives to discover, develop and market new drugs – and the effect of IPRs on R&D expenditure and its allocation across diseases, countries and organizations. Obviously, these two issues are closely linked, and their interplay presents a series of very difficult economic issues and policy questions.

ETHICAL ISSUES OF IP IN PHARMA INDUSTRIES
The current state of the pharmaceutical industry indicates that IPR are being unjustifiably strengthened and abused at the expense of competition and consumer welfare. The lack of
risk and innovation on the part of the drug industry underscores the inequity that is occurring at the expense of public good. It is an unfairness that cannot be cured by legislative reform alone. While congressional efforts to close loopholes in current statutes, along with new legislation to curtail additionally unfavourable business practices of the pharmaceutical industry, may provide some mitigation, antitrust law must appropriately step in.\[26\] While antitrust laws have appropriately scrutinized certain business practices employed by the pharmaceutical industry, such as mergers and acquisitions and agreements not to compete, there are several other practices that need to be addressed. The grant of patents on minor elements of an old drug, reformulations of old drugs to secure new patents, and the use of advertising and brand name development to increase the barriers for generic market entrants are all areas in which antitrust law can help stabilize the balance between rewarding innovation and preserving competition.\[27\]

CONCLUSION

Intellectual Property is valuable than all other tangible assets and in today’s scenario it has become far more important to protect Intellectual Property over them by providing IP Rights to the owner of the Intellectual work. This on one hand supports the economic development of the individual along with whole nation and on other encourages further more inventions and innovations. The inert talent possessed with a common man is infinity and it’s just needs an exposure to express. IP Rights promise to give that exposure.

This concept has already been understood by developing nations of the world but is still just on it’s starting stage in developing nations like India. Attempts are being made to change this prospect and in near future the scenario will certainly change with the effective steps in this regard.

REFERENCES


