

**Intellectual Property Information on Industrial
Development & Knowledge Creation in India**

DISSERTATION

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LIST OF ABBREVIATION

<i>Abbreviation's.</i>	<i>Full Forms</i>
IP	Intellectual Property
GATT	General Agreement on Tariffs and Trade
TRIPS	Trade-Related Aspects of Intellectual Property Rights
GI	Geographic Indications
TKDL	Traditional Knowledge Digital Library
BNEF	Brand Names Education Foundation
IPR	Intellectual Property Rights
WIPO	World Intellectual Property Organisation
EPO	European Patent Office
EAPO	Eurasian Patent Organisation
ARIPO	African Regional Intellectual Property Organisation
OAPI	African Intellectual Property Organisation
GCCPU	Gulf Cooperation Council Patent Office
TK	Traditional Knowledge
GM	Genetically Modified
ITO	International Trade Organisation
WTO	World Trade Organisation
IMF	International Monetary Fund
PIS	Patent Information System
NIPM	National Institute for Intellectual Property Management
IPC	International Patent Classification
LIS	Library & Information Science
DIPP	Department of Industry Policy and Promotion
DBT	Department of Bio-technology
BIRAC	Biotechnology Industry Research Assistance Council
BPEC	Biotechnology Patent Facilitation Cell
MSME	Ministry of Micro, Small & Medium Enterprises
PHARMEXCIL	Pharmaceuticals Export Promotion Council
NRDC	The National Research Development Organisation
TIFAC	Technology Information, Forecasting & Assessment Council
CII	Confederation of Indian Industry
FICCI	Federation of Indian Chambers of Commerce and Industry
IDMA	Indian Drug Manufacturers
OPPI	Organisation of Pharmaceutical Producers of India
FITT	Foundation for Innovation and Technology Transfer
IIPA	International Intellectual Alliance
CEAC	Copyright Enforcement Advisory Council
SCRIPT	Society for Copyright Regulation of Indian Producers for Film and Television
IPRS	The Indian Performing Right Society Limited
PPL	Phonographic Performance Limited
IRRO	Indian Reprographic Rights Organization
CSIR	Council of Scientific and Industrial Research

CHAPTER 1

INTELLECTUAL PROPERTY

Introduction: Intellectual Property (IP) refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images and designs used in commerce. Intellectual properties are broadly categorised as industrial property and copyright and related rights. The industrial property includes inventions or patents, industrial designs, trademarks and geographical indications. Copyright covers literary and artistic works, and copyright-related rights include rights of performers, producers of phonograms and broadcasters. In addition, the domain of IP has also expanded to cover areas like traditional knowledge, life sciences (including bio-diversity, genetic resources, micro-organisms and plant varieties), farmer's rights, human rights and undisclosed information like trade secret.

Because of its enormous influence and importance, Intellectual Property has been an intriguing subject matter of numerous studies from various disciplines. Researches have been done throughout the world on various forms of Intellectual Properties from technological, economical, legal, political, cultural, social and ethical angles. In my research work, I have tried to cover all sorts of intellectual properties and their importance in the Indian context from information science point of view unlike the usual emphasis on legal aspects. A combination of methodologies were adopted for the present study like interview, personal contact, observation in seminars and conferences, personal visit to various IP offices and IP training. The data sources included online searches of Indian and foreign IP offices, sites of various Indian government offices involved in IP activities, sites of Indian academic institutions like UGC, IITs, etc., sites of industry associations like CII, FICCI, etc., sites of international information

vendors like ProQuest, Google Scholar, and sites of Indian newspapers like The Times of India and The Economic Times.

Since India's signing the GATT (General Agreement on Tariffs and Trade) treaty and accommodating the TRIPS (Trade-Related Aspects of Intellectual Property Rights) obligations, IP has been a highly discussed issue among academicians, researchers, economists, industrialists, lawyers, and politicians. The present work studies the role and importance of IP information in knowledge generation and industrial development in India. Relevant information was collected through personal contact and interview, observation and group discussions in conferences, and extensive on-line searches of IP databases and from websites of national and international IP offices, R&D organisations, industry associations, newspapers and information vendors.

IP is meant for commercial exploitation by its owner for economic gain. It can be sold or licensed, and used to prevent others from unauthorised exploitation. IP information is primarily available with the IP offices of a country that publish it in official gazettes, journals, annual reports and databases.

IP information serves as both an input and output in knowledge activities. As a basic input in R&D, it is used as a starting point for decision making regarding topic selection, and subsequent modifications as required. It helps avoid duplication in R&D and thereby wastage of resources, and aids in the development of new technology or IP. This in turn makes new technology available to the industry and leads to improvement of existing technology. The resulting industrial growth leads to economic development through more revenue generation for the government, industry and the public besides creating more employment. However, economic development is severely hampered in case of IP infringement through piracy and unfair trade practices.

IP deficiency has major implications for a country. It leads to dependency on other countries for latest quality products, surge in expenditure in import bills, and denial or non-availability of cutting-edge technologies related to space, nuclear energy, defence, etc. A weak IP regime is a disincentive for foreign investment and technology inflow as the IP holder fears non-protection and infringement of IP rights. Besides, the country loses its clout in the international and bilateral relationships and commercial agreements.

The IP regime in India developed through legislative route by amendment of patent, copyright, trademark and designs act and introduction of new legislations for GI, semiconductor layout, and farmers' rights; through development of infrastructure like modernisation of existing IP offices, setting-up of new IP offices, IP training and IP information services; and also through signing of various international treaties.

Various government reports like those of the Committee on Technology Innovation and Venture Capital, Planning Commission; the National Knowledge Commission (NKC); and the Steering Committee on Science and Technology for Eleventh five year Plan (2007-2012) have emphasised on academy-industry cooperation for knowledge management and IPR portfolio building, and enhanced allocations for development of strong legal framework and IPR information flow. The University Grants Commission (UGC) has set up a framework for financing registration of IPRs that come out of various university departments in the country. The Mashelkar Committee Report suggested expansion of patentability criteria to micro-organisms and incremental inventions in pharmaceutical products in full compliance with TRIPS obligations.

The IITS with assistant from DST have formulated specific IP policies and set up enterprise incubation units for knowledge transfer to the industry. The University Grants Commission has set up a framework for financing registration of IPRs that come out of various

universities. The scientific departments of the Government of India have included IP creation as an important parameter for consideration of promotion.

The Department of Electronics and Information Technology (DeitY) provides financial support to academia/institutions like IISc, IITs, NIITs, IIITs and state government technical institutes, industry bodies like MAIT, ELCINA, CII, NASSCOM, FICCI, ISA, ASSOCHAM etc. and DeitY/ DeitY Societies or Autonomous bodies for IP Awareness Programme in Electronics and IT sector for working executives and IPR professionals with provision for international workshops with international experts. In exchange of grant, The DeitY gets the ownership of Intellectual Property and the rights associated with it those results from the project. The grantee institution has to consult DeitY regarding IPR protection issues to file patents, register copyrights, etc. before making it public by publishing in the technical journals and books, presenting findings in conferences etc. In case of joint sponsorship, the IP rights are appropriately shared among the sponsoring organizations.

The Ministry of Micro, Small and Medium Enterprises (MSME) has taken various IPR initiatives to help MSMEs identify, protect and manage IPR as a business tool.

As a result of these steps, the number of patents, trademarks and designs registered and granted have increased substantially expanding the knowledge base. The no. of patents in force has increased 4-fold in two decades from 10031 in 1992 to 39594 in 2010-2011. During the same period, the no. designs registered are 747 and 9206 and trademarks registered are 5364 and 115472 respectively, indicating the maximum increase in case of trademarks. This also signifies the ever increasing business firms and products appearing in the market. The development of Traditional Knowledge Digital Library (TKDL) is a remarkable achievement in Indian context. So far, over 2.3 lakh medicinal formulations have been transcribed from 150 books on

Ayurveda, Unani, Siddha and Yoga. It has successfully preserved the Indian traditional knowledge and presented patenting of Indian traditional medicine.

In the face of stiff competition due to opening up of the Indian economy and TRIPS obligations, Indian industries have realigned their IP strategy for survival and growth. Both the government and the private sector have taken a slew of initiatives to enable the Indian industry successfully compete in the innovation-based global economy. The Department of Industrial Policy and Promotion (DIPP) has been instrumental in formulating IP policies by inviting suggestions from experts and consultations with industries to balance the TRIPS obligations with India's industrial requirement. The Ministry of Micro, Small and Medium Enterprises (MSME) has taken various IPR initiatives to help MSMEs identify, protect and manage IPRs as a business tool. These include setting up of IP facilitation centres for IP awareness campaign, and financial assistance on grant of domestic and foreign patents, for filing international patents, for registering geographical indications and for establishing business incubators in technology institutions. Government organisations like NRDC and TIFAC have been active in spreading patent awareness and IP consultancy including patent information services and helping inventors in patent filing, technology transfer and IP management.

Industry associations like CII and FICCI have been proactive in creating an IP ecosystem in India and raising industrial competitiveness through IP management. The IPR activities include awareness campaign, capacity building, IPR services, protection against infringement like piracy and counterfeiting and IP enforcement, besides networking at national and international level and participating in IP policy formulation. CII in association with the government has set up technology development centres in Andhra Pradesh and Tamil Nadu and IP facilitation centre in Madhya Pradesh. IIT Delhi has established FIIT for transfer of technologies developed by it to the industry.

The Indian pharmaceutical industry has been the frontrunner in meeting the IPR challenges post-TRIPS alignment. Efforts by pharmaceutical associations like PHARMEXCIL, IDMA, OPPI and others, and measures like patent awareness campaigns, focus on R&D and exploiting global markets for generic drugs and have led to the spectacular growth of the industry and increase in patenting activities in India. To boost academy-industry interaction, the generic drug industry in India stands to gain tremendously once several global blockbuster drugs go off-patent in the coming years.

Drugs worth \$60 billion will expire during 2012-2015 with about \$30 billion in 2012 alone. Indian companies like Ranbaxy, Dr. Reddy's, Sun Pharma, Torrent, Aurobindo and others are eyeing on this multi-billion opportunity and have enhanced necessary R&D infrastructure to cash in.

Amidst all emphasis on profit-making through patented inventions, the humanitarian face surfaced sensationally when the Indian Patent Office granted a Compulsory License (CL) to the Indian drug manufacturer Natco to produce sorafenib, the generic version of Nexavar, used for the treatment of liver and kidney cancer, which is patented in India by Bayer, a multinational drug company. The CL is meant to bring the cancer drug within an affordable price for Indian patients, most of whom otherwise could not have accessed the highly priced patented version. The CL requires Natco to charge INR 8900 (\$180) for a month's dose as against the price of Bayer's patented version at INR 2,84,428 a month, donate free supplies to 600 needy patients each year and pay 6% royalty quarterly to Bayer on sales.

Copyright infringement is rampant in India causing huge loss to the creative industries. About 64% software and 23% music used in India in 2010 were unlicensed. To counter this menace of copyright piracy, the government has established Copyright Enforcement Advisory Council, special cells at the state levels and Copyright Board. Societies like SCRIPT, IPRS,

PPL and IRRO are engaged in collective management of copyright related to cinematograph and films, musical works, sound recording and reprographic works respectively.

Like patents, copyright may also yield a rich dividend upon expiry. The publishers and others who will exploit the works commercially gain tremendously by saving on royalty that would otherwise have gone to the right holders. The Public also benefit by easy access to copyrighted materials at a price cheaper than the earlier one due to competition among publishers.

Cultural industries have become one of the fastest growing economies in the industrialized nations like USA and Japan. Walt Disney, the US-based largest entertainment company earned revenue of \$10.7 billion with a profit of \$1.3 billion. Cultural industries with huge potential in the Indian context are slowly coming up with individual efforts.

Transforming cultural traditions into marketable commodities can lead to social and economic uplift. Successful Indian examples include Shyam Ahuja's designer durries and Ritu Kumar's designer kantha-spread made from ready-to-junk bed coverings. Jodhpur in Rajasthan has taken a lead in the development of cultural industries and every month exports about 2000 containers of cultural products that include antique doors and windows for modern décor, art objects of brass, iron, silver, and glass, marble, papier Mache, handloom, tapestries and jewellery. The respect of IP and its proper use can fetch original musicians, singers, and performers, hitherto unknown neglected, their due share of name, fame and money. Not only this, the cultural heritage is preserved from extinction due to threat from spreading urbanization, and recorded for posterity.

Corporate espionage and cyber stealing of data related to R&D, product development, source code, plan documents, etc. are becoming a serious business concern. The 2009 India Economic Crime Survey by PriceWaterhouse Coopers (PwC), a leading global consultancy

firm, reported IP frauds as 4% of the total reported economic frauds in the corporate sector during the last 12 months, although the corporate perception of IP infringement in the next 12 months was to the tune of 9% of the total incidents. This shows the alarming growth in the IP fraud expected by the corporate sector. Magus Marketing Private Limited, a Kolkata-based supplier of magnesia carbon brick, suffered an annual loss of about Rs.15 crores due to loss of business due to theft of client data by one of its employees and selling it to a rival company.

As proof of the prior art, the Traditional Knowledge Digital Library (TKDL) has successfully opposed patent applications based on Indian systems of medicine by western companies and also led to the withdrawal of granted patents. The TKDL effort against bio-piracy successfully got the patents on traditional medicines like neem, haldi, etc. granted in the USA and Europe cancelled.

Reputed trademarks have found a new use in India as collateral. New Delhi-based LT Foods (earlier called LT Overseas) used its Daawat brand of packaged rice as collateral to raise debt for its \$50 million (Rs 200 crore) acquisition of US-based rice firm Kusha Inc. Walt Disney used its brand value in 1988 in the Japanese market to raise as much as \$725 million. Kingfisher Airlines, registered as a brand with the trademark office, raised USD420 million from brand value in 2009 which was pegged at USD 750 million (Rs.3, 406 crores). In a dramatic turn, now beleaguered financially and over-burdened with debts and losses, its lenders have asked it to reassess the value of its brand given as collateral as against some loans in 2010. The Brand Names Education Foundation (BNEF), USA, estimates that brand counterfeiting is a \$60 billion industry worldwide, costing legitimate manufacturer 130,000 jobs annually.

Awareness about Geographic Indications (GI) is still very low in India and there are rampant violations of this IP daily everywhere. In the absence of an effective regulatory mechanism, both producers and consumers of GI products suffer in terms of quality and

satisfaction quotient. Famous sweets like Jaynagar's Moa and agricultural items like Darjeeling tea are victims of GI infringement. The Darjeeling tea, the most famous and the first product to get the Indian GI tag, has an annual production of around 10,000 tonnes. Yet in the global market, more than 40,000 tonnes of tea are sold as Darjeeling tea.⁵² This spurious tea damages the reputation of Darjeeling tea, deceives the consumer and causes pecuniary loss to the original Darjeeling tea growers.

Intellectual property is the currency of the new age. To be IP rich, IP education supported by an enabling innovation ecosystem is of paramount importance. At present mainly at the post graduate level, such as in legal courses, IP is taught as a subject. But as IP is increasingly recognised as influencing our everyday life and activities, along with the penetration of internet in our life, we have become more exposed to the use and misuse of IP. This necessitates starting IP education at the school level itself and making IP a compulsory subject in the line of environmental studies at subsequent levels of education. For economic development, the full potential of Indian IP resources needs to be tapped through more IP creation and necessary legal protection and enforcement mechanism.

Moreover, Intellectual Property (IP) is the outcome of creativity and innovation of human mind, the commercial application of which adds tremendously to the enrichment and progress of individual, society and mankind as a whole. Intellectual Property Rights (IPRs) are given to creators of intellectual properties for gainful exploitation of their creations. These rights are protected by relevant laws of individual countries that confer on its holders a monopolistic right to exclusive use for a certain period and debar others from utilising it without proper permission during that period. There are treaties at both regional and international levels that govern the utilisation of IP among the contracting states. The IP actually is in the information or knowledge incorporated or reflected in the creations. This information is considered as an indispensable tool for research and development, a contributor to enterprise value and a strategic asset in international relations.

1.1. Purpose of the Study

The present work aims to

- study the development of Intellectual Property regime in India,
- determine the role of IP information in research and development and new knowledge generation and ascertain its importance in this process with reference to India, and
- find out how the utilisation of IP information is influencing the industrial development in India in the context of an increasingly integrated world economic order

1.2 The Concept of Intellectual Property

Since India's accession to the GATT agreement in 1995, we have been increasingly hearing about Intellectual Properties in newspapers, journals, discussions and political parlours. It has often been a highly debatable issue among academicians, intellectuals, economists and politicians. Arguments for and against it have, consequently, left the general public confused about its nature, scope and importance for the public in general, and for the country as a whole. For a clear picture to emerge, it is imperative first to understand the concept of Intellectual Property.

We all are familiar with tangible properties like land, house, money, jewellery and other goods. But intellectual property (IP) is different in that it is a creation of human intellect. "Intellectual property (IP) refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce."

1.3. Types of Intellectual Properties

Intellectual properties are divided into two broad categories, viz. industrial property and copyright and related rights. Industrial property includes inventions or patents, industrial designs, trademarks and geographical indications. Copyright includes literary and artistic works, and copyright-related rights include rights of performers, producers of phonograms and broadcasters. The domain of IP has also expanded to cover other areas like undisclosed information (e.g. trade secret), traditional knowledge, life sciences (including biodiversity, genetic resources, microorganisms and plant varieties), and human rights, thereby making the IP spectrum broader and more complex. Individual intellectual properties have been discussed here to understand their nature and scope of operation.

1.3.1. Patent

Patents are one of the most discussed and debated intellectual properties we hear or read about. Basically a patent is an *invention*, capable of industrial application. According to the World Intellectual Property Organisation (WIPO), “a patent is an exclusive right granted for an **invention**, which is a **product** or a **process** that provides, in general, a new way of doing something, or offers a new technical solution to a problem.”

In order to be patentable, the invention must pass the tests of **novelty**, **practical use**, **inventive step** and **legal acceptance**. Novelty refers to the new characteristic or knowledge not already available in the existing body of knowledge or “**prior art**”. Practical use implies that the invention must be capable of being used to offer some practical technological solution to an existing problem. The inventive step criterion requires that the step could not be deduced by a person with average knowledge in that technical field. Finally, the invention must conform to the law of the country, i.e. it should be legally acceptable. For example,

scientific theories, mathematical methods or formulae, plant or animal varieties, discoveries of natural substances, commercial or business methods, or methods for medical treatment like surgery techniques are not allowed for patent grants under patent laws of many countries.

A patent is an exclusive right for the use of an invention, granted by the national patent office to the applicant for a definite period, usually 20 years. The applicant could be an inventor or more than one inventors, an organisation that employs the inventor or inventors, or a body that has obtained the permission from the inventor for this purpose. Thus, a patent is a legal monopoly for a fixed period after which the patent expires and the patented technology or knowledge becomes available in the public domain. However, during the period when the patent is active or in vogue, no one can utilise the patented invention without the permission from the patentee or the patent right holder. The infringer is liable to be sued for civil and/or criminal remedies that may result into monetary compensation to the patentee, confiscation of goods, closure of infringer's business and/or imprisonment of the infringer depending upon the severity of the infringement and legal provision.

The exclusive right of a patent allows the patentee to license or sell it for commercial gain, and to prevent others from unauthorised exploitation of his patented technology. It is also a negative right in the sense that the patentee can simply withhold or block the technology from being used by not using himself or allowing others to use it. Interestingly, the patent right is not absolute. Upon successful challenge by a complainant in a suitable court, the patent can be terminated legally. In case of emergency situations warranting availability of patented products at a cheaper rate than that offered by the patentee or the manufacturer company, the government can at its discretion revoke this exclusive right of use and permit other manufacturer to produce the patented product without permission from the patentee or licensee.

To obtain a patent, the applicant has to apply to the national patent office in the prescribed application form along with the necessary application fees. The patent office examines the application and if it passes all the four essentiality tests mentioned before, it grants the patent to the applicant and publishes it. As the patent office is basically of national character, its jurisdiction runs within the particular country only, thereby the patent right becomes enforceable only in the country of the granting patent office. However, the patent may have a good market or scope for business potential in other countries also. In that case, the patentee has to apply in other countries. As there is no single global or international patent, as of now, the patentee has to apply separately in all countries of choice. These multiple applications naturally increase the application cost as well as processing time. To overcome this problem to some extent, some umbrella patent offices have been established with multiple contracting states becoming members of a single patent office as shown in Table 1. The advantage is that one can apply for a patent in all or desired member states through a single application to these patent offices, which serves as a very convenient method to reduce the cost and processing time. Once granted, the patent becomes enforceable in all the desired contracting states.

To maintain or continue a patent, the patentee must keep it in force by paying the annual or periodical maintenance fees to the granting patent office, failing which the patent is suspended for a specific period or cancelled altogether.

In addition to conventional patents or inventions, minor innovations or improvements of existing technology are also considered for protection and these are termed as utility models or petty patents or innovations patents. Primarily given for mechanical innovations, these are particularly suited for small and medium enterprises (SMEs). Unlike a patent, a utility model is protected for 7 to 10 years.

Table 1. International/Regional Patent Office

No.	Organization	No. of Contracting States	Headquarters	URL
1.	World Intellectual Property Organization (WIPO)	184	Geneva, Switzerland	www.wipo.int
2.	European Patent Office (EPO)	38	Vienna, Austria	www.epo.org
3.	Eurasian Patent Organization (EAPO)	10	Moscow, Russia	www.eapo.org
4.	African Regional Intellectual Property Organization (ARIPO)	17	Harare, Zimbabwe	www.aripo.org
5.	African Intellectual Property Organization (OAPI)	16	Yaounde, Cameroon	www.oapi.int
6.	Gulf Co-operation Council Patent Office (GCCPO)	6	Riyadh, Saudi Arabia	www.gccpo.org

1.3.2. Trademark

“A trademark is a distinctive sign which identifies certain goods or services as those produced or provided by a specific person or enterprise” and distinguishes it from similar other products or services offered by other persons or enterprises in the market. Trademarks may consist of alphanumeric characters viz. one or a combination of letters, words and numerals, two-dimensional images like drawings, symbols, three-dimensional features like shapes and packaging of goods, visual feature like colours, audible signs like music or vocal sounds and abstract feature like fragrances (Table 2).

There are also other types of marks like collective marks and certification marks.


“**Collective marks** are owned by an association whose members use them to identify themselves with a level of quality and other requirements set by the association. Examples of such associations would be those representing accountants, engineers, or architects.”⁴ On the other hand, **certification marks** are not owned by any persons or enterprises. These marks refer to certain standards for products or services. One can receive them by conforming to that specific standard. One of the best known examples is ISO 9000 standard which is an internationally known standard for quality. Another such well-known mark is **Hallmark** which is used extensively in case of gold and silver jewellery to indicate and guarantee its amount of purity in percentage.

Trademarks are registered in the national trademark registry for a single country or in the WIPO administered Madrid system for multiple countries. One distinguishing feature of the trademark right is that even after the protection period is over, it can again be renewed for indefinite times and that way it never expires so long as the mark owner enterprise is in business and uses it.

The trademark helps the owner establish a distinctive identity for his product in the market, build and ensure his reputation in the market, exclude others to use that mark without

permission, prevent counterfeiters to fraudulently use the mark to deceive the consumer, and also claim financial damages in case of infringement. The consumer benefits by the knowledge of the nature and quality of the product associated with the mark. A trademark is indicated by the sign TM and ® denoting it as registered.

Table 2. Types of Trademark

No.	Type of Trademark	Examples
1.	Alpha-numeric signs <ul style="list-style-type: none"> • Letters 	IBM (acronym for International Business Machine, an IT company of US origin)
2.	<ul style="list-style-type: none"> • Words 	Microsoft Windows
3.	<ul style="list-style-type: none"> • Numerals 	502 Pataka Biri (a tobacco product manufactured in West Bengal, India), 3M
4.	Visual feature <ul style="list-style-type: none"> • Colour 	 Red Cross
5.	Audible signs	Lion roar associated with MGM movies

1.3.3. Industrial Design

“An industrial design is the ornamental or aesthetic aspect of an article. The design may consist of three-dimensional features, such as the shape or surface of an article, or of two-dimensional features, such as patterns, lines or colour.”

Industrial designs, also known simply as designs, make an article attractive and aesthetically appealing, thereby increasing its marketing potential. It, however, does not protect the technical feature of the article.

Industrial designs are applied to a wide variety of articles including industrial products, handicrafts, scientific and medical instruments, watches, jewellery, house wares, electrical appliances, vehicles, architectural structures, textile designs and so on.

1.3.4. Geographical Indication

As the term implies, **Geographical Indication (GI)** refers to the geographical relationship of a good. As per the WIPO definition, “a geographical indication is a sign used on goods that have a specific geographical origin and possess qualities, reputation or characteristics that are essentially attributable to that place of origin. Most commonly, a geographical indication includes the name of the place of origin of the goods.”

A geographical indication may be used for a natural, agricultural (e.g. Darjeeling Tea) or man-made product (Burdwan’s Mihidana, a particular type of very popular sweet prepared in the district town of Burdwan, in the state of West Bengal, India). The distinguishing features of a geographical indication may be natural factors like climate and soil, or human factors like specific skill and tradition or a particular way or style of manufacturing a product.

Geographical indications representing particular qualities of goods are protected by national and international laws. The period of protection is 10 years and after that it may be renewed from time to time for further 10 years every time. They are valuable as the customers purchase such goods because of their intrinsic qualities. Unless protected, unscrupulous businessmen may misuse and misrepresent them by selling fake or inferior quality goods, thereby hampering their reputation in the market and causing monetary losses to the proprietors of geographical indications.

A geographical indication differs from a trade mark in that the former is the name of a geographical location whereas the latter is a sign created by the enterprise to distinguish its goods or services from similar other goods or services in the market. The trademark is a right

to exclude others to use that mark, whereas the geographical indication may be used by all enterprises belonging to the particular location and producing products with similar qualities associated with the geographical indication. Besides, unlike a trademark, a geographical indication being a public property *cannot* be transferred through sale, licensing, assignment or mortgage or like other methods.

1.3.5. Copyright

Copyright is perhaps the most familiar intellectual property among academics **including** students, researchers and teachers. The general perception is that it is a right that allows an author to permit others to copy his or her literary work. In reality, the domain of copyright is much larger as we shall see here in the following discussions.

“Copyright is a legal term describing rights given to creators for their literary and artistic works.” Literally and Artistic works include “every production in the literary, scientific and artistic domain, whatever may be the mode of expression, such as

- books, pamphlets and other writings
- lectures, addresses, sermons and other works of the same nature
- dramatic or dramatic-musical works
- choreographic works and entertainments in dumb show
- musical compositions with or without words
- cinematographic works to which are assimilated works expressed by a process analogous to cinematography
- works of drawing, painting, architecture, sculpture, engraving and lithography
- photographic works to which are assimilated works expressed by a process analogous to photography

- works of applied art, illustrations, maps, plans, sketches and three-dimensional works relative to geography, topography, architecture or science”⁸

With the development of information technology, in addition to the above, computer programmes or software, and databases have also been included as copyright-eligible works.

Copyright is indicated by the sign ©.

In the case of a literary work (except computer programme), copyright means the exclusive right

- To reproduce the work e.g. as a printed publication
- To issue copies of the work to the public
- To perform the work in public e.g. as a play or as a song
- To communicate the work to the public
- To make cinematograph film or sound recording in respect of the work
- To make any translation of the work in other languages
- To make any adaptation of the work e.g. from a novel to a film

Copyright protection extends to expressions only and not to ideas, procedures, methods of operation or mathematical concepts as such.

The unique feature of copyright is that there is no need to register it, and copyright comes into force as soon as a work is created. However, a registration with the national registration office provides the copyright owner with a legal proof in case of a copyright dispute or infringement.

The general term or period of protection for literary, dramatic, musical and artistic work is the life time of the author and sixty (60) years from the following year of the death of the author. In the case of other works like cinematographic films, sound recordings, etc., the 60-year period starts from the date of publication.

Interestingly, the copyright protection is not absolute and there are exceptions when copyright material could be used without permission. Some of such exceptions include the use of copyright material

- for the purpose of research or private study,
- for criticism or review,
- for reporting current events,
- in connection with judicial proceeding,
- for performance by an amateur club or society if the performance is given to a non-paying audience, and
- for the making of sound recordings of literary, dramatic or musical works under certain conditions.

Such usage is also called *fair use* or *fair dealing* in the context of copyright. Along with copyright, there are some other **related** rights that are applicable to intermediaries who bring the copyright work of the author to the end user i.e. the public. These include the rights of

- performing artists (such as actors and musicians) in their performances;
- producers of sound recordings (for example, cassette recordings and compact discs) in their recordings;
- broadcasting organizations in their radio and television programs.

1.3.6. Layout-Design of Semiconductor Integrated Circuits

“Semiconductor Integrated Circuit means a product having transistors and other circuitry elements, which are inseparably formed on a semiconductor material or an insulating material or inside the semiconductor material and designed to perform an electronic circuitry function. The layout-design of a semiconductor integrated circuit means

a layout of transistors and other circuitry elements and includes lead wires connecting such elements and expressed in any manner in semiconductor integrated circuits.”

“Under the Indian Act, the duration of protection commences from the date of application for registration in case of layout designs, which have not been commercially exploited. For layout designs which have been commercially exploited for less than two years before the date of application for registration, protection commences retrospectively from the date of first commercial exploitation.”

The duration of protection is 10 years. For protection, registration is a must. The registered proprietor has the exclusive rights to use, import, sale, assignment and transmission of protected layout design. Intelligent goods in business advertisements may embody such chips e.g. computer, washing machine, mobile phone, watch, refrigerator, camera, etc.

1.3.7. Trade Secret

A trade secret is any confidential business information such as manufacturing or industrial secrets and commercial secrets that provide a competitive edge to an enterprise. These include sales methods, distribution methods, consumer profiles, business strategies, lists of suppliers and clients and manufacturing processes including formula, ingredients, instruments, designs, etc. Its unauthorised use is considered as unfair trade practice. Trade secrets can remain in force as long as the secret information is protected. One of the most famous trade secrets is the Coca-Cola company’s secret recipe for Coca-Cola, which is known to only a few executives, and has remained a trade secret ever since 1886 when it was first manufactured in Atlanta, USA.

1.3.8. Traditional Knowledge

“Traditional knowledge is employed to mean knowledge, innovations and practices of indigenous and local communities embodying traditional life-styles; the wisdom developed over many generations of holistic traditional scientific utilization of the lands, natural resources, and environment. It is generally passed down by word of mouth, from generation to generation and is, for the most part, undocumented.”

Traditional Knowledge (TK) serves as an intellectual identity tag for a community and needs to be protected from misrepresentation by others for commercial or political benefits. The IP protection can be either “positive protection by giving the holders the right to take action or seek remedies against misuse” or “defensive protection by safeguarding against illegitimate intellectual property rights acquired by third parties over traditional knowledge.”

The domain of TK encompasses a wide range of subjects including food, medicine, cultural expressions like folklore, music, biological diversity and genetic resources. India’s vast wealth of traditional knowledge in the field of Indian systems of medicine has been documented and organised into a database known as Traditional Knowledge Digital Library (TKDL) that has helped prevent bio-piracy of many patents based on this traditional knowledge by western companies.

1.3.9. Life Sciences

Technological advancements and innovations in the fields of life sciences like biotechnology, pharmaceuticals, genetic engineering, medical technology, nutritional science, environmental technology, etc. have thrown up new challenges to the IP system. Broader issues like moral and ethical aspects, human rights, public health, affordability, bio-safety, food security, sustainable development and environmental impacts have come into the picture while giving IP protection to inventions in these fields. Genetically modified (GM) crops in

which genes are tweaked to produce disease-resistant and high yielding crop varieties have generated a lot of controversies because of highly-restricted monopolistic nature of technology and its long-term effect on human health. For poor and developing countries, lacking advanced life sciences technologies, the implications can be disastrous in the absence of a humanitarian approach.

HYPOTHESIS :

The Intellectual Property Information on Industrial Development & Knowledge Creation in India is the base of intellectual property rights to protect the industry as well as business field to create a balance in the market economy. As I observed Intellectual Property throughout the world provides a valuable insight into the scope and challenges of intellectual property management, particularly in the context of developing countries like India.

RESEARCH METHODOLOGY:

The study of this dissertation shall involve doctrinal research methodology. Study of this subject will be done through a various books, e – books, articles, journals and internet data base, & law reports.

LITERATURE REVIEW:

Because of its enormous influence and importance, Intellectual Property information has been an intriguing subject matter of numerous studies from various disciplines. Researches have been done throughout the world on various forms of Intellectual Properties from technological, economical, legal, political, cultural, social and ethical angles. Some of these research literatures retrieved through internet searches including on websites.

1. IPR Researches Specific to India :

Kirit K Patel (2008) examined the impact of liberal IPR policies on agro-biodiversity in two local communities, one tribal and one non-tribal, in two tribal villages, Dhabudi and Sarjumi in Dahod district of Gujarat.¹ He found that the claims of new IPR policies related to farmers' rights legislation to increase crop varietal choices, encourage farmer-breeders and promote on farm conservation are overstated. He came to the conclusion that agro-biodiversity is no longer an asset but is becoming a liability for farmers as their farms become smaller and levelled, as inequality within the community increases, as principal farmers migrate to distant labour markets for longer than just the lean season, and as policies continue undermining the role of local seed systems and public sector institutions in the development and dissemination of new crop parietal diversity.

Mara Nielle Bird (2006) from the University of Southern California, USA, reviewed the policy framework related to transgenic crops in three developing countries viz. Argentina, Brazil and India during the period 1996-2002.² Intellectual property rights figured as an important parameter in policy formation, bio-safety, food safety, consumer choice and public

research being other influencing areas. NGO strategies became the key factor in case of India in policy formulation process.

Prasad VijayKumar (2000) analysed India's enactment of Copyright Act, its conformity to TRIPS agreement for copyright protection, and development of software industry in India.³ He attributes software piracy in India not to lack of legal provisions but to various socio-economic factors like relatively high software prices, lack of user awareness, poverty, illiteracy and unemployment, poor enforcement mechanisms and lack of national infrastructure.

Pia Law (1999) examined the effects of India's signing the TRIPS agreement on the antibiotic sector of the pharmaceutical industry in India.⁴ Analyses of seven selected antibiotics showed that strengthening the patent regime does not necessarily lead to higher prices, which rather depends on the market structure and elasticity in user demand.

Natalia E. Tabachnaia-Tamirisa (1997) examined the economics of IPR protection and effects of a strong patent regime on Indian pharmaceutical industry post-GATT period.⁵ A strong IPR regime leads to increase in cost of acquiring product blueprints, discourages imitation, reduces variety, output and exports of pharmaceutical products, resulting in likely loss for the pharmaceutical industry in the short term. These issues need to be factored while framing a national science and technology policy with the focus on promoting innovative research, stimulating market competition and creating a favourable environment for foreign direct investment, besides providing suitable safeguards like cost-effective pharmaceutical products to vulnerable groups like poor users in the intermittent period.

Michael W. Bollom (1997) from the University of Washington researched in the field of intellectual property rights reforms in India during the early years of the GATT agreement.⁶ He did a comparative study of Indian patent and copyright law reforms and came to the conclusion that property rights institutions like the drug industry with their business

interests influenced the domestic politics to a great extent and played an important role in patent law reforms in India. The debate raised over IPR reforms would further shape the future economic policies in India.

Manjula Maudgal Luthria (1996) from Georgetown University, USA, evaluated patent values across different sectors in India and observed that patent values are much lower in India compared to developed nations, foreign patents have more value than domestic patents, and the rate of loss in value is higher in India than in developed countries.⁷ Among different sectors, chemical, metallurgical and medical equipment patents garner highest values whereas patents in agriculture and domestic articles stand lowest in the value scale.

In one of the earliest studies even before the GATT agreement, Tamali Sengupta (1991) from Stanford University, USA, examined the effects of IPR protection on economic development of India and South Korea with reference to software and pharmaceutical industries.⁸ She found that though an investment-friendly legal framework and market size play a greater role in attracting foreign investment and technology flow, a stronger IPR regime would be in the interest of a developing country and facilitate more foreign investment and technology transfer by assuring the international business community of protection of their technological and business interests.

2. IPR researches specific to countries other than India :

Kristie N. Briggs (2008) explored the relationship between IPR and trade and development in developing countries.⁹ Developing countries under pressure from developed countries are found to implement strong IPR when per capita GDP is low, and relaxed IPR with increase in per capita GDP. While stronger IPRs are linked to increased export in developing countries, high technology goods with relatively high production and adaptation costs yet pertinent in developing countries may increase export to developing countries.

Chi Ho Angus Chu (2008) evaluated the effects of patent policy on R&D and economic growth with quantitative analyses, and concluded that eliminating blocking patents stimulate more R&D than extending the patent length.¹⁰

Lori-Lin Shipman (2007) examined the reasons for piracy in the form of optical disc in movie industry in China, and attributed film piracy to a host of factors like poor enforcement of IPR, government infrastructure, legal system and culture.¹¹

Using the patent application data in 1969-1999, Yu Huayang (2007) showed that IPR protection in other countries does not promote technological innovations in the USA.¹²

Xiangxiang Ye (2007) investigated the relationship between the Plant Breeders' Rights (PBR) on wheat yields in Western Canada during 1998 to 2006 and found no significant effect on overall wheat yield.¹³ Among three individual wheat varieties viz. Durum, Hard Red Spring and Prairie Spring, the empirical evidence shows a positive impact of PBR Act on wheat yield of Durum variety in Alberta during 1999 to 2003.

Xiaofei Yang (2007) focussed on effects of IPR policy on technology transfer through joint ventures and on domestic innovation in conjunction with tariff policy.¹⁴ The IPR policy of developing countries undergoes gradual changes, with weak IPRs preferred initially when bargaining power is low and innovation capability is high. Strong IPRs are preferred with economic advancement and also when tariff restrictions are high. Joint ventures than mere FDI may lead to higher technology inflow into developing countries and promote domestic innovation.

Using patent citations, Ioana Popovici (2007) observed that overseas R&D activities by US MNCs facilitated technological knowledge flow from the host countries and benefited the US economy.¹⁵ IPR reforms in reforming countries favour innovations of domestic firms rather than US MNC efforts.

Guillermo Bosch Canto (2007) looked into the protection mechanism of some non-traditional trademarks like sound, scent, flavour, shape, texture, motion and colour marks in Mexico, Canada and the United States of America.¹⁶ In order to provide proper legal protection to these non-traditional marks, changes in trademark laws of Mexico and Canada are suggested for their registration as has been done in the USA. With technological advancement and computer system, the compulsory criterion of visual representation of trademark can be addressed and adjusted to include the non-traditional marks.

In a unique study, Puleng Lenkabula (2006) analysed the IPR issues from an ethical angle and examined the effects of bio-piracy of indigenous knowledge by multinational pharmaceutical and biotechnology companies on socio-ecological and economic conditions of African communities.¹⁷ The study recommended establishing a preventing mechanism rooted in African normative principle of *botho* and Christian ethical principle of justice.

Ngan Thoai Trinh (2006) found a unique pattern of defiance of copyright protection laws in Vietnam in the trade of pirated music CDs in Ho Chi Minh City (HCMC).¹⁸ The piracy industry provides affordable music to end users against overpriced music available from government and multinational corporations under the copyright law and, in fact, sustains the local demand for all types of music in Vietnam besides promoting local music culture. The thesis argues if piracy in HCMC is as negative as generally thought or it has some positive influences also in the continuity of cultural flow in Vietnam.

Damon Stoddard (2006) reviewed the pharmaceutical data protection law in Canada that provides protection to clinical trial data of a drug by initial applicant for eight years, during which generic drug makers are required to pay license fees for utilisation of these data submitted to the health authorities.¹⁹ The author suggests a reduction to a time period of five years for data protection and also gradual reduction in amount of license fees with time through legislative mechanisms, so as to benefit the common public.

Kremena Stoeva Platikanova-Gross (2006) studied the economic implications of intellectual property rights on investment incentives, social welfare in cumulative innovations and imports in developing countries.²⁰ She finds that though initially there is an increase in investment in basic research, it decreases subsequently in the degree of patent protection of basic research. The welfare effect increases in a competitive equilibrium. IPR reforms with stronger IPR regimes have induced an increase in imports in developing countries.

Yi Qian (2006) explored the economics of IPR, innovation and antitrust policies.²¹ In a study of pharmaceutical sector in 92 countries, he observed that domestic innovation, in addition to national patent protection, increases with economic development, educational attainment and economic freedom but only to an optimum IPR regulation level and beyond which it decreases. In Chinese footwear sector, cheap counterfeit products compelled authentic producers to further improve quality and also increase price. In US manufacturing firms, more patents are likely to increase the possibility of federal antitrust charges.

Vanessa L. Brown (2006) established that a very strict IPR regime does not lead to more innovation, rather it stifles the innovation attitude with a negative consequence as happened in case of French wine which is a Geographical Indication.²² IPR has been a political tool affecting international relations and trade.

RESEARCH PROBLEM:

The Topic is Intellectual Property Information and its role & Importance in Knowledge Generation & Industrial Development in India is very important and broad. This topic is very difficult for him/her to analysis the topic and collects the data from the proper platform.

CHAPTER 2

HISTORY OF INTELLECTUAL PROPERTY

2. Global Scenario

Creativity has been an essential characteristic of human species since time immemorial. It has led to thousands and thousands of inventions that ultimately have transformed our civilization. Inventions have been described in ancient texts and specimens have been unearthed during excavations throughout the world that speak of relentless creativity of the human mind down the ages. However, names of specific inventors in many cases are unknown, like the name of the inventor of wheel or fire or mirror. Some important milestones in the invention trajectory of civilization have been mentioned below.

Pottery, a very major achievement in the development of civilization, dating back to circa 10,000 BC has been unearthed on the Honshu Island of Japan. Compass, that made possible thousands of voyages and changed the course of history, was first mentioned in a Chinese text and believed to be invented in China about 2400 years back.

The Smith College Museum of Ancient Inventions, USA, lists among others the following inventions of ancient civilizations:

- Woven Cloth – 7000 BC - worldwide
- Eyeliner – 4000 BC – Egypt
- Castile Olive Oil Soap - 2000 BC - Spain,
- Aztec Calendar Wheels -- 1000 BC - Central America
- Battery - 250 BC – Baghdad
- Forceps – 79 AD – Rome
- Steam Engine – 100 AD – Heron of Alexandria, Egypt

In the following passages, we shall discuss the evolution of the concept of Intellectual Property down the ages. Barring a few exceptions, the concept of Intellectual Property as we know today started getting shape in the middle ages in Europe.

2.1. History of Patents

The history of granting monopolistic right or patent dates back to antiquity . The ancient Greece city of Sybaris (now in Southern Italy) granted a one-year monopoly to inventors of unique culinary dishes.¹⁸ One of the earliest known instances of patent grant was the issue of *letters patent* by the Crown in England to inventor John Kempe and his company in 1331. Henry VI granted an English patent for invention to Flemish-born John of Utynam in 1449. The patent gave John a 20-year monopoly for a method of making stained glass, required for the windows of Eton College that had not been previously known in England. The British patent system gradually spread to other British colonies including Australia and India.

Italy was another country where the patent system flourished. In 1421, the Florentine architect [Filippo Brunelleschi](#) received a three year patent for a barge with [hoisting](#) gear, that carried marble along the [Arno River](#) in 1421. The city of Venice started granting patents systematically in 1450. Skilled Venetians who emigrated to other places sought similar protection for their inventive skills that led to the diffusion of patent systems to other countries. In France, the first patent specification was granted to [Abel Foullon](#) for "Usaige & Description de l'holmetre", (a type of [rangefinder](#)).

In 1790, the US Congress passed “An Act to promote the progress of useful Arts” and the first US patent was granted on July 31, 1790 to [Samuel Hopkins](#) of Philadelphia for a method of producing potash (potassium carbonate), an essential ingredient used in making soap, glass, and gunpowder.

2.2 History of Copyright

The first Copyright Act in the world, known as the **The Statute of Anne** was enacted by the Parliament of Great Britain in 1710 during the reign of Queen Anne. It was envisaged as “An Act for the Encouragement of Learning, by Vesting the Copies of Printed Books in the Authors or Purchasers of such Copies, during the Times therein mentioned.”²¹ The act for the first time vested copyright with the author rather than the publisher and recognised the injurious treatment of the author by the publisher. Patterson and Joyce (2003 p.916) writing in the *Emory Law Journal* termed it as "the watershed event in Anglo-American copyright history ... transforming what had been the publishers' private law copyright into a public law grant". The Copyright Clause of the United States Constitution and the Copyright Act of 1790 drew on the Statute of Anne.

2.3 History of Trademarks

Even in ancient times, marks were used to indicate ownership or manufacturer of certain products as discovered in the Bison painted on the walls of the Lascaux Caves in southern France (circa 5000 B.C.), in stone seals of the Middle East (circa 3500 B.C.) and stamps or marking found on bricks or pottery in ancient Egypt, Greece, Rome and China.

In the medieval Europe, trade guilds started using marks to indicate manufacturer of products like bells, paper and bread. One of the first trademark laws, known as Bakers Marking Law, was introduced in England in 1226, followed by law for silversmiths in 1363. The use of marks started getting popular among other manufacturers like bottle makers and porcelain manufacturers. The first case of trademark infringement, known as *Southern v. How*, came up way back in 1618 in England over the misuse of mark in poor-quality cloth that was actually meant or reserved for top-quality cloth. In France, furniture manufacturers began using marks in 1751. A company named Averill Paints got the first modern trademark in the USA in 1870.

Since then thousands of trademarks have appeared in the market. Some marks like aspirin, nylon, thermos, escalator have become so popular that they have become generic names.

2.4 History of Designs

Industrial Design protection started first in textiles and later spread to other articles. The first Act, Designing & Printing of Linen Act of 1787, introduced in England gave copyright protection industrial designs in textiles for 2 months. The Copyright and Designs Act 1839 established the foundations of modern designs law. In 1875, the designs registry merged with the Patent office and in 1883, a single act was passed covering Patents, Designs and Trademarks.

Modern Day Initiatives :-

- After the end of the 2nd world war, in order to discipline and boost the world trade through rationalisation of trade restrictions prevalent since 1930s, 23 countries (India included) signed an agreement towards reduction of tariff restrictions on October 30, 1947. The new tariff concessions came into effect by June 30, 1948 through a “Protocol of Provisional Application” and the General Agreement on Trade and Tariff (GATT) was born with 23 countries (India included) as founding members (contracting parties). One of the major aims of this negotiation was to create an International Trade Organisation (ITO) on the pattern of the World Bank and the International Monetary Fund (IMF).
- Since then till 1994, there were 8 rounds of discussions under the GATT. Details of these rounds have been presented in the Table No.
- Intellectual Property Rights (IPR) was introduced as a subject matter of discussion for the first time in the Uruguay round during 1986 - 1994.
- These intense discussions finally culminated into the formation of the World Trade Organisation (WTO) on January 1, 1995.
- The WTO’s **Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)** introduced intellectual property rules into the multilateral trading system .
- The TRIPS covers five broad issues ¹⁸

- how basic principles of the trading system and other international intellectual property agreements should be applied
- how to give adequate protection to intellectual property rights
- how countries should enforce those rights adequately in their own territories
- how to settle disputes on intellectual property between members of the WTO
- special transitional arrangements during the period when the new system is being introduced.

Table 3. The GATT Trade Rounds

<i>Year</i>	<i>Place/name</i>	<i>Subjects covered</i>	<i>Countries</i>
1947	Geneva	Tariffs	23
1949	Annecy	Tariffs	13
1951	Torquay	Tariffs	38
1956	Geneva	Tariffs	26
1960-1961	Geneva Dillon Round	Tariffs	26
1964-1967	Geneva Kennedy Round	Tariffs and anti-dumping measures	62
1973-1979	Geneva Tokyo Round	Tariffs, non-tariff measures, framework agreements	102
1986-1994	Geneva Uruguay Round	Tariffs, non-tariff measures, rules, services, intellectual property , dispute settlement, textiles, agriculture, creation of WTO, etc	123

CHAPTER 3

INTELLECTUAL PROPERTY INFORMATION

3. The Indian Scenario of Intellectual Property information :-

The development of IP system in a country depends among other factors on the societal value and philosophy prevalent and practiced in the country. The famous adage **Bahujana hitaya, bahujana sukhaya** (बहुजन हिताय, बहुजन सुखाय) – For welfare of all, for happiness of all) has been the guiding principle throughout ages for welfare of society in India. If to serve the society and humanity as a whole becomes the supreme objective, individual or self interest takes a back seat. This author is of the view that something similar happened in ancient India when in spite of having remarkable development in various fields of science and technology, the new knowledge was not commercialized on a mass scale as it happens in the present day world where developed IP finds its use in commercial utilisation. One of the best examples is the development and documentation of Ayurveda by various medical practitioners over a period of several thousand years and dissemination of this life-saving knowledge not only to students of this discipline but also to the society in general. It has thus become a part of our traditional knowledge and heritage, and this time-tested knowledge comes to the rescue of millions of Indians who do not have to pay any royalty for its use for medical treatment. In modern times, this sentiment was vividly echoed by Sir Jagdish Chandra Bose, one of the greatest Indian scientists ever, in his opening ceremony lecture of the Bose Institute in Calcutta (now Kolkata) on November 30, 1917:

“The lectures given here will not be mere repetitions of second hand knowledge. They will announce new discoveries, demonstrated for the first time in these halls. Through regular

publication of the work of the Institute, these Indian contributions will reach the whole world. They will become public property. No patents will ever be taken. The spirit of our national culture demands that we should forever be free from desecration of utilizing knowledge only for personal gain.”

The IP system came along with the British who introduced the concept of IP in India way back in 1856 to encourage inventions of new and useful manufactures and to induce inventors to disclose secret of their inventions. This act was based on the British patent law of 1852. It subsequently underwent several modifications to develop into the Indian Patents and Designs Act of 1911. After independence, to suit her specific needs and also to meet the obligations of TRIPS, India introduced new legislations for new forms of IP (e.g. semiconductor integrated circuit layout design, geographical indications, protection of plant varieties, etc) besides amending the existing IP acts to align with the requirements under TRIPS.

The development of IP regime in India took place through several routes such as

- Introduction and amendment of legislations
- Development of infrastructure like
 - ❖ establishment of new IP offices
 - ❖ modernisation of IP offices
 - ❖ introduction of e-filing of IP
 - ❖ human resource development through IP training and
 - ❖ IP information services
- Signing of various international treaties and bilateral co-operation

TABLE 4. DEVELOPMENT OF IP LEGISLATIONS IN INDIA

IPR	Act	Rule	Amendment(s)
Patents	1856,1859,1872,1883, 1888,1911,1970	2003 (02.05.2003)	1999, 2002, 2005,2006, 2019
Designs	1872,1888,1911,2000	2001	2003, 2019
Trademarks	1999	2002	2010
Geographical Indications	1999	2002	
Information Technology	2000 (09.06.2000)	2000 (17.10.2000)	
Semiconductor Integrated Circuit layout Design	2000 (04.09.2000)	2000 (11.12.2001)	
Copyright	1911,1914,1957 (21.01.1958)	1958 (1995)	1999, 2012
Plant Varieties and Farmer's Rights	2001	2003	
Bio-diversity	2002	2004	
Test Data Protection	Report has been submitted on steps to be taken by the government on 31.05.2007		

3.1 Infrastructure Route:

- Addresses of various IP offices are presented in table 5.
- To catch-up with the international trend and ensure the ease in application process, E-filing of applications for patents, trademarks and copyright has been introduced.
- For human resource development, a National Institute for Intellectual Property Management (NIIPM) has been established at Nagpur as a national centre of excellence for training, management, research, education in the field of Intellectual Property (IP) Rights.
- The Patent Information System (PIS), Nagpur, offers technological information services to users through computerised search, retrieval and dissemination of patent information.

Table 5. Indian Intellectual Property Rights Offices

<i>IPR</i>	OFFICES
Patents	<p>Controller General of Patents, Designs and Trademarks (CGPTDM) Boudhik Sampada Bhawan, S.M.Road, Near Antop Hill Post Office, Antop Hill, Mumbai - 400 037 Phone: 022-24137701, 24141026, 24150381, 24148165, 24171457 Fax: 022-24130387 E-mail: mumbai-patent@nic.in URL: http://ipindia.nic.in/ipr/patent/patents.htm</p>
	<p>The Patent Office, Intellectual Property Office Building, CP-2 Sector V, Salt Lake City, Kolkata - 700091 Phone: 033-23671945, 1946, 1987 Fax: 033-23671988 E-mail:- kolkata-patent@nic.in</p>
	<p>The Patent Office, Intellectual Property Office Building, Plot No. 32, Sector 14, Dwarka, New Delhi - 110075 Phone : 011-28034304, 28034305, 28034306 Fax: 011-28034301, 28034302 E-mail: delhi-patent@nic.in</p>
	<p>The Patent Office, Intellectual Property Office Building, G.S.T. Road, Guindy, Chennai - 600032 Phone: 044-22502081- 84 Fax: 044-22502066 E-mail: chennai-patent@nic.in</p>
	<p>National Institute for Intellectual Property Management (NIIPM), Patent Information System, CGO Complex, Block 'C, Seminary Hills, Nagpur – 400006 Phone: 0712-2511380, 2510088, 2510535 Fax: 0712-2510186, 2512040 E-mail: niipm.ipo@nic.in, ipti-mh@nic.in URL: http://ipindia.nic.in/Niipm/index.htm</p>
Trade Marks	<p>Headquarters: Office of the Trade Marks Registry, Bhoudhik Sampada Bhavan, Near Antop Hill Head Post Office, S.M. Road, Antop Hill, Mumbai - 400037 E-mail : tmmum@bom5.vsnl.net.in URL: http://ipindia.nic.in/tmr_new/default.htm</p>
	<p>Trade Marks Registry, Intellectual Property Office Building, CP-2 Sector V, Salt Lake City, Kolkata - 700091 Phone : 033-23675975, 23672848, 23677307, Fax : 033-23677311, E-mail : tmrcalbr@cal2.vsnl.net.in</p>
	<p>Intellectual Property Office Building, Plot No. 32, Sector 14, Dwarka, New Delhi - 110 0075, Phone : 011-28082915-16, Fax : 28082917, E-mail : tmdel@vsnl.net.in</p>
	<p>Trade Marks Registry, Intellectual Property Office Building IP Building, G.S.T. Road, Guindy, Chennai - 600032 Phone: 044-22502041 Fax : 044-22502042 E-mail: tmrchennai@nic.in</p>
	<p>Trade Marks Registry, National Chambers, 15/27, 1st floor, Ashram Road, Ahmedabad - 380009 Phone: 079-26580567, 26587193 Fax: 079-26586763 E-mail : tmrahm@ad1.vsnl.net</p>

Designs	The Patent Office (Designs Wing), Intellectual Property Office, CP-2 Sector V, Salt Lake City, Kolkata - 700091 Phone: 033-23671945-46, 23671987 Fax: 033-23671988 E-mail: kolkata-patent@nic.in URL: http://ipindia.nic.in/ipr/design/designs.htm
Geographical Indications	Geographical Indications Registry, Intellectual Property Office Building, G.S.T. Road, Guindy, Chennai - 600032 Phone: 044-22502091 - 93, 22502098 Fax: 044-22502090 E-mail: gir-ipo@nic.in URL: http://ipindia.nic.in/girindia/
Copyright	4 th Floor, Jeevan Deep Building, Parliament Street, New Delhi - 110001 Phone: 011-23382436, (23382549, 23382458-Extn-45) E-mail: copyright@nic.in URL: http://copyright.gov.in
Semiconductor Integrated Circuits	Semiconductor Integrated Circuits Layout-Design Registry, Room No. 3014-3015, Department of Information Technology, Ministry of Communications and Information Technology, Electronics Niketan 6, CGO Complex New Delhi - 110 003 Phone: 011-24301405/905 Fax: 011-24361464 E-mail: kschhari@mit.gov.in
Plant Varieties	Protection of Plant Varieties and Farmer's Rights Authority, Department of Agriculture and Cooperation, Ministry of Agriculture, NASC Complex, DPS Marg, Opp- Todapur Village, New Delhi -110 012 Phone: 011-25848127 Fax: 011-25840478 E-mail: chairperson-ppvfra@nic.in URL: http://www.plantauthority.gov.in/
Traditional Knowledge	Traditional Knowledge Digital Library (TKDL), Council of Scientific and Industrial Research (CSIR), Rafi Ahmed Kidwai Marg, New Delhi – 110001 Phone: 011-23714208, 23738174 Fax: 011-23738173 E-mail: vkg@csir.res.in URL: http://www.tkdl.res.in/
Bio-Diversity	National Biodiversity Authority, 5th Floor, TICEL Bio Park, Taramani Road, Taramani, Chennai - 600113 Phone: 044-22541805 Fax: 044-22541073 E-mail: chairman@nbaindia.in URL: http://www.nbaindia.org/

3.2 International Treaties and Co-operation Route:

To strengthen the IP system, India has signed a number of international IP treaties and entered into bilateral agreements with countries like Germany, Switzerland, Japan, United Kingdom, France, European Patent Office (EPO) and USA. The IP treaties to which India is a signatory in websites. In addition, India has become active members of various WIPO bodies as shown in Table No.7.

Table 7. Indian Membership in WIPO Bodies

Contracting Party	Union	Body
India	Berne Union	Assembly
India	Berne Union	Executive Committee
India	Budapest Union	Assembly
India	Paris Union	Assembly
India	PCT Union	Assembly
India	WIPO	Conference
India	WIPO	Coordination Committee
India	WIPO	General Assembly
India	WIPO	Program and Budget Committee

Source: Retrieved November 02, 2009, from

http://www.wipo.int/treaties/en/ShowResults.jsp?country_id=80C&search_what=B&bo_all=ALL

3.3 **Intellectual Property Information**

In order to understand the importance of intellectual property information, it is imperative to know what information is actually contained by different types of intellectual properties. Examples are given below for a detailed picture.

3.4 **Patent information**

Because of its secretive nature during the development stage and potential business value, it is generally not disclosed before it is applied. A patent document contains a plethora of information related to an invention as mentioned below:

A. **Bibliographic Information** : the first page of the published patent document may

contains information on

1. Publishing Country
2. Publication Date
3. Publication/Grant No.
4. Title of the patent
5. Name(s) of the inventor(s) along with their address(es)
6. Name(s) of the applicant(s) along with their address(es) where the applicant is

different from the inventor.

7. Application No.
8. Filing Date
9. References
10. Classification Codes including country classification code and international

classification code

- B. **Abstract:** Brief description of the invention highlighting the novel features and claims on them
- C. Drawing(s)
- D. Descriptive Text:
 - i. Prior Art
 - ii. Description of the invention
 - iii. Claims
 - iv. Grant certificate along with signature of the competent authority (in case of granted patent).

3.5 Advantages of Patent Document

1. A Patent documents is a **primary sources of information** generally not disclosed in any other form of literature. According to a study by the United States Patent and trademark Office, 70% of the technology disclosed in US patent documents from 1967 to 1972 were not available in any non-patent literature.
2. Patent documents are **source of information for technology development and technology transfer** as they contain generally the most recent or ‘state-of-the art’ information in a particular technology field not usually available elsewhere. Because of its economical value, the inventor will try to apply as early as possible to ward off claims by rival inventors working in the same field. Armed with a patent, the inventor can dictate the sale price or royalty for licensing or selling his technology than he could do without a patent.
3. The **fairly uniform structure** of patent documents makes it convenient for reading as various sections clearly describe the various aspects of invention. For example, the ‘abstract’ offers a general idea about the invention to decide the

suitability for further reading, the ‘prior art’ says about the previously known technology in the field, the ‘description’ part discusses the differences between the present and the previous technologies and the ‘claims’ part highlights the new facets of the invention.

4. Patent documents are classified according to a particular **classification system**, for example, International Patent Classification System (IPC), and search through a particular class yields all patented technologies available in that technology domain. This helps the user tremendously in gathering information in a particular field of technology.
5. The date stamps of patent documents points out to the validity period of the patent and the likely date of expiry.
6. The names and address of the applicant, the patentee and the inventor help the prospective buyer to contact them for conditions of technology transfer.
7. As a source of scientific and technical information, the patent documents find wide use as
 - i. indicators of technological and industrial development
 - ii. indicators of innovative capacity of a particular company or country
 - iii. tool for assessing economic dynamics
 - iv. tool for monitoring domestic and foreign competitors and market research.

3.6 Users of Patent Information :

The main users of patent information are:

1. Patent offices of various countries
2. Scientific and technical persons, researchers, individual inventors

3. R&D institutions
4. Small and medium-size enterprises
5. IP lawyers
6. Consultancy firms and Market research agencies
7. Information vendors

3.7 Trademark Information :

A trademark contains the following information

1. The mark symbol
2. The owner of the mark
3. Class
4. Utility
5. Date

Example: Class 02-04 No.190502. Bata India Limited, 6A, S.N. Banerjee

- i. Road, Kolakata-700013, West Bengal, India.
- ii. “FOOTWEAR” 22nd November 2002

3.8 Geographical Indications Information:

- 1) Name and Address of the Applicant
- 2) Type of Goods
- 3) Specification
- 4) Name of the Geographical Indication and particulars with picture
- 5) Geographical area of protection and map
- 6) Proof of Origin (Historical records)
- 7) Method of Production
- 8) Uniqueness
- 9) Inspection Body

- 10) Others

3.9 Industrial Design Information :

- 1) Design assignment/registration number
- 2) Classification code of the article
- 3) Owner of the design with address
- 4) Title of the article
- 5) Date of registration
- 6) Design of the article

3.10 Layout of Integrated Circuits Information:

- 1) The circuit layout design
- 2) The owner of the layout design

3.11 Copyright Information :

A granted copyright certificate by the Indian Copyright Offices contains the following information:

- 1) Registration No.
- 2) Name, Address and Nationality of the Applicant
- 3) Nature of Applicant's interest in the copyright of the work
- 4) Class and Description of the work
- 5) Title of the work
- 6) Language of the work
- 7) Name, address and nationality of the author and if the author is deceased, date of his decease
- 8) Whether the work is published or unpublished
- 9) Year and Country of first publication and name, address and nationality of the publisher
- 10) Years and Countries of subsequent publications, if any, and names, addresses and nationalities of the publishers

- 11) Names, addresses and nationalities of the owners of various rights comprising the copyright in the work and the extent of rights held by each, together with particulars of assignments and licenses, if any
- 12) Names, addresses and nationalities of other persons, if any, authorised to assign or license of rights comprising the copyright
- 13) If the work is an Artistic work, the location of the original work, including name, address and nationality of the person in possession of it (in the case of architectural work, the year of completion of work should also be shown)
- 14) Remarks including Diary No., Date of Application and Date of Receipt
- 15) Signature and seal of the Deputy Registrar of Copyrights, Government of India.

3.12 Sources of Intellectual Property Information :

Intellectual Property information is a primary source of information, and emanates from government (national and international) IP offices. It is primarily published by –

1) government IP offices in official gazettes, journals, annual reports and databases developed and maintained by them. The sources may be printed or digital like on CD/DVD or online on web sites. This information may be available free of charge or on payment basis. Details of Indian IP offices are mentioned in the Table 5 and the list of publications in the Table 8.

- 2) Secondary sources of IP information include:
- various other government departments working in the field of IP like in TIFAC, NRDC, CSIR, ICAR, NIC, NISCAIR, DRDO, etc. in India.
 - private information vendors that collect IP information from official sources and sell it after value addition or as it is. Notable examples include Chemical Abstracts, Derwent, IBM patent site.

- In addition, various legal firms and industry associations specialised in IP matters collect such information from official sources and supply it to their clients.

3.13 IP Information and Library and Information Science (LIS)

Because of its importance in academic, professional and industrial spheres, the study of IP information is slowly finding a place in the syllabus of LIS in India. The classification schemes of various IPs like patents, trademarks, designs, etc. share similar classification concepts studied and employed in LIS profession. For example, “the International Patent Classification (IPC), established by the [Strasbourg Agreement 1971](#), provides for a hierarchical system of language independent symbols for the classification of patents and utility models according to the different areas of technology to which they pertain.” (<http://www.wipo.int/classifications/ipc/en/>). The IPC comprises of sections, classes, sub classes, groups and sub groups. The ninth edition of IPC (IPC-2009) contains 8 sections and approximately 70,000 groups.

Professionally, IP information service sector offers a lucrative and emerging field of career opportunity in India. Nowadays IP offices, research institutions, industry associations, information vendors and IP law firms require and employ information professionals with specialisation in IP information like patents searchers who play a crucial role in validation and creation of new IP. These sort of activities are exactly what the LIS professionals are trained at.

Michael White observed in *The Patent Librarian's Notebook* (<http://patentlibrarian.blogspot.com/>): “I believe that the dissemination of patent information is a public good and should be promoted, especially in the education of science and engineering students.”

TABLE 8. PUBLICATIONS BY INDIAN IP OFFICES

Office	IP publications	Nature of Information	Features
Controller General of Patents, Designs and Trademarks	The Indian Patent Journal	Patent applications and granted patents in Part I and Registered Designs in Part II	Published on every Friday. Available online and freely searchable data since 2005.
	Trade Marks Journal	Trade mark applications	Published every Monday, data available online for search since 2009
	Geographical Indications Journal	Geographical Indications – applications and grants	Available online data since 2004
Semiconductor Integrated Circuits Layout Design Registry	Semiconductor Integrated Circuits Layout Design Registry e-Journal	Semiconductor layout design applications	Online, available since June 2011

3.14. The Role and Importance of Intellectual Property

We live in a world surrounded and influenced by intellectual properties, although we may not realise it always. Starting from clothes we wear and house we stay in, to television we watch or car we drive in or bus and train we take to commute from one place to another, or the food we eat or the music we love to listen for pleasure, everywhere there is an

intellectual property touch. In fact our very existence depends on and shaped by the use of intellectual properties invented by someone somewhere in the world.

I shall point out the various features attesting the role and importance of intellectual property.

3.14.1 Knowledge Generation

IP serves as both an input and an output in knowledge exercise.

1. **Basic input in R&D** – IP is a basic input in any scientific and technological R&D aimed at inventing something. It should be used as a starting point and a tool for decision-making. With the knowledge of already existing invention or IP, one can decide the subject and scope of one's own research. Not only that, in fact, at each and every step of R&D, one should keep oneself abreast of the latest IP developments in fields related to own R&D, so that if needed, the on-going R&D can be changed or adjusted accordingly.
2. **Development of New Technology/Intellectual Property** – A successful completion of the R&D may lead to the invention of a new technology or an improvement over the existing technology (utility model) or some new creations like industrial design. These new creations or inventions then can be protected under the IP law as new IP, adding to the existing IP pool of the inventor/creator, organisation and country as a whole. In short, IP begets IP.
3. **Avoidance of Duplication in R&D** – It is, therefore, clear that without the knowledge of existing IP or “prior art” as termed in case of patent, the whole R&D may turn out to be a duplicate exercise, leading to the reinvention of the wheel. Whereas, the knowledge of IP shall help avoid the duplication in R&D.

4. **Prevention of wastage of resources** – By avoiding duplication, one can significantly prevent wastage of valuable manpower, infrastructure, money and time, which could be put to other profitable venture or new R&D.

3.14.2 Industrial Development

1. **Availability of New Technology** – New Technologies become available as a result of R&D and creation of new IPs. These new technologies led to the development of new products, diversification of product portfolio and setting up of new manufacturing units, thereby giving a fillip to industrial development.

2. **Improvement of Existing Technology** – One of the best examples include the technological improvement of steam engine by James Watt. James Watt was born in Greenock, Scotland. Around 1769, he was assigned the task of repairing a Newcomen engine that was deemed inefficient. Watt's addition to the steam engine caused its production and overall usefulness to skyrocket in the 1800s.

The steam engine became that most important aspect of the industrial revolution. It was used on railways, paddle steamers, and steamboats. It was not only used to move goods from place to place but also to move people.

3. In the words of Robert H Thurston (1878), "The wonderful progress of the present century is, in a very great degree, due to the invention and improvement of the steam engine, and to the ingenious application of its power to kinds of work that formerly taxed the physical energies of the human race."

3.14.3. Economic Development

1. **Revenue Generation through Industrial Growth** – The fruits of industrial growth are shared and enjoyed by all the stakeholders viz. the government, the industry and the public. The government earns more revenue through excise and value added tax/sales tax. The profits of the industry and the lending agencies like banks tend to increase, and the people directly and indirectly making a living because of the industry can increase their purchasing power. It leads to pumping more money in the market, that in turn boosts sales in the market requiring more goods i.e. more industrial outputs, transforming into more revenue for the government and the industry.
2. **Employment Generation** – The process of creation of new IP or technology leads to employment generation as described below.
 - a. Technology development requires scientists and support staff for research activity.
 - b. Industries set up to utilise the new technology employ managers, sales staff, consultants, technical people, non-technical people and unskilled manpower.
 - c. Businesses that sell the manufactured goods also offer direct employment to shopkeeper, sales person, accountant, delivery man, etc. and indirectly causes employment to a large number of people in the transport sector that ferries goods from the industrial units to business establishments. It also spawns a flourishing service industry that again recruits mechanics and assistants.
 - d. Middleman/Vendor – In some industries like IT, defence, etc. goods may reach to the end user via a middleman – an authorised agent or vendor. Such

suppliers typically employ a sales team, managers, accounts department and delivery and support staff.

- e. Technology Diffusion – Technology diffusion from the laboratory to the public has generated a booming service industry that enables thousands of people throughout the world to get work and earn a livelihood. Technologies associated with mobile, photocopying, television, cable, etc. have provided jobs to thousands of people in the country as service providers, mechanics and repairmen.

3. **Revenue Loss** – Economic development suffers a severe setback through piracy, counterfeiting and unfair trade practices. The genuine IP right holders, authorised manufacturers and distributors lose their earnings, which may generate less revenue for the government through taxes. Even though the public may get some product at a cheaper rate than that of the genuine one, the quality of the purchased good is compromised. This may shorten the lifespan of the purchased product and offer an inferior quality of service to the customer. Moreover, the genuine manufacturer's reputation in the market is also tarnished because of such pirated inferior quality goods.

3.14.4 Implications of Lacking Intellectual Property

The importance of IP is further highlighted when we see the implications of not having it as pointed out below.

1. In this modern age, when the technological development drives the industrial development, a lack of new technology or IP significantly hampers the industrial development of a country. To make up, the country has to resort to technology import that often entails a major expenditure dwindling the precious foreign currency reserve.

2. **Dependency on Other Countries** – lack of indigenously developed technology renders a country dependent on other countries for technology import. It may not be easy always because of political and economical interests of the exporting country. The importing country may find itself at the mercy of the exporter.
3. **Non-availability of Critical, Cutting-edge Technology** – Critical cutting-edge technologies are less likely to be shared or sold, and even when shared or sold, they extract a heavy premium from the importing country. Only last year, India's signing the nuclear deal with the USA triggered a political turmoil in the country. Although the nuclear deal was extensively debated from political and economical angles, the actual fact that India needed the technology at the first place simply because India could not develop this IP received less prominence.
 - a. Another glaring example surfaced some time back in the Copenhagen Summit in December 2009 when the developed countries like US, Japan, UK and Canada refused to share green technologies with the developing and poor countries free-of-cost.
 - b. These make the green technologies as tradable IPs even when the future of humanity is at stake due to increased CO₂ emission. This also serves as an eye-opener that a country must create and develop its own IP portfolio particularly in case of critical technologies.
4. **Weak IP regime** – When the IP culture is not fostered in a country, it leads to a weak IP regime with a weak indigenous R&D base and a poor IP portfolio. In fact, the dividing line between a developed and a developing country is the measure of the IP portfolio that is richer in case of the former. A weak IP regime is also a disincentive for foreign direct investment and technology transfer.

CHAPTER 4

INTELLECTUAL PROPERTY AND INDUSTRIAL DEVELOPMENT IN INDIA

After the initial apprehensions about the effects of the TRIPS agreement on the competitiveness and market access, Indian industry soon realised its importance in widening scope of business in a globalised economy and accordingly geared up in meeting the challenges as well as utilising the opportunities resulted in a post-TRIPS era. A slew of efforts were taken by both the Government and industry associations to build up an IP culture in India as described here.

4. Innovation Industry

4.1. Government Initiatives: These have focussed on creating an IP ecosystem conducive to industrial development, leveraging the intellectual capital available in the country and converting it into a strong IP portfolio in the long run to join the league of developed countries.

4.1.1. Department of Industrial Policy and Promotion (DIPP) - The Department of Industrial Policy and Promotion (DIPP) formulates IPR policies in the fields of Patents, Trademarks, Industrial Designs and Geographical Indications of Goods and administration of regulations, rules made there under.

4.1.2. Department of Biotechnology (DBT) - The Department of Biotechnology (DBT) under the Ministry of Science and Technology, Government of India, is a leading

organisation in promoting the IPR culture in India. Under the Public Private partnership (PPP) model, in association with the **Biotechnology Industry Research Assistance Council (BIRAC)**, a Government of India enterprise, it is conducting a series of two-day workshops in partnership with Biotech Consortium India Limited, New Delhi, to sensitise the Biotechnology industry, entrepreneurs, start-up and academia on the key issues involved in writing an effective Grant proposal for industry innovation research.

The IPR workshops focus on strategic management of IPR with special emphasis on the BIRAC supported Innovation and Industry Partnership programmes. (TOI, Delhi ed. 24.06.2012).

The BIRAC in-house IP Cell ¹

- provides assistance to SME's, Start ups and Academia for prior art, patentability and freedom-to-operate searches
- offers guidance and advisory services on the Patent filing, IP Policy and IP management to academia and research institutes
- organises various workshop/conferences on IPR to build IP awareness in India
- conducts an IP due diligence for all the eligible proposals received under various funding schemes of DBT like BIPP, CRS etc.
- does patent landscape analysis to identify patenting activities in different domains, and
- analyses Patent Policy of India *vis-a-vis* other countries.

The DBT has been providing technical and financial assistance for protecting IPs generated at R&D institutions/organisations including universities. It is going to set up a panel of experienced IPR attorneys/firms/institutions to undertake IP

protection activities such as filling and prosecuting of patent applications at national and international level up to grant and maintenance of handling the patent cases.

The DBT established a **Biotechnology Patent Facilitation Cell (BPFC)** in July 1999 with the following objectives:²

- Creating awareness and understanding among biologists and biotechnologists, relating to patents and the challenges and opportunities in this area including arranging workshops, seminars, conference, etc., at all levels.
- Introducing patent information as a vital input in the process of promotion of R&D programmes in biotechnology and biology.
- Providing patenting facilities to biologists and biotechnologists in the country for filing Indian and foreign patents on a sustained basis.
- Keeping a watch on development in the area of IPR and make important issues known to policy makers, bio-scientists, biotech industry, etc.

BPFC has facilitated filing more than 100 Indian and international patent applications out of which 5 international and 4 Indian patents have been granted. It now wants to transfer these technologies to industry and consumers.

4.1.3 Department of Electronics and Information Technology (DeitY) : It provides financial support to academia/institutions, industry bodies etc. for IP Awareness Programme in Electronics and IT sector.³

Reputed educational institutes like IISc, IITs, NIITs, IIITs and state government technical institutes are eligible for support under the programme for IPR awareness workshops/seminars as proposed for academia. Industry bodies like MAIT, ELCINA, CII, NASSCOM, FICCI, ISA, ASSOCHAM are eligible for support for conducting awareness programme proposed for working professionals and innovators. DeitY/ DeitY Societies or Autonomous bodies in Collaboration with industry associations like MAIT, ELCINA, CII,

NASSCOM, FICCI, ISA, and ASSOCHAM are eligible for support for International workshops/ seminars involving international experts.

The maximum grant per programme is Rs.1.0 Lakh for educational institutes, Rs. 2.0 Lakhs for awareness programmes for working professional and IPR professionals, and Rs. 5.0 Lakhs for 1 international workshops with international experts.

In exchange of grant, The DeitY gets the ownership of Intellectual Property and the rights associated with it that result from the project. The grantee institution has to consult DeitY regarding IPR protection issues to file patents, register copyrights, etc. before making it public by publishing in the technical journals and books, presenting findings in conferences etc. In case of joint sponsorship, the IP rights are appropriately shared among the sponsoring organizations.

4.1.4. Ministry of Micro, Small and Medium Enterprises (MSME) - The Ministry of Micro, Small and Medium Enterprises (MSME) has taken various IPR initiatives to help MSMEs identify, protect and manage IPR as a business tool. These include:

- Setting up of IP facilitation centres for IP awareness through sensitisation programmes, seminars and workshops
- Financial Assistance of upto Rs. 25,000 on grant of domestic patent, Rs.2 lakh for foreign patent and Rs. 1 lakh for registering Geographical Indications
- Financial assistance for filing international patent applications
- Setting up of “Business Incubators” in Technology Institutions and financial assistance between Rs. 4 lakh and 8 lakh per idea/unit.

4.1.5. PHARMEXCIL - The Patent Facilitation Centre of **Pharmaceuticals Export Promotion Council (PHARMEXCIL)** under the Ministry of Commerce and Industry was set up in 2004 to create IPR/patent awareness among its members and providing information on pharmaceutical patents for manufacturing and trading purpose.⁴

Among the services it offers are:

- General information on patents
- Patent status to check whether a patent is valid or expired
- Interpretation of search information
- Prior art search to know the already existing technology
- Invention mining to identify potentially patentable ideas early on the stage of development
- Patentability opinion about the likelihood of obtaining a patent
- Guidance and opinion about country-wise, field-wise patent landscape/mapping
- Infringement analysis and opinion
- Freedom to operate opinion to ascertain the threat before launching a product

It conducted the following IPR events at the national level:⁵

- [Interactive Session, Presentation on 'US Patent Law and its Impact on Indian Pharma Industry.](#) Jan 20, 2011. Hyderabad
- [Export Promotion and Patents Awareness Seminar at Bangalore on 18th November, 2010.](#) Nov 04, 2010. Bangalore.
- [Patent Awareness Seminar. 31st August, 2010. Hyderabad](#)
- [Patents Litigation as Barrier in International Trade.](#) Aug 21, 2009. Mumbai
- [Patents Awareness Programme.](#) Aug 20, 2009. Mumbai
- [Patents Awareness Programme.](#) May 20, 2009. Mumbai

4.1.6. NRDC - The National Research Development Organisation (NRDC) under the Ministry of Science and Technology is a leading Indian organisation in IPR management including IPR consultancy and technology transfer to R&D institutes and corporate. It is active in areas like assisting inventors in patenting indigenously developed technologies, commercialisation of inventions and export of patented technologies abroad.⁶ To encourage innovation, it offers cash reward to selected inventions every year.

4.1.7. TIFAC - The Patent Facilitation Centre (PFC) under Technology Information, Forecasting & Assessment Council (TIFAC) filed 231 patent applications during June 1995 to September 2003 that are available for commercialisation.⁷

4.2. Efforts by Industry Associations: Major industry associations like the Confederation of Indian Industry (CII), the Federation of Indian Chambers of Commerce and Industry (FICCI), the Indian Drug Manufacturers' Association (IDMA), Organisation of Pharmaceutical Producers of India (OPPI), etc. took proactive steps to increase industry competitiveness through IPR creation and management.

4.2.1. CII - Confederation of Indian Industries (CII) (<http://www.cii.in/> / www.ciionline.org) is a non-government, not-for-profit, industry led and industry managed organisation, playing a proactive role in India's development process. Founded over 115 years ago in 1895, it is India's premier business association, with a direct membership of over 8100 organisations from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 90,000 companies from around 400 national and regional sectoral associations. Headquartered in New Delhi, it has 64 offices and 7 centre of excellence in India and 7 abroad.⁸

Its major IPR initiatives include awareness creation, capacity building, IPR services, protecting IPR against infringement like counterfeiting and piracy and networking at national and international level besides playing active role in IP policy formulation.

- In 2000, CII in association with TIFAC and Andhra Pradesh state government, set up Andhra Pradesh Technology Development and Promotion Centre (APTDC) in Hyderabad to help Small and Medium Enterprises (SMEs) in technology and IPR areas. It's IPR facilitation cell is a pioneer in providing IP training, consultancy and IP protection services in the country.⁹ So far it has catered to 350 IPR service requirements.¹⁰
- On February 22, 2011, with the support of Ministry of Small and Medium Enterprises (MSME), Government of India, CII launched an Intellectual Property Facilitation Centre (IPFC) at Indore, Madhya Pradesh, to cater to the IPR service requirements of micro, small and medium enterprises in Madhya Pradesh. The centre is equipped with state-of-the art facility for IP search and service support and receives help from CII Delhi and IP Facilitation cell at APTDC.¹¹
- The IP cell established by CII at Tamil Nadu Technology Development and Promotion Centre (TNTDPC), Chennai, has serviced more than 100 IP requirements so far.¹²
- CII has been regularly organising conferences and workshops on various aspects of IP management to discuss relevant issues affecting the Indian industry. A few are mentioned below:
 - Workshop on 'Patentable Innovative Ideas - Generating and Protecting Them' 19 - 20 April, 2011, Mumbai
 - 4th International Conference on Counterfeiting and Piracy, 10-11 August, 2010. Mumbai.

- India Design Festival, 7-14 February, 2009, Pune in association with National Institute of Design (NID), Pune Design Foundation, Design India and Department of Industrial Policy and Promotion (DIPP). It discussed issues like the role of design in Indian business and growth of design industry in India.¹³
- India Design Summit annually in association with NID since 2000. This has led to the formulation of National Design Policy by government of India.

4.2.2. FICCI - Established in 1927, the **Federation of Indian Chambers of Commerce and Industry (FICCI)** is one of the oldest apex business organisations in India. Active in 39 sectors of the economy, FICCI works closely with the government on policy issues, enhancing efficiency, competitiveness and expanding business opportunities for industry through a range of specialised services and global linkages. It also provides a platform for sector specific consensus building and networking.¹⁴

The IPR division of FICCI actively deals in issues related to IPR protection and enforcement. Its major activities include IP awareness campaign, capacity building, training the stakeholders like industry and enforcement agencies like police and customs, sensitising the judiciary about speedy disposal of IP-related cases and advising the government on IP policy matters such as developing innovation laws. Recently, it has established an Intellectual Property Facilitation Centre (IPFC) with support from Ministry of MSME, Government of India for helping the MSM enterprises in better IP management. Besides, it has set up an Anti Piracy Coordination Cell for preventing IP piracy.¹⁵

Some of the past events organised by FICCI are:¹⁶

- **Indo-German Conference on Intellectual Property Rights.** Mar 10-11, 2011, New Delhi
- **Workshop for Officials of Intellectual Property Facilitation Centers (IPFC).** Feb 17, 2011, New Delhi
- **Launch of Anti-piracy Coordination Cell.** Oct 15, 2010, New Delhi
- **Launch of FICCI - MSME Intellectual Property Facilitation Centre (IPFC).** Aug 17, 2010, New Delhi
- **Sensitization Programme on IPR For SMEs.** Jul 02, 2010, Hyderabad
- **Sensitization Programme on IPR For SMEs.** Jun 04, 2010, Kolkata
- **Sensitization Programme on IPR For SMEs.** May 21, 2010, Ahmedabad
- **Sensitization Programme on IPR For SMEs.** May 07, 2010, Chennai
- **Sensitization Programme on IPR For SMEs.** Apr 30, 2010, Mumbai
- **Conference on National IP Strategy.** Apr 26, 2010, New Delhi
- **Roundtable on Section 3d of the Patents Act, 1970.** Mar 29, 2010, New Delhi
- **Sensitization Programme on IPR For SMEs.** Mar 25, 2010, New Delhi
- **FICCI International Conference on Traditional Knowledge.** Nov 13, 2009, New Delhi
- **WIPO International Forum on the "Creativity Inventions - A Better Future for Humanity in the 21st Century".** Nov 11-13, 2009, New Delhi
- **National IP Seminar on "IPR and Innovation: A Way Forward for SME's" on the occasion of World IP Day.** Apr 27, 2009, New Delhi

One sector that has been immensely influenced by IPR exposure is the Indian pharmaceutical industry. Its growth and future is directly linked to the changing matrix of Indian and international IPR system in a post-TRIPS era. To cope up with the IPR dynamics like patents, data exclusivity, etc., pharmaceutical associations and drug manufacturers have set up patent/IPR centres and focussed on R&D.

4.2.3. IDMA - Founded in 1961, **Indian Drug Manufacturers' Association (IDMA)** has a member-base of over 800 pharmaceutical companies that account for about 75% in formulations and about 85% in bulk drugs, with exports of about Rs.50,000 crore.¹⁷

- It attributes the spectacular growth of Indian Pharmaceutical Industry from a turnover of Rs. 10 crore in 1948 to Rs.1,00,000 crore today mainly to the Indian Patents Act 1970.
- It has a specialised sub-committee on IPR to guide Indian manufactures and protect their interest.
- It has instituted the IDMA Best Patents Award for best patents granted in India and globally for greater emphasis on innovative research.
- It played an active role in introducing three amendments to the Indian Patents Act in 1999, 2002 and 2005, especially in the formulations of sections 3D and 92 A, to make it fully TRIPS-compatible while at the same time taking care of the public interest of the developing countries including India over the private right of the patent holder.¹⁸

4.2.4. Organisation of Pharmaceutical Producers of India (OPPI) - Established in 1965, the **Organisation of Pharmaceutical Producers of India (OPPI)** represents research-based international and large pharmaceutical companies in India. It lays emphasis on the development of a strong ecosystem of Intellectual Property Rights in India and has submitted representations to the government in respect to patentability, pre and post-grant opposition, compulsory licensing (CL) and regulatory data protection.¹⁹

The efforts of pharmaceutical industry have led to the increase in patenting activities as illustrated in the Table No. 14

One very interesting thing about IPR is that it not only helps its holder/owner during its lifetime, but even after its expiry, when the technology/IP enters into public domain, it can

bring in substantial revenue for other domain players so long the technology finds its use and does not become obsolete. The generic drug industry in India stands to gain tremendously once several global blockbuster drugs go off-patent in the coming years.

Drugs worth \$60 billion will expire during 2012-2015 with about \$30 billion in 2012 alone. Indian companies like Ranbaxy, Dr. Reddy's, Sun Pharma, Torrent, Aurobindo and others are eyeing on this multi-billion opportunity and have enhanced necessary R&D infrastructure to cash in.

Table 9. Statistics of Drug Patents in India

Year	Applied	Granted
1997-1998	1481	291
1998-1999	1555	150
1999-2000	1000	307
2000-2001	883	276
2001-2002	879	320
2002-2003	966	312
2003-2004	2525	419
2004-2005	2316	192
2005-2006	2211	457
2006-2007	3239	798
2007-2008	4267	905
2008-2009	3672	1207
2009-2010	3070	530

Source: CGPDTM, Annual Reports. 2001-2002, 2005-2006 and 2009-2010

Table 10: Blockbuster Patented Drugs and Revenue

Drug	Patent Holder	Year of Expiry	Revenue# (\$bn)
Lipitor	Pfizer	2011	12.1
Diovan	Novartis	2012	6.1
Seroquel	AstraZeneca	2011	5.6
Singulair	Merck	2012	5.0
Plavix	BMS, Sanofi	2011	4.8
Zyprexa	Eli Lilly	2011	4.8
Symbicort	AstraZeneca	2012	3.0
Lexapro	Forest labs	2011	3.4*

Source: <http://timesofindia.indiatimes.com/business/india-business/Indian-companies-eye-1billion-generic-opportunity/articleshow/14076236.cms>

Amidst all emphasis on profit-making through patented inventions, the humanitarian face surfaced sensationally when the Indian Patent Office granted a Compulsory License (CL) to the Indian drug manufacturer Natco to produce sorafenib, the generic version of Nexavar, used for the treatment of liver and kidney cancer, which is patented in India (Indian Patent No. 215758) by Bayer, a multinational drug company. The CL is meant to bring the cancer drug within an affordable price for Indian patients, most of whom otherwise could not have accessed the highly priced patented version. The CL requires Natco to charge INR 8900 (\$180) for a month's dose as against the price of Bayer's patented version at INR 2,84,428 a month,²⁰ donate free supplies to 600 needy patients each year and pay 6% royalty quarterly to Bayer on sales. At the same time, Natco cannot pass off its product as that of Bayer's in terms of the trade mark, trade name and the packaging of the product.²¹

The CL was granted on the basis of following three different yet factually related grounds:

1. for not meeting the public requirement for the patented drug;
2. that the patented invention is not available at a reasonably affordable price;
3. that the patented invention is not worked in the territory of India.

4.2.5. Academy-Industry Interaction: Like developed countries such as USA, Japan, etc. Indian academic institutions have taken initiatives to cater to the industrial needs for IP generation. IPR cells have been set up in many institutions including IITs, universities and research centres to market the technologies developed to the industries.

4.3 Industrial technology :

4.3.1 Indian Institute of Technology, Delhi (IITD) - The Foundation for Innovation and Technology Transfer (FITTT), a registered society of IIT, Delhi, is a brilliant example of academy-industry interaction and the industrial interface of IIT Delhi. It is involved in converting R&D outputs of IIT Delhi to IP asset and transferring them to industry for wealth creation and establishing research partnership with industry for technology development.²² In the year 2008-2009, it processed 35 IPR applications for filing, and licensed 5 technologies to the industry.²³

4.3.2. Indian Institute of Technology, Bombay (IITB) – The IIT Bombay (IITB) has an extensive IP policy that is applicable to all IITB personnel including faculty and students, and also to non-IITB persons associated with any IITB activity resulting in IP generation.²⁴. The policy domain includes Patent, Copyright, Trade Mark / Service Mark, Design Registration, Trade Secret, Confidential Information and Integrated Circuits Layout.

The IP policy among other things defines the following aspects and lays down clear-cut guidelines for:

- ownership of abovementioned IPs
- Disclosures, Confidentiality and Assignment of Rights
- Assessment of Innovation(s) for Protection
- Support for (a) Contracts and Agreements and (b) Obtaining IPR
- Technology Transfer
- Revenue sharing
- Infringements, Damages, Liability and Indemnity Insurance
- Conflict of Interest, and
- Dispute Resolution

With a few exceptions, IITB becomes the owner of all IPs created at IITB. It also offers a revenue sharing formula by which earnings of commercialisation of IP are shared with the creator(s) or their legal heir(s) annually as follows:

For the first 100 lakhs net earnings, the creator's share will be 70%; for the next 100 lakhs, the share will be 50%, and for earning beyond 200 lakhs, the share will come down to 30%.

The Industrial Research and Consultancy Centre (IRCC) at IIT Bombay is responsible for IP management including administration of the IP policy. It conducts IP awareness programmes for students, faculty and scientists, safeguards IPs generated and markets the technologies developed to the potential users.

The IITB has in the recent past applied for over 50 patents²⁵ and transferred 43 technologies to the industry.²⁶ It has offered over 150 patents/technologies for licensing in diverse fields such as Energy and Environment, Healthcare, ICT, Manufacturing / Chemicals, and others areas.²⁷

a. Copyright Industry

Apart from patents, another very important area of IPR that has a significant influence on Indian creative industries is copyright-related industries such as print publications, cinematographic and television works, music recordings, software, etc. Copyright piracy is the major threat to these industries robbing legitimate copyright holders crores of rupees every year. The size of the Indian creative industries market is enormous. It produces the greatest number of films in the world (2961 films including 1288 full length feature films) and published 79,000 titles in 2009 besides a diverse music market and a booming software market accounting for 5% of the GDP in 2008. According to the International Intellectual Property

Alliance (IIPA),²⁸ nearly 64% of software applications used in India in 2010 were unlicensed and the pirated music reduced the legitimate market by 23% between 2006 and 2009.

The copyright piracy takes the routes of

1. retail piracy in the form of optical discs of music, movies, software, games, etc.
2. business software piracy by corporate houses and individuals amounting to more than USD 1.05 billion loss for US vendors
3. unauthorised camcording of cinema
4. illegal printing of books and journals
5. unauthorised online sharing and downloading of movies, games and software applications through websites
6. underdeclaration of subscriber base by cable operators resulting in a revenue loss of over USD 1 billion in 2009.
7. public performance and video parlours showing films without paying royalty

A reduction of 10% software piracy over 4 years would add USD 4.7 billion to GDP, 512 million in tax revenue and about 60,000 IT jobs.²⁹

Copyright piracy not only causes substantial loss of royalty to the legitimate right holders, but also deprives the government of huge tax revenues and adds to the unaccounted black money that is detrimental to the economic interest of the nation. Besides, it also adversely affects new employment generation.

To tackle the piracy menace, the government has taken the following steps:

- Established the **Copyright Enforcement Advisory Council (CEAC)**³⁰ on November 6, 1991, for awareness building and ensuring the flow of benefits of enforcements to the creator

and the right holder. The CEAC is reconstituted periodically every three years. The current CEAC has been reconstituted on 16th September, 2009 for a period of three years.

The CEAC comprises of Director General Of Police from states like Uttar Pradesh, Andhra Pradesh, Gujarat, Punjab, etc. and representatives from Federation of the Indian Publishers, New Delhi, Authors Guild of India, Federation of Publishers and Booksellers Associations in India, Film Federation of India, National Association of Software Service Companies, Phonographic Performance Limited, Indian Performing Right Society Limited and Cine Artistes Association. The Secretary, Department of Higher Education, Ministry of Human Resource Development and Joint Secretary in charge of Book Promotion and Copyright Division is the Ex-Officio Chairman and Vice Chairman of the CEAC respectively. The CEAC keep holding its meetings regularly. The seriousness of the government for copyright enforcement is reflected in the composition of the committee that comprises of the highest ranking officers of the law enforcement agencies and representatives of various copyright holders' associations.

In the first meeting of the reconstituted CEAC held on 27th April, 2010, it was decided to constitute the following three sub-committees for the following purposes:

- (i) Awareness Building
 - (ii) Issues relating to enforcement and shared experiences of the police officers
 - (iii) Mechanism to ensure that benefits of enforcement flow back to creators and the right holders
- Set up **special cells** in the crime branch at the state level that conduct sudden raids to seize unauthorised or pirated goods, arrest the persons involved and initiate necessary legal proceedings. The States and Union Territories of Assam, Goa, Gujarat, Haryana, Jammu &

Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Rajasthan, Sikkim, Tamil Nadu, West Bengal, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli and Daman & Diu have either set up copyright enforcement cells or special cells in the Crime Branch to look after copyright offence cases.³¹

For better co-ordination among copyright stakeholders and law enforcement agencies, the state governments have designated Nodal officer to deal with enforcement issues. The list of nodal officers is available in Appendix .

- Established the **Copyright Board**, a quasi-judicial body, in September 1958, to resolve disputes related to copyright registration, assignment of copyright, grant of Licences in respect of works withheld from public, unpublished Indian works, production and publication of translations and works for certain specified purposes.³²

Besides, it also hears cases in other miscellaneous matters instituted before it under the Copyright Act, 1957. The meetings of the Board are held in five different zones of the country. This facilitates administration of justice to authors, creators and owners of intellectual property including IP attorney's near their place of location or occupation.

- Amended the **Copyright Act** in 2012. The recent Copyright Amendment Act 2012 has made some significant provisions such as declaring authors as owners of copyright instead of producers as was the practice till now.³³ Now both radio and television broadcasters have to pay mandatory royalty to the owners of the copyright each time a work of art is broadcast.

A cover version is a new performance or recording of a contemporarily or previously published and commercially released work. The Section 31(C) of the amended Copyright Act 2012 bans publishing cover versions of literary, dramatic or musical work for five years from the date of first recording of the original creation.

In addition, it brings cheers to the persons with disabilities by meeting the long-standing demand of waiver of payment of all royalties when the original work is reproduced for them on a non-commercial basis (Section 52(1)(zb)).

- b) **Copyright Societies:** It is generally very difficult for an individual copyright holder to monitor the legitimate and illegal usage of his/her work throughout the country or outside due to lack of resources or infrastructure. To solve this difficulty, individual right holders form a national copyright society that keep a better vigil over the uses made of that work throughout the country and collect due royalties from the users of those works both within the country and in foreign countries through reciprocal agreements with their counterparts in those countries.³⁴

A copyright society is a registered collective administration society under Section 33 of the Copyright Act, 1957. Collective administration of copyright by societies is a concept where management and protection of copyright in works are undertaken by a society of owners of such works. Such a society may issue or grant licences, collect fees and distribute such fees to the right owners.

The following four copyright societies are active in India to take care of the interest of the copyright and related right holders in India:

1. **Society for Copyright Regulation of Indian Producers for Film and Television (SCRIPT), Mumbai** for cinematograph and television films
2. **The Indian Performing Right Society Limited (IPRS), Mumbai** (<http://www.iprs.org/>) for musical works
3. **Phonographic Performance Limited (PPL), Mumbai** (<http://www.pplindia.org/>) for sound recording

4. Indian Reprographic Rights Organization (IRRO), New Delhi
(<http://www.irro.in/>) for reprographic(photo copying) works.

Like patents, copyright may also yield a rich dividend upon expiry. The publishers and others who will exploit the works commercially gain tremendously by saving on royalty that would otherwise have gone to the right holders. The Public also benefit by easy access to copyrighted materials at a price cheaper than the earlier one due to competition among publishers.

In European Union states and Australia, where the copyright protection lasts for 70 years after the author's death, the works of British novelist Virginia Woolf, French essayist Louis Bertrand, Irish sculptor John Hughes, French painter Jean Hippolyte Marchand, Lithuanian composer Jurgis Karnavicius, British artist Harold Harvey and US songwriter Howard Johnson enter the public domain in 2012.³⁵ Interestingly, the works of Indian poet Rabindranath Tagore, who died in 1941, also come into the public domain in these countries, although in India, where the copyright is protected is for 60 years after the life of the author, is available without any copyright tag for 10 years.

In India, copyright for the works of Abanindranath Tagore, a painter and author of children's books and nephew of Rabindranath Tagore, expires in 2012.

On the other hand, not utilising or underutilising the copyright is a tremendous loss to the copyright holder. During the copyright period, Tagore's all works were not available easily to the interested buyers due to lack of sufficient publications. However, soon after the copyright expiry, all his works started appearing in the market freely as all big publishers entered the lucrative market for Tagore's works and satisfied the literary appetite of the intellectual readers.

Publishing a book or photocopying a book for selling without permission of the copyright owner is a punishable offence. Awareness regarding copyright infringement is,

however, slowly growing among the copyright owners as evident in a recent raid at Barddhaman town of West Bengal when the police arrested the owner and a staff of a photocopying shop for illegally photocopying and selling a large number of books of various publishers at a considerably cheaper price, thereby causing pecuniary loss to the publishers by driving them of royalty and the sales profit. The police seized books worth about seven lakh rupees along with two advanced photocopier machines.³⁶

In another incident related to film piracy, the Calcutta High Court stopped the release of the new remake of “Ogo Badhu Sundri”, a blockbuster Bengali film of the eighties, on the scheduled date because of a dispute over the theft of songs and logo between R D Bansal Limited, the producer of the old film, and the defendants DSilva Productions and Rose Valley. The film could be released only after the litigants arrived at a mutually agreeable solution and Dsilva Productions paid royalty for the three songs ‘Ei To Jiban’, ‘Nari Charito’ and ‘Tui Joto Ful Dish Na Keno’ from the original that were used in the new film.³⁷

4.4. Cultural Industries

These are based on individuals with creative art skills, in alliance with managers and technologists, making marketable products, whose economic value lies in their cultural (or “intellectual”) properties. Cultural industries have become one of the fastest growing economies in the industrialized nations like USA and Japan. Walt Disney, the US-based largest entertainment company earned a revenue of \$10.7 billion with a profit of \$1.3 billion.³⁸

Successful Indian examples include Shyam Ahuja’s designer durries and Ritu Kumar’s designer kantha-spread made from ready-to-junk bed coverings. Jodhpur in Rajasthan has taken a lead in the development of cultural industries and every month exports

about 2000 containers of cultural products that include antique doors and windows for modern décor, art objects of brass, iron, silver, glass, marble, papier mache, handloom, tapestries and jewellery.³⁹ This success story points to the immense potential of utilising rich cultural heritage and skills available in India for economic and social upliftment besides preservation and continuation of cultural legacy. Support for cultural industries is now considered as an investment in development and not an expenditure.

Folk music is a part and parcel of life for a large section of Indians, but many folk artistes generally do not get due recognition and monetary advantage. IPs like copyright and related rights can lend a golden touch to the torchbearers of our enormously rich cultural heritage particularly who are unknown and inhabit the remote villages, forests, deserts and mountains. In a path-breaking initiative, De Kulture Music, a Jaipur-based record label company is going to introduce music lovers across the world to the rarely-heard voices and instruments from the corners of India, captured during ‘one-take-only’ performances, using field recording techniques.⁴⁰ Equipped with a mobile studio and a group of videographers, photographers, copywriters and sound directors, it is venturing into the deep interiors of Rajasthan, Gujarat and Punjab in search of local talents from farming and herding communities and recording singers in their own habitat. For example, they have recorded *Swang Nritya*, a dance drama performed during Holi by the Saharia tribe, one of the remaining primitive tribes in Shahbad village of Baran district, Rajasthan. The noteworthy part is that the artistes’ fees range from Rs.5,000 to Rs.50,000 for a single recording, and in addition, they get a royalty of 12 per cent on the sale of every album. So far, 22 albums have been released in the form of CDs through 400 stores across India, and on the website (<http://www.dekulture.com>), with sales grown 400 per cent in last one year. Moreover, the performers will be taken to an international music expo in Greece in October for a business meeting with international agents. This illustrates the fact that the respect of IP and its proper

use can fetch original musicians, singers, and performers, hitherto unknown neglected, their due share of name, fame and money. Not only this, the cultural heritage is preserved from extinction due to threat from spreading urbanization, and recorded for posterity.

4.5. Trade Secrets

Appreciating Trade Secrets as IP and its protection as such are yet to be properly addressed by Indian industries. With increasing technological advancements and ease in networking, Corporate espionage and cyber stealing of data related to R&D, product development, source code, plan documents, etc. are becoming a serious business concern. Corporate houses, however, are generally unwilling to publicise or thoroughly investigate this IP theft because of high cost involved and without much benefit in terms of loss of secret information. Moreover, they fear that publicity will expose their vulnerability to theft and attract other attackers also, besides denting in their brand image and public faith. Employees leaving a company are most likely to take with them secret business plans and other IP data to the rivals.

The following examples of theft of trade secrets will point to the gravity of the situation in India and abroad.

- Data breaches by cyber criminals now cost \$1.2 million per incident compared to \$700,000 million in 2008.⁴¹
- In 2010, UK businesses suffered a loss of £ 21bn out of which £9.2bn were from IP theft, £7.6bn from industrial espionage and £2.2bn from extortion. Pharmaceutical, biotech, IT and chemical companies were the major sufferers.⁴²
- The 2009 India Economic Crime Survey by PriceWaterhouse Coopers (PwC), a leading global consultancy firm, reported IP frauds as 4% of the total reported economic frauds in the corporate sector during the last 12 months, although the

corporate perception of IP infringement in the next 12 months was to the tune of 9% of the total incidents. This shows the alarming growth in the IP fraud expected by the corporate sector.⁴³

- Magus Marketing Private Limited, a Kolkata-based supplier of magnesia carbon brick, suffered an annual loss of about Rs.15 crores due to loss of business. On investigation, the cyber crime branch of Kolkata police found one employee of the company was stealing the customer data and order list and supplying them online in exchange of hefty amount to an ex-employee of Magnus Marketing who had floated his own company at Visakhapatnam in Andhra Pradesh. This company used to offer the customers the same products at a lower price, thereby driving away the customers from Magnus Marketing and causing pecuniary loss to Magnus Marketing. The police subsequently arrested the employee on theft charges of trade secret.⁴⁴

4.6. Traditional Knowledge

The TKDL evidence as prior art has successfully thwarted attempts to take patents on Indian traditional knowledge, leading to the withdrawal of many patent applications, some of which are listed below. Action was taken during June – July, 2009, based on TKDL citations under Third Party observations against 35 Pipe line patent applications at EPO.⁴⁵

1. In July 2009, EPO set aside intention to grant patent on anti-vitiligo cream to Perdix Euro group SL Spain for their application no EP1747786, based on TKDL third party submission and re-opened the case for substantive examination.

2. On August 4, 2009, Uniliver Nv, Netherland have withdrawn their application no [EP1607006](#) for "Functional berry composition" dated 04 August 2009 after submission of TKDL prior art evidence(s).

3. On September 18, 2009, Purimed Co. Ltd. Seoul, Korea have withdrawn their application no [EP1781309](#) for "Nelumbinis semen extract for preventing and treating ischemic heart disease and pharmaceutical composition and health food containing the same"

4. On October 30, 2009, Clara's ApS, Denmark have withdrawn their application no [EP2044850](#) for "Method for altering the metabolism characteristic of food products.

5. On November 20, 2009, Jumpsun Bio-Medicine (Shanghai) Co. Ltd, China have withdrawn their application no. [EP1889638](#) for "Medicaments and food for treatment or prevention of obesity and/or diabetes containing cicer arietinum extract".

6. On November 24, 2009, Amcod Limited, Mombasa, Kenya have withdrawn their application no. [EP1807098](#) for "Herbal compositions for treatment of diabetes".

7. On November 27, 2009, Cognis IP Management GmbH, Germany have withdrawn their application no. [EP1967197](#) for "Use of preparations, purifications and extracts of aloe".

8. On January 17, 2010, Evonik Goldschmidt GmbH, Germany have withdrawn their application no. [EP2065031](#) for "Skin treatment composition".

9. On February 18, 2010, Kapur MBBS, B., Dr. 9 Hilltop Close Maltby, Rotherham South Yorkshire S66 8QF / GB have withdrawn their application no. [EP2090315](#) for "Method and system for producing medicinal alcohol as a prophylactic or remedy for cancer, HIV, AIDS and autoimmune diseases".

10. On March 25, 2010, Natreon Inc. 2-D Janine Place New Brunswick, NJ 08901 / US have withdrawn their application no. [EP1906980](#) for "Method of treatment or management of stress".

11. On April 6, 2010, Avesthagen Limited Unit 3, Discoverer, 9th Floor International Tech Park Whitefield Road Bangalore 560 066 / IN have withdrawn their application

no. [EP1660106](#) for "Biotherapeutics for Mitigation of health Disorders from Terminalia Arjuna".

12. On April 8, 2010, Jan Marini Skin Research Inc. 6951 Via del Oro San Jose, California 95119 / US have withdrawn their application no. [EP1825845](#) for "Cosmetic herbal compositions".

13. On April 15, 2010, Naveh Pharma (1996) Ltd. P.O. Box 8139 42505 Netanya / IL2009/04] have withdrawn their application no. [EP2015761](#) for "Methods and composition for treating sore throat".

Agreements with various patent offices to consider TKDL information as evidence of 'prior art' have made a significant effect on the patent applications filed in these offices as evident from the Table No.

Table 11: TKDL Outcome Against Bio-Piracy

IP Office	Effects	No. of applications	Period	Final Outcome
European Patent Office	Setting aside of decisions to grant patents / Cancellation of intent to grant patent	2	2009	1 application closed
	Patent Applications Withdrawn	53	04.08.2009 – 11.06.2012	42 applications closed
	Amendment / Modification of Claims	15	10.06.2010 – 01.08.2011	claims of 15 applications amended
Canadian Intellectual Property Office (CIPO)	Applications Declared 'Dead'	15	28.02.2011 – 26.04.2012	
Intellectual Property Australia	Amendment / Modification of Claims	2	20.01.2011 – 03.07.2012	claims of 2 applications amended
	Patent Applications Withdrawn	1	2011	
United States Patent and Trademark Office (USPTO)	claims rejected / cancelled	1	2010	Claims amended
	Amendment / Modification of Claims	4	15.07.2011 – 26.04.2012	Claims of 4 applications amended
	Claims Rejected	3	06.01.2012 – 13.04.2012	
United Kingdom Patent and Trademark Office (UKPTO)	Application(s) Terminated	1	2011	Application terminated before grant

4.7 Trademark

"If this business were split up, I would give you the land and bricks and mortar, and I would take the brands and trademarks, and I would fare better than you."

— John Stuart, Chairman of Quaker (1900)

The above statement aptly captures the importance of trademark in business parlour. Trademark has business importance because of the brand value it is associated with. People are willing to pay more for a brand than just a product or service. Brand value is the extra money a company can make from its products or service solely because of its brand name. The owner of a well-known brand name can generate more money from products with that brand name than from products with a less well known name, as consumers believe that a product with a well-known name is better than products with less well known names. In fact, brands are one of the most valuable assets a company has. Consumers' knowledge about a brand also governs how manufacturers and advertisers market the brand.

The following examples show how businesses reap the benefit of their brand value during transactions like intangible asset-based lending by securitising their IP, apart from a premium on their products or services.

- New Delhi-based LT Foods (earlier called LT Overseas) used its Daawat brand of packaged rice as collateral to raise debt for its \$50 million (Rs 200 crore) acquisition of US-based rice firm Kusha Inc.⁴⁷
- Walt Disney used its brand value in 1988 in the Japanese market to raise as much as \$725 million.
- Kingfisher Airlines, registered as a brand with the trademark office, raised USD420 million from brand value in 2009 which was pegged at USD 750 million (Rs.3,406 crores).⁴⁸ In a dramatic turn, now beleaguered financially and

over-burdened with debts and losses, its lenders have asked it to reassess the value of its brand given as collateral as against some loans in 2010.⁴⁹

- The battle over the trademark ‘Financial Times’ between the British newspaper Financial Times UK (FTUK) and Indian company Times Publishing House Limited (TPH) took a dramatic turn when India’s Intellectual Property Appellate Board (IPAB) cancelled the trademark registered by both the companies.⁵⁰ For TPH, it was the dishonest method of registration even after knowing the existence of this mark as registered and in use in India, while the reason for cancellation of FTUK’s mark was a mistake on date when it claimed continuous use of the mark since 1948 although the evidence suggested the use since 1951. The cancellation has, however, been stayed pending appeal.
- The Brand Names Education Foundation (BNEF), USA, estimates that brand counterfeiting is a \$60 billion industry worldwide, costing legitimate manufacturers 130,000 jobs annually.⁵¹

CHAPTER 5

INTELLECTUAL PROPERTY AND KNOWLEDGE

CREATION IN INDIA

Although the IP regime was introduced by the British way back in 1856 through the Act VI of 1856 on Protection of Inventions based on the British Patent Law of 1852, an IP culture did not develop and take a strong root in India like that in other countries like United Kingdom, United States of America, etc. Only recently in the last two decades, IP awareness has gradually started to develop and spread through a series of measures taken both by the government and the private industrial sector. These are highlighted below.

- The process of economic liberalisation and opening up of the Indian economy began in the 1990s.
- With the signing of the GATT agreement, India joined the World Trade Organisation on January 1, 1995. This became a landmark event in the development of a modern IP regime in India.
- Under the Trade-Related Aspects of Intellectual Property Rights (TRIPS) obligations, the government amended the existing IP acts for patent, trademark, design and copyright, and enacted new acts for geographical indication, layout design of semiconductor integrated circuits and pharmaceutical data protection. This has already been referred to in Table

- In 2002, the Council of Scientific and Industrial Research (CSIR), the leading government-funded R&D organisation in India, embarked upon a massive project to document the vast resources of traditional Indian knowledge.
- The Report of the Committee on Technology Innovation and Venture Capital, Planning Commission, July 2006, laid much stress on academy-industry relationships in the context of knowledge management and IPR portfolio building.
- The National Knowledge Commission (NKC), an advisory body to the Government of India to prepare the roadmap to launch India into the knowledge-based economy, identified IPRs as an indispensable strategic tool in today's knowledge economies and stressed on
 - The development of legal IPR framework for protection and enforcement
 - Availability of accurate and detailed ready-to-use IPR information, and
 - The development of a vibrant IPR culture in the process of knowledge creation, application and dissemination, all integrated with market demand and rewards.
- In his letter to the Honourable Prime Minister Dr. Manmohan Singh, dated October 15, 2007, Shri Sam Pitroda, Chairman, NKC, recommended
 - The modernisation of IP offices
 - Incentive mechanisms to attract and retain quality talent
 - Training and human resources development for IP offices
 - IPR education and development of IPR cells in R&D organisations, universities, industry and the bar
 - Establishment of a new institution for cutting-edge policy expertise for IPR capacity building. A National Institute of Intellectual Property Management (NIIPM) based in New Delhi would be engaged in training, cutting-edge research,

serve as a think tank to advise the government on IPR issues, and create public awareness on IPR.

- The Steering Committee on Science and Technology for Eleventh five year Plan (2007-2012) in its report, under the head Programme for Promotion of Excellence and Innovation, proposed
 - a 50% increase in Outlay for IPR facilitation and IPR awareness, from Rs.400.00 crores to Rs.600 crores.
 - The new initiatives under Techno Management and IPR capacity building include setting up a National Technology Management Centre with network of local centres and a Centre for Appropriate Technologies and Delivery.
- The Indian Institute of Technologies (IITs), the world-renowned technology and research institutes, have formed well-defined IP policies. With assistance from the Department of Science and Technology (DST), IITs have set up Enterprise Incubation Units to transfer knowledge created in the laboratory to the industry by protecting and marketing commercially valuable intellectual property, besides helping in entrepreneurship development.
- The University Grants Commission (UGC) has set up a framework for financing registration of IPRs that come out of various university departments in the country.
- To emphasise the importance of IP in knowledge generation, the UGC has recently recommended the inclusion of IP registered by the faculty member in the ACR for evaluation for promotion.
- In scientific institutions and organisations of Government of India (GoI) also, IP has been included as an important parameter under the S&T promotion scheme.

- The Mashelkar Committee Report suggested expansion of patentability criteria to micro-organisms and incremental inventions in pharmaceutical products in full compliance with TRIPS obligations.
- From the above discussions, it is clear that IP has been highly regarded as an indispensable part and also the outcome of knowledge generation activities in the country.

5.1. Geographic Indications (GI)

- The importance of GI as IP has been felt relatively late compared to other better known IPs. Its presence is conspicuous in our daily lives as food items we consume, dresses we wear or decorative items and other such products. Food items particularly touch upon our daily life. However we often do not recognise the loss we suffer when we consume fake or adulterated food items sold in the market in the name of famous ones with GI tags.
- The Darjeeling tea, the most famous and the first product to get the Indian GI tag, has an annual production of around 10,000 tonnes. Yet in the global market, more than 40,000 tonnes of tea are sold as Darjeeling tea.⁵² This spurious tea damages the reputation of Darjeeling tea, deceives the consumer and causes pecuniary loss to the original Darjeeling tree growers.
- We are all familiar with famous food items associated with particular places sold in the shops, buses, trains and other public places but without any quality assurance. For example, Moa, a sweet dish prepared in Jaynagar, a town and municipality in the district of South 24 Parganas, West Bengal, India, is very famous for its taste and quality. Moa, branded as prepared in Jaynagar, is sold throughout South Bengal even if when it is prepared locally or somewhere else other than Jaynagar. Thousands purchase this sweet daily and rue over the quality.

This is possible because awareness about this GI is lacking among both the manufacturers and customers, and moreover there is no preventing mechanism in place that can deter the selling of fake Maa. Sitabhog and Mihidana, two popular sweets associated with the town of Bardhaman, West Bengal, meet the same fate among its users. It is very difficult to determine the amount of monetary loss the actual GI holders suffer daily in these cases.

- Although the Tea Board of India, a statutory body under the Ministry of Commerce and Industry, Government of India, has taken the initiative to protect the GI quality reputation of Darjeeling tea by introducing certification mark for it,⁵³ but for other GIs like sweets mentioned above, there are little such initiatives. The need of the hour, therefore, is to raise awareness about GIs, especially about common GI products used daily by thousands, introduce standards and certification system for ensuring quality in the larger interests of both the producers as well as consumers and build a preventing mechanism against misuse.

5.2 Traditional Knowledge

One of the most glorious achievements in the Indian context has been the development of a Traditional Knowledge Digital Library (TKDL) and making this available online at <http://www.tkdil.res.in/>.

- Initiated in 2001, TKDL is a collaborative project of:
 - The Council of Scientific and Industrial Research (CSIR)
 - The Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry of Health and Family Welfare

- The Department of Industrial Policy and Promotion (DIPP) in the Ministry of Commerce and Industry.
 - The project was completed in 2008.
 - The remarkable features of TKDL include:
 - Data on 65,000 formulations in Ayurveda
 - Data on 70,000 formulations in Unani
 - Data on 3,000 formulations in Siddha
 - Data on 1,500 postures of Yoga
 - The entire database is available in 5 languages – English, German, French, Spanish and Japanese.
 - Till July 2012, 150 text books including volumes on Ayurveda, Unani, Siddha and Yoga were used for transcription and more than 2.5 lakh traditional medicine formulations have been transcribed.

Tabel 12. Status of Traditional Knowledge Digital Library

<u>Discipline</u>	<u>NO. OF TEXTS (INCLUDING VOLUMES) USED FOR TRANSCRIPTION</u>	<u>Transcribed</u>
Ayurveda	75 books	91,477
Unani	10 books	1,39,856
Siddha	50 books	18,585
Yoga	15 books	1,470
Total	150 books	2,54,388

This documented repository of Indian traditional knowledge has helped tremendously in protecting the ancient Indian knowledge and practices from exploitation in the form of bio-piracy and unethical patents.

The importance and popularity of the TKDL can be gauged from the fact that leading patent offices have sought permission to access this digital library for examining patent applications. Under access agreement, permission has been granted to

- Japan Patent Office (JPO) in April 2011
- Intellectual Property Australia (IP Australia) in January 2011
- Canadian Intellectual Property Office (CIPO) in September 2010
- United Kingdom Intellectual Property Office (UKIPO) in February 2010
- United States Patent and Trademark Office (USPTO) in November 2009
- German Patent and Trademark Office (DPMA) in October 2009
- Comptroller General of Patents, Designs and Trade Marks (Indian Patent Office) in July 2009 and
- European Patent Office in February 2009

5.3 INNOVATION INDEX

The Global Innovation Index (GII) is a report that ranks more than 100 countries on the basis of their innovation capabilities and results. The GII 2012 has been jointly released by France-based international business school INSEAD and World Intellectual Property Organisation (WIPO) along with the Confederation of Indian Industry (CII), Alcatel-Lucent and Booz and Company as knowledge partners.

The GII 2012 report covers 140 economies accounting for 94.9% of the world's population and 99.4% of the world's Gross Domestic Product (in current US dollars).

The top 10 leaders in the overall Global Innovation Index 2012 are

1. Switzerland
2. Sweden
3. Singapore
4. Finland
5. United Kingdom
6. Netherlands
7. Denmark
8. Hong Kong (China)
9. Ireland
10. United States of America

India ranked 64th in the overall index, down from the 62nd position last year. However, in the Global Innovation Efficiency Index that shows the countries best in transforming given innovation inputs into innovation outputs, India improved its position from 9th position in 2011 to 2nd in 2012 in innovation efficiency.

The Top 10 in the Global Innovation Efficiency Index 2012 are-

1. China
2. India
3. Republic of Moldova
4. Malta
5. Switzerland
6. Paraguay
7. Serbia
8. Estonia
9. Netherlands
10. Sri Lanka

The GII 2012 is calculated as the average of two sub-indices and the Innovation Efficiency Index is the ratio of the two sub-indices, the Innovation Input Sub-Index gauges elements of the national economy which embodies innovative activities grouped in five pillars: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication. The Innovation Output Sub-Index captures actual evidence of innovation results, divided in two pillars: (6) Knowledge and technology outputs and (7) Creative outputs.

CONCLUSION :

Post-GATT agreement, India has taken various administrative, legal and business measures to spread the awareness about Intellectual Property Rights and its importance among government officers, legislatures, scientists, researchers, business community, industry and general public. In compliance with the TRIPS, existing laws relating to patents, copyright, trademarks and designs have been amended from time to time. New laws have been introduced for other lesser known IPs like Geographical Indications, Data exclusivity, Farmers Rights and Biodiversity while Traditional Knowledge as an important IP has been well recognised and documented. In an integrated global economy, IP has emerged as an important and essential tool with immense economical, industrial and political ramifications for India at both national and international level. The government departments, R&D organisations, academic institutions and industry associations have joined hands to catapult India into an IP powerhouse.

The fruits of all IP initiatives have been evident in the increasing number of patents, trademarks and design applications filed and granted every year. Contrary to initial apprehensions, Indian industry has benefited in the new IP regime and discovered new business potential at the international level and the need to generate new IPs and protect them against infringement. The pharmaceutical industry has successfully tapped the lucrative generic or off-patent drugs markets for manufacturing and export while the TKDL has prevented bio-piracy of Indian traditional medicine formulations by western companies. Creative industries like film, music and publishing industries will tremendously benefit by a proper monitoring mechanism and legal deterrents against piracy and pecuniary loss besides creating new employment opportunities promoting the local and national economy. Introduction of utility models system will stimulate the creative instincts in the small and

medium scale sector. In all these endeavours for transformation, Effective management and dissemination of intellectual property information among stakeholders will play the pivotal role.

Intellectual property is the currency of the new age. To be IP rich, IP education supported by an enabling innovation ecosystem is of paramount importance. At present mainly at the post graduate level, such as in legal courses, IP is taught as a subject. But as IP is increasingly recognised as influencing our every day life and activities, along with the penetration of internet in our life, we have become more exposed to the use and misuse of IP. This necessitates starting IP education at the school level itself and making IP a compulsory subject in the line of environmental studies at subsequent levels of education.

Our IP potential is largely untapped. An IP savvy nation of more than one billion minds, when materialised, can do wonders in the world arena to raise our living standards, ensure economic prosperity and boost self confidence.

SUGGESTIONS :

The objective of the Intellectual Property is to transform India into an innovative economy as would reflect in high rankings in appropriate development and innovation indices from a global standpoint and develop, sustainable and innovation-promoting IPR management system in India while ensuring that the IP system continues to have the appropriate checks and balances conducive to social and economic welfare, and to a balance of rights and obligations. Besides measures that need to be taken, the strategy also needs to have an implementation matrix and a time bound schedule. The aforementioned objectives are proposed to be addressed through the following four-pronged approach:-

1. Promoting respect for Intellectual Property and stimulating creation of IP Rights.
2. Creation of new IP regimes to address the specific needs of the country and the existing gaps.
3. Strengthening protection of Intellectual Property.
4. Facilitating commercialization of Intellectual Property.

The IP strategy should outline the various facilitative measures that need to be taken by the Government to stimulate creation of IPRs, its protection and management as also its commercialization. It includes development of associated infrastructure and capacities to support innovators and creators of IP and for utilization of knowledge based resources.

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