

Management of Intellectual Property Rights in India

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1.0 Introduction

With the advent of the new knowledge economy, the old and some of the existing management constructs and approaches would have to change. The knowledge economy places a tag of urgency on understanding and managing knowledge based assets such as innovations and know-how. The time for grasping knowledge has become an important parameter for determining the success of an institution, enterprise, government and industry; the shorter the time better are the chances of success. Intellectual property rights (IPR) have become important in the face of changing trade environment which is characterized by the following features namely global competition, high innovation risks, short product cycle, need for rapid changes in technology, high investments in research and development (R&D), production and marketing and need for highly skilled human resources. Geographical barriers to trade among nations are collapsing due to globalisation, a system of multilateral trade and a new emerging economic order. It is therefore quite obvious that the complexities of global trade would be on the increase as more and more variables are introduced leading to uncertainties. Many products and technologies are simultaneously marketed and utilized in many countries. With the opening up of trade in goods and services intellectual property rights (IPR) have become more susceptible to infringement leading to inadequate return to the creators of knowledge. Developers of such products and technologies would like to ensure R&D costs and other costs associated with introduction of new products in the market are recovered and enough profits are generated for investing in R&D to keep up the R&D efforts. One expects that a large number of IP rights would be generated and protected all over the world including India in all areas of science and technology, software and business methods.

More than any other technological area, drugs and pharmaceuticals match the above description most closely. Knowing that the cost of introducing a new drug into the market may cost a company anywhere between \$ 300 million to \$600 million along with all the associated risks at the developmental stage, no company will like to risk its intellectual property becoming a public property with out adequate returns. Creating, obtaining, protecting and managing intellectual property must become a corporate activity in the same manner as the raising of resources and funds. The knowledge revolution will demand a special pedestal for intellectual property and treatment in the overall decision- making process. It is also important to realize that each product is amalgamation of many different areas of science and technologies. In the face of the competition being experienced by the global community, many industries are joining hands for sharing their expertise in order to respond to market demands quickly and keeping the prices competitive. In order to maintain a continuous stream of new ideas and experimentations, public private partnership in R&D would need to be nurtured to arrive at a win-win situation. Therefore all publicly funded institutions and agencies will have to come to terms with the new ground realities and take positive steps to direct research suitably to generate more intellectual property rights, protect and manage them efficiently.

2.0 Intellectual Property Rights (IPR)

Intellectual property rights as a collective term includes the following independent IP rights which can be collectively used for protecting different aspects of an inventive work for multiple protection:-

Patents

Copyrights

Trademarks

Registered (industrial) design

Protection of IC layout design,

Geographical indications, and

Protection of undisclosed information

3.0 Nature of Intellectual Property Rights

IPR are largely territorial rights except copyright, which is global in nature in the sense that it is immediately available in all the members of the Berne Convention. These rights are awarded by the State and are monopoly rights implying that no one can use these rights without the consent of the right holder. It is important to know that these rights have to be renewed from time to time for keeping them in force except in case of copyright and trade secrets. IPR have fixed term except trademark and geographical indications, which can have indefinite life provided these are renewed after a stipulated time specified in the law by paying official fees. Trade secrets also have an infinite life but they don't have to be renewed. IPR can be assigned, gifted, sold and licensed like any other property. Unlike other moveable and immoveable properties, these rights can be simultaneously held in many countries at the same time. IPR can be held only by legal entities i.e., who have the right to sell and purchase property. In other words an institution, which is not autonomous may not in a position to own an intellectual property. These rights especially, patents, copyrights, industrial designs, IC layout design and trade secrets are associated with something new or original and therefore, what is known in public domain cannot be protected through the rights mentioned above. Improvements and modifications made over known things can be protected. It would however, be possible to utilize geographical indications for protecting some agriculture and traditional products.

4.0 Patents

A patent is an exclusive right granted by a country to the owner of an invention to make, use, manufacture and market the invention, provided the invention satisfies certain conditions stipulated in the law. Exclusive right implies that no one else can make, use, manufacture or market the invention without the consent of the patent holder. This right is available for a limited period of time. In spite of the ownership of the rights, the use or exploitation of the rights by the owner of the patent may not be possible due to other laws of the country which has awarded the patent. These laws may relate to health, safety, food, security etc. Further, existing patents in similar area may also come in the way. A patent in the law is a property right and hence, can be gifted, inherited, assigned, sold or licensed. As the right is conferred by the State, it can be revoked by the State under very special circumstances even if the patent has been sold or licensed or manufactured or marketed in the meantime. The patent right is territorial in nature and inventors/their assignees will have to file separate patent applications in countries of their

interest, along with necessary fees, for obtaining patents in those countries. A new chemical process or a drug molecule or an electronic circuit or a new surgical instrument or a vaccine is a patentable subject matter provided all the stipulations of the law are satisfied.

4.1 The Indian Patent Act¹

The first Indian patent laws were first promulgated in 1856. These were modified from time to time. New patent laws were made after the independence in the form of the Indian Patent Act 1970. The Act has now been radically amended to become fully compliant with the provisions of TRIPS. The most recent amendment were made in 2005 which were preceded by the amendments in 2000 and 2003. While the process of bringing out amendments was going on, India became a member of the Paris Convention, Patent Cooperation Treaty and Budapest Treaty. The salient and important features of the amended Act are explained here.

4.2 Definition of invention

A clear definition has now been provided for an invention, which makes it at par with definitions followed by most countries. Invention means a new product or process involving an inventive step and capable of industrial application. New invention means any invention or technology which has not been anticipated by publication in any document or used in the country or elsewhere in the world before the date of filing of patent application with complete specification i.e., the subject matter has not fallen in public domain or it does not form part of the state of the art.

Inventive step means a feature of an invention that involves technical advance as compared to existing knowledge or having economic significance or both and that makes the invention not obvious to a person skilled in the art.

"capable of industrial application means that the invention is capable of being made or used in an industry"

4.2.1 Novelty

An invention will be considered novel if it does not form a part of the global state of the art. Information appearing in magazines, technical journals, books, newspapers etc. constitute the state of the art. Oral description of the invention in a seminar/conference can also spoil novelty. Novelty is assessed in a global context. An invention will cease to be novel if it has been disclosed in the public through any type of publications anywhere in the world before filing a patent application in respect of the invention. Therefore it is advisable to file a patent application before publishing a paper if there is a slight chance that the invention may be patentable. Prior use of the invention in the country of interest before the filing date can also destroy the novelty. Novelty is determined through extensive literature and patent searches. It should be realized that patent search is essential and critical for ascertaining novelty as most of the information reported in patent documents does not get published anywhere else. For an invention to be novel, it need not be a major breakthrough. No invention is small or big. Modifications to the existing state of the art, process or product or both, can also be candidates for patents provided these were not

earlier known. In a chemical process, for example, use of new reactants, use of a catalyst, new process conditions can lead to a patentable invention.

4.2.2 Inventiveness (Non-obviousness)

A patent application involves an inventive step if the proposed invention is not obvious to a person skilled in the art i.e., skilled in the subject matter of the patent application. The prior art should not point towards the invention implying that the practitioner of the subject matter could not have thought about the invention prior to filing of the patent application. Inventiveness cannot be decided on the material contained in unpublished patents. The complexity or the simplicity of an inventive step does not have any bearing on the grant of a patent. In other words a very simple invention can qualify for a patent. If there is an inventive step between the proposed patent and the prior art at that point of time, then an invention has taken place. A mere 'scintilla' of invention is sufficient to found a valid patent. It may be often difficult to establish the inventiveness, especially in the area of up coming knowledge areas. The reason is that it would depend a great deal on the interpretative skills of the inventor and these skills will really be a function of knowledge in the subject area.

4.2.3 Usefulness

An invention must possess utility for the grant of patent. No valid patent can be granted for an invention devoid of utility. The patent specification should spell out various uses and manner of practicing them, even if considered obvious. If you are claiming a process, you need not describe the use of the compound produced thereby. Nevertheless it would be safer to do so. But if you claim a compound without spelling out its utility, you may be denied a patent.

4.3 Non patentable inventions

An invention may satisfy the conditions of novelty, inventiveness and usefulness but it may not qualify for a patent under the following situations:

- (i) An invention which is frivolous or which claims anything obviously contrary to well established natural laws e.g. different types of perpetual motion machines.
- (ii) An invention whose intended use or exploitation would be contrary to public order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment e.g., a process for making brown sugar will not be patented.
- (iii) The mere discovery of a scientific principle or formulation of an abstract theory e.g., Raman effect and Theory of Relativity cannot be patented.
- (iv) The mere discovery of a new form of a known substance which does not result in enhancement of the known efficacy of that substance or the mere discovery of any new property or new use of a known substance or the mere use of a known process, machine or apparatus unless such a known process results in a new product or employs at least one new reactant. For the purposes of this clause, salts, esters, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and other derivatives of known substance shall be considered to be the same substance unless they differ significantly in properties with regard to efficacy.
- (v) A substance obtained by a mere admixture resulting only aggregation of the properties of the components thereof or a process for producing such substance.

- (vi) The mere arrangement or rearrangement or duplication of features of known devices each functioning independently of one another in a known way. If you put torch bulbs around an umbrella and operate them by a battery so that people could see you walking in rain when it is dark, then this arrangement is patentable as bulbs and the umbrella perform their functions independently.
- (vii) A method of agriculture or horticulture. For example, the method of terrace farming cannot be patented.
- (viii) Any process for medical, surgical, curative, prophylactic, diagnostic, therapeutic or other treatment of human beings, or any process for a similar treatment of animals to render them free of disease or to increase economic value or that of their products. For example, a new surgical technique for hand surgery for removing contractions is not patentable.
- (viii) Inventions relating to atomic energy;
- (ix) Discovery of any living thing or non-living substance occurring in nature;
- (x) Mathematical or business methods or a computer program per se or algorithms;
- (xi) Plants and animals in whole or any part thereof other than microorganisms but including seeds, varieties and species and essentially biological processes for production and propagation of plants and animals;
- (xii) A presentation of information;
- (xiii) Topography of integrated circuits;
- (xiv) A mere scheme or rule or method of performing mental act or method of playing games;
- (xv) An invention which, in effect, is traditional knowledge or which is aggregation or duplication of known component or components.

Computer program per se as such has not been defined in the Act but would generally tend to mean that a computer program with out any utility would not be patentable. Protection of seeds and new plant varieties is covered under a different Act, which provides a protection for a period of 10 years. Similarly, topography of integrated circuits is protected through yet a different Act.

4.4 Term of the patent

Term of the patent will be 20 years from the date of filing for all types of inventions.

4.5 Application

In respect of patent applications filed, following aspects will have to be kept in mind:-

- Claim or claims can now relate to single invention or group of inventions linked so as to form a single inventive concept
- Patent application will be published 18 months after the date of filing
- Applicant has to request for examination 12 months within publication or 48 months from date of application, whichever is later

No person resident in India shall, except under the authority of a written permit sought in the manner prescribed and granted by or on behalf of the Controller, make or cause to be made any application outside India for the grant of a patent for an invention unless (a) an application for a patent for the same invention has been made in India, not less than six weeks before the

application outside India; and (b) either no direction has been given under the secrecy clause of the Act or all such directions have been revoked.

4.6 Provisional Specification

A provisional specification is usually filed to establish priority of the invention in case the disclosed invention is only at a conceptual stage and a delay is expected in submitting full and specific description of the invention. Although, a patent application accompanied with provisional specification does not confer any legal patent rights to the applicants, it is, however, a very important document to establish the earliest ownership of an invention. The provisional specification is a permanent and independent scientific cum legal document and no amendment is allowed in this. No patent is granted on the basis of a provisional specification. It has to be followed by a complete specification for obtaining a patent for the said invention. Complete specification must be submitted within 12 months of filing the provisional specification. This period can be extended by 3 months. It is not necessary to file an application with provisional specification before the complete specification. An application with complete specification can be filed right at the first instance.

4.7 Complete Specification

It may be noted that a patent document is a techno-legal document and it has to be finalized in consultation with an attorney. Submission of complete specification is necessary to obtain a patent. Contents of a complete specification would include the following

1. Title of the invention.
2. Field to which the invention belongs .
3. Background of the invention including prior art giving drawbacks of the known inventions & practices.
4. Complete description of the invention along with experimental results.
5. Drawings etc. essential for understanding the invention.
6. Claims, which are statements, related to the invention on which legal proprietorship is being sought. Therefore the claims have to be drafted very carefully.

4.8 Compulsory license

Any time after three years from date of sealing of a patent, application for compulsory license can be made provided

1. reasonable requirements of public have not been met
2. patented invention is not available to public at a reasonably affordable price
3. patented invention is not worked in India

among other things, reasonable requirements of public are not satisfied if working of patented invention in India on a commercial scale *is being prevented or hindered by importation* of patented invention.

Applicant's capability including risk taking, ability of the applicant to work the invention in public interest, nature of invention, time elapsed since sealing, measures taken by patentee to work the patent in India will be taken into account. In case of national emergency or other circumstances of extreme urgency or public non commercial use or an establishment of a ground of anti competitive practices adopted by the patentee, the above conditions will not apply.

A patentee must disclose the invention in a patent document for anyone to practice it after the expiry of the patent or practice it with the consent of the patent holder during the life of the patent.

4.9 Patenting of microbiological inventions

The Indian Patent Act has now a specific provision in regard to patenting of microorganisms and microbiological processes. It is now possible to get a patent for a microbiological process and also products emanating from such processes.

As it is difficult to describe a microorganism on paper, a system of depositing strain of microorganisms in some recognized depositories was evolved way back in 1949 in USA. An international treaty called "Budapest Treaty" was signed in Budapest in 1973 and later on amended in 1980. India became a member of this Treaty, with effect from December 17, 2001. This is an international convention governing the recognition of deposits in officially approved culture collections for the purpose of patent applications in any country that is a party to this treaty. Because of the difficulties and virtual impossibility of reproducing a microorganism from a description of it in a patent specification, it is essential to deposit a strain in a culture collection centre for testing and examination by others.

An inventor is required to deposit the strain of a microorganism in a recognized depository, which assigns a registration number to the deposited microorganism. This registration number needs to be quoted in the patent application dealing with the microorganism. Obviously a strain of microorganism is required to be deposited before filing a patent application. It may be observed that this mechanism obviates the need of describing a microorganism in the patent application. Further, samples of strains can be obtained from the depository for further working on the patent. There are many international depositories in different countries such as ATCC, DSM etc. which are recognized under the Budapest Treaty. The Institute of Microbial Technology(IMTEC), Chandigarh is the first Indian depository set up under the Budapest Treaty.

4.10 Mail box provision

TRIPS requires that countries, not providing product patents in respect of pharmaceuticals and chemical inventions have to put in a mechanism for accepting product patent applications with effect from 1 January 1995. Such applications will only be examined for grant of patents, after suitable amendments in the national patent law have been made. This mechanism of accepting product patent applications is called the "mail box" mechanism. This system has been in force in India and now such applications are being taken up for examination.

4.11 Exclusive Marketing Right

TRIPS requires that member countries of the WTO not having provision in their laws for granting product patents in respect of drugs and agrochemical, must introduce Exclusive Marketing Rights (EMR) for such products, if the following criteria are satisfied:

1. A patent application covering the new drug or agrochemical should have been filed in any of the WTO member countries after 1 January 1995;
2. A patent on the product should have been obtained in any of the member countries (which provides for product patents in drugs and agrochemical) after 1 January 1995;
3. Marketing approvals for the product should have been obtained in any of the member countries;
4. A patent application covering the product should have been filed after 1 January 1995 in the country where the EMR is sought;
5. The applicant should apply seeking an EMR by making use of the prescribed form and paying requisite fee.

EMR is only a right for exclusive marketing of the product and is quite different from a patent right. It is valid up to a maximum period 5 years or until the time the product patent laws come into effect. The necessary amendment to: the Patents Act, 1970 came into force on 26 March 1999. The provision is applicable with retrospective effect from 1 January 1995. As per the 2005 amendments in the Patents Act, the provision of EMR is no longer required. However, These rights were awarded in India from time to time and there have been some litigations as well where the courts came up with quick decisions.

4.12 Timing for filing a patent application

Filing of an application for a patent should be completed at the earliest possible date and should not be delayed. An application filed with provisional specification, disclosing the essence of the nature of the invention helps to register the priority by the applicant. Delay in filing an application may entail some risks like (i) other inventors might forestall the first inventor by applying for a patent for the said invention, and (ii) there may be either an inadvertent publication of the invention by the inventor himself/herself or by others independently of him/her. Publication of an invention in any form by the inventor before filing of a patent application would disqualify the invention to be patentable. Hence, inventors should not disclose their inventions before filing the patent application. The invention should be considered for publication after a patent application has been filed. Thus, it can be seen that there is no contradiction between publishing an inventive work and filing of patent application in respect of the invention.

5.0 Protecting new plant variety²

New plant varieties can now be protected in India under the New Plant Variety and Farmers Rights Protection Act in 2001. New plant varieties cannot be protected through patents. However, the Act has not become operational as subsidiary legislation is yet to be put in place. India has enacted the which, in addition to meeting the technical features of UPOV, provides rights to farmers to use the seeds from their own crops for planting the next crop. Further, there are provisions for benefit sharing with farmers, penalty for marketing spurious propagation material and protecting extant varieties. There is a provision for protecting extant variety and farmers' varieties as well. The total period for protection is 10 years from the date of registration.

There are 5 main criteria to arrive at a decision whether a plant variety is really new or not. These are distinctiveness, uniformity, stability, novelty and denomination. The variety shall be deemed to be distinct if it is clearly distinct from any other variety whose existence is a matter of common knowledge at the time of filing of the application. The variety shall be deemed to be uniform if, subject to the variation that may be accepted from the particular features of its propagation, it is sufficiently uniform in its relevant characteristics. The variety shall be deemed to be stable if its relevant characteristics remain unchanged after repeated propagation or, in the case of a particular cycle of propagation at the end of each such cycle. The variety shall be deemed to be new if, at the date of filing of the application for breeders right, propagating or harvesting material of the variety has not been sold or otherwise disposed of to others, by or with the consent of the breeder for the purpose of exploitation of the variety. The variety shall be designated by a denomination, which will be its generic designation. The premise that the variety denomination must be its generic designation class for a requirement that 'denomination must enable the variety to be identified.

6.0 Copyrights³

Copyright is a right, which is available for creating an original literary or dramatic or musical or artistic work. Cinematographic films including sound track and video films and recordings on discs, tapes, perforated roll or other devices are covered by copyrights. Computer programs and software are covered under literary works and are protected in India under copyrights. The Copyright Act, 1957 as amended in 1983, 1984, 1992, 1994 and 1999 governs the copyright protection in India. The total term of protection for literary work is the author's life plus sixty years. For cinematographic films, records, photographs, posthumous publications, anonymous publication, works of government and international agencies the term is 60 years from the beginning of the calendar year following the year in which the work was published. For broadcasting, the term is 25 years from the beginning of the calendar year following the year in which the broadcast was made.

Copyright gives protection for the expression of an idea and not for the idea itself. For example, many authors write textbooks on physics covering various aspects like mechanics, heat, optics etc. Even though these topics are covered in several books by different authors, each author will have a copyright on the book written by him / her, provided the book is not a copy of some other book published earlier. India is a member of the Berne Convention, an international treaty on copyright. Under this Convention, registration of copyright is not an essential requirement for protecting the right. It would, therefore, mean that the copyright on a work created in India would be automatically and simultaneously protected through copyright in all the member countries of the Berne Convention. The moment an original work is created, the creator starts enjoying the copyright. However, an undisputable record of the date on which a work was created must be kept. When a work is published with the authority of the copyright owner, a notice of copyright may be placed on publicly distributed copies. The use of copyright notice is optional for the protection of literary and artistic works. It is, however, a good idea to incorporate a copyright notice. As violation of copyright is a cognizable offence, the matter can be reported to a police station. It is advised that registration of copyright in India would help in establishing the ownership of the work. The registration can be done at the Office of the Registrar of Copyrights in New Delhi. It is also to be noted that the work is open for public inspection once the copyright is registered.

Computer program in the Copyright Act has been defined as a set of instructions expressed in words, codes, schemes or any other form, including a machine-readable medium, capable of causing a computer to perform a particular task or achieve a particular result. It is obvious that algorithms, source codes and object codes are covered in this definition. It is advisable to file a small extract of the computer program at the time of registration rather than the full program. It is important to know that the part of the program that is not being filed, would remain a trade secret of the owner but would have to be kept well guarded by the owner. It may be noted that computer programs will become important in the area of medicines when one talks about codification of DNA and gene sequencing. Generally, all copyrightable expressions embodied in a computer program, including screen displays, are protectable. However, unlike a computer program, which is a literary work, screen display is considered an artistic work and therefore cannot be registered through the same application as that covering the computer program. A separate application giving graphical representation of all copyrightable elements of the screen display is essential. In the digital era, copyright is assuming a new importance as many works transacted through networks such as databases, multi media work, music, information etc. are presently the subject matter of copyright.

6.1 Coverage provided by copyright

- (i) Literary, dramatic and musical work. Computer programs/software are covered within the definition of literary work.
- (ii) Artistic work
- (iii) Cinematographic films, which include sound track and video films.
- (iv) Recording on any disc, tape, perforated roll or other device.

6.2 Infringement of copyright

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

(a) In the case of **literary, dramatic or musical work**, not being a computer program-----

- (i) to reproduce the work in any material form including the storing of it in any medium by electronic means;

- (ii) to issue copies of the work to the public not being copies already in circulation;
- (iii) to perform the work in public, or communicate it to the public;
- (iv) to make any cinematography film or sound recording in respect of the work;
- (v) to make any translation of the work; to make any adaptation of the work;
- (vi) to do, in relation to a translation or an adaptation of the work, any of the acts specified in relation to the work in Sub-clauses (i) to (vi);

(b) in the case of **computer program** -

- (i) to do any acts specified in clauses (a);
- (ii) to sell or give on hire, or offer for sale or hire any copy of the computer program, regardless of whether such copy has been sold or given on hire on earlier occasions;

(c) in the case of an **artistic work** –

- (i) to reproduce the work in any material form including depiction in three dimensions of a two dimensional work or in two dimensions of a three dimensional work;
- (ii) to communicate the work to the public;
- (iii) to issue copies of the work to the public not being copies already in circulation;
- (iv) to include the work in any cinematography film .
- (v) to make any adaptation of the work;
- (vi) to do, in relation to a translation or an adaptation of the work, any of the acts specified in relation to the work in sub-clauses (i) to (vi);

(d) in the case of a **cinematography film** -

- (i) to make a copy of the film including a photograph of. any image forming part thereof;
- (ii) to sell or give on hire or offer for sale or hire, any copy of the film, regardless of whether such copy has been sold or given on hire on earlier occasions;
- (iii) to communicate the film to the public;

(e) in the case of **sound recording** -

- (i) to make any other sound recording embodying it;
- (ii) to sell or give on hire or offer for sale or hire, any copy of the ,sound recording, regardless of whether such copy has been sold or given on hire on earlier occasions;
- (iii) to communicate the sound recording to the public;

Explanation :- For the purpose of this section, a copy which has been sold once shall be deemed to be a copy already in circulation.

6.3 Computer program

A Computer includes any electronic or similar device having information processing capabilities. Computer program means a set of instructions expressed in words, codes, schemes or any other form, including a machine-readable medium, capable of causing a computer to perform a particular task or achieve a particular result. It is now possible to have copyrights both on object code and source code. Generally, all copyrightable expressions embodied in a computer program, including screen displays, are protectable. However, unlike a computer program, which is a literary work, screen displays are artistic work and cannot therefore be registered in the same application as that covering the computer program. A separate application giving graphic representation of all copyrightable elements of the screen display is necessary.

In the case of a program made in the course of author's employment under a contract of service or apprenticeship, the employer shall, in the absence of any agreement to the contrary, be the first owner of the copyright. However, works created by third parties on commission do not automatically vest the copyright in the commissioning party. If the third party is an independent contractor, it is essential for the commissioning party to obtain the copyright through a written deed of assignment. It is a common misconception that the copyright automatically belongs to the commissioning party. Thus, it is only where the developer is an employee creating the work under a contract of service that the rights belong to the employer.

6.4 Transfer of copyright

The owner of the copyright in an existing work or prospective owner of the copyright in a future work may assign to any person the copyright, either wholly or partially in the following manner.

- i. for the entire world or for a specific country or territory; or
- ii. for the full term of copyright or part thereof ; or
- iii. relating to all the rights comprising the copyright or only part of such rights.

6.3.1 Special provisions for computer programs

Following tasks will not be considered infringement as they are legally allowed under the Indian laws:-

the doing of any act necessary to obtain information essential for operating inter-operability of an independently created computer program with other programs by a lawful possessor of a computer program provided that such information is not otherwise readily available;

- (i) the observation, study or test of functioning of the computer program in order to determine the ideas and principles which underline any elements of the program while performing such acts necessary for the functions for which the computer program was supplied;
- (ii) the making of copies or adaptation of the computer program from a personally legally obtained copy for non-commercial personal use.

One of the important requirements of copyright is that the work / expression should be fixed in a tangible medium for copyright protection. Protection attaches automatically to an eligible work of authorship, the moment the work is sufficiently fixed. A work is fixed when it is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than a transitory duration. A work may be fixed in words, numbers, notes, sounds, pictures, or any other graphic or symbolic indicia; may be embodied in a physical object in written, printed, photographic, sculptural, punched, magnetic, or any other stable form; and may be capable of perception either directly or by means of any machine or device now known or later developed. Basically, the fixation of a work should allow perceiving, reproducing, or communicating the work either directly or through some machine. For instance, floppy disks, compact discs (CDs), CD-ROMs, optical disks, compact discs-interactive (CD-Is), digital tape, and other digital storage devices are all stable forms in which works may be fixed and from which works may be perceived, reproduced or communicated by means of a machine or device.

A simultaneous fixation (or any other fixation) meets the requirements if its embodiment in a copy or phonogram record is "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. "Works are not sufficiently fixed if they are "purely evanescent or transient" in nature, "such as those projected briefly on a screen, shown electronically on a television or cathode ray tube, or captured momentarily in the 'memory' of a computer." Electronic network transmissions from one computer to another, such as e-mail, may only reside on each computer in RAM (random access memory), but that has been found to be sufficient fixation.

7.0 Industrial Design⁴

We see so many varieties and brands of the same product (e.g. car, television, personal computer, a piece of furniture etc.) in the market, which look quite different from each other. If the products have similar functional features or have comparable price tags, the eye appeal or visual design of a product determines the choice. Even if the similarities are not close, a person may decide to go for a more expensive item because that item has a better look or colour scheme.

What is being said is that the external design or colour scheme or ornamentation of a product plays a key role in determining the market acceptability of the product over other similar products. If you have a good design that gives you an advantage, then you must have a system to protect its features otherwise there would be wide scale imitation.

Design as per the Indian Act means the features of shape, configuration, pattern, ornament or composition of lines or colours applied to any article - whether in two dimensional or three dimensional or in both forms - by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and are judged solely by the eye; but it does not include any mode or principle of construction or anything which is in substance a mere mechanical device. In this context an article means any article of manufacture and any substance, artificial, or partly artificial and partly natural; and includes any part of an article capable of being made and sold separately. Stamps, labels, tokens, cards, etc cannot be considered an article for the purpose of registration of design because once the alleged design i.e., ornamentation is removed only a piece of paper, metal or like material remains and the article referred to ceases to exist. An article must have its existence independent of the designs applied to it. So, the design as applied to an article should be integral with the article itself.

7.1 The essential requirements for the registration of design

1. The design should be new or original, not previously published or used in any country before the date of application for registration. The novelty may reside in the application of a known shape or pattern to a new subject matter. However, if the design for which the application is made does not involve any real mental activity for conception, then registration may not be considered.
2. The design should relate to features of shape, configuration, pattern or ornamentation applied or applicable to an article. Thus, designs of industrial plans, layouts and installations are not registrable under the Act.
3. The design should be applied or applicable to any article by any industrial process. Normally, designs of artistic nature such as painting, sculptures and the like which are not produced in bulk by any industrial process are excluded from registration under the Act.
4. The features of the designs in the finished article should appeal to and are judged solely by the eye. This implies that the design must appear and should be visible on the finished article, for which it is meant. Thus, any design in the inside arrangement of a box, money purse or almirah may not be considered for showing such articles in the open state, as those articles are generally put in the market in the closed state.
5. Any mode or principle of construction or operation or any thing, which is in substance a mere mechanical device, would not be a registrable design. For instance, a key having its novelty only in the shape of its corrugation or bend at the portion intended to engage with levers inside the lock it is associated with, cannot be registered as a design under the Act. However, when any design suggests any mode or principle of construction or mechanical or other action of a mechanism, a suitable disclaimer in respect thereof is required to be inserted on its representation, provided there are other registrable features in the design.
6. The design should not include any trademark or property mark or artistic works.

7. It should be significantly distinguishable from known designs or combination of known designs.
8. It should not comprise or contain scandalous or obscene matter.

7.2 Duration of the registration of a design

The total term of a registered design is 15 years. Initially the right is granted for a period of 10 years, which can be extended, by another 5 years by making an application and by paying a fee of Rs. 2000/- to the Controller before the expiry of initial 10 years period. The proprietor of design may make the application for such extension even as soon as the design is registered.

7.3 Strategy for protection

First to file rule is applicable for registrability of design. If two or more applications relating to an identical or a similar design are filed on different dates, the first application will be considered for registration of design. Therefore the application should be filed as soon as you are ready with the design. After publication in the official gazette on payment of the prescribed fee of Rs. 500/- all registered designs are open for public inspection. Therefore, it is advisable to inspect the register of designs to determine whether the design is new or not. There is yet another important provision for ensuring that the design is different from anything published anywhere in the world. This is quite a strict condition. There would be many designs, which are not protected, and these would not be part of any database maintained by design offices. An applicant has to take the responsibility of ensuring that he has done an extensive search and satisfied himself of the novelty of his design. However, in practice as the cost involved in filing and obtaining a design registration is not high, a design application is made if the stakes involved are not high and you have not copied any design. The application for registration of design can be filed by the applicant himself or through a professional person (i.e. patent agent, legal practitioner etc.). An agent residing in India has to be employed by the applicants not resident of India.

8.0 Trademarks⁵

A trademark is a distinctive sign, which identifies certain goods or services as those produced or provided by a specific person or enterprise. Trademarks may be one or combination of words, letters, and numerals. They may also consist of drawings, symbols, three dimensional signs such as shape and packaging of goods, or colours used as distinguishing feature. Collective marks are owned by an association whose members use them to identify themselves with a level of quality. Certification marks are given for compliance with defined standards. (Example ISO 9000.). A trademark provides to the owner of the mark by ensuring the exclusive right to use it to identify goods or services, or to authorize others to use it in return for some consideration (payment).

Well-known trademark in relation to any goods or services, means a mark which has become so to the substantial segment of the public which uses such goods or receives such services that the use of such mark in relation to other goods or services would be likely to be

taken as indicating a connection in the course of trade or rendering of services between those goods or services and a person using the mark in relation to the first-mentioned goods or services.

Enactment of the Indian Trademarks Act 1999 is a big step forward from the Trade and Merchandise Marks Act 1958 and the Trademark Act 1940. The newly enacted Act has some features not present in the 1958 Act and these are:-

1. Registration of service marks, collective marks and certification trademarks.
2. Increasing the period of registration and renewal from 7 years to 10 years.
3. Allowing filing of single application for registration in more than one class.
4. Enhanced punishment for offences related to trademarks.
5. Exhaustive definitions for terms frequently used.
6. Simplified procedure for registration of registered users and enlarged scope of permitted use.
7. Constitution of an Appellate Board for speedy disposal of appeals and rectification applications which at present lie before High Court.

8.1 Well-known trademarks and associated trademarks

A well-known trademark in relation to any goods or services, means a mark which has become known to the substantial segment of the public that uses such goods or receives such services. Associated Trademarks are, in commercial terms, marks that resemble each other and are owned by the same owner, but are applied to the same type of goods or services. For example, a company dealing in readymade garments may use associated marks for shirts, trousers etc. means trademarks deemed to be, or required to be, registered as associated trademarks under this Act.

8.2 Service marks

The Indian Act of 1958 did not have any reference to service marks. Service means service of any description that is made available to potential users and includes the provision of services in connection with the business of industrial or commercial matters such as banking, communication, education, financing, insurance, chit funds, real estate, transport, storage, material treatment, processing, supply of electrical or other energy, boarding, lodging, entertainment, amusement, construction, repair, conveying of news or information and advertising. Marks used to represent such services are known as service marks.

8.3 Certification Trademarks and Collective Marks

A certification trade mark means a guarantee mark which indicates that the goods to which it is applied are of a certain quality or are manufactured in a particular way or come from a certain region or use some specific material or maintain a certain level of accuracy. The goods must originate from a certain region rather from a particular trader. Certification marks are also applicable to services and the same parameters will have to be satisfied. Further these marks are registrable just like any other trademark. Agmark used in India for various food items is a kind of

certification mark although it is not registered as a certification mark; the concept of certification mark was not in vogue at the time of introduction of Agmark.

A collective mark means a trademark distinguishing from those of others, the goods or services of members of an association of persons (not being a partnership within the meaning of the Indian Partnership Act, 1932), which is the proprietor of the mark.

8.4 Term of a registered trademark

The initial registration of a trademark shall be for a period of ten years but may be renewed from time to time for an unlimited period by payment of the renewal fees.

9.0 Protection of Geographical Indications⁶

Indications which identify a good as originating in the territory of a member or a region or a locality in that territory, where a given quality reputation or other characteristics of the good is attributable to its geographical origin. The concept of identifying GI and protecting them is a new concept in India, perhaps in most developing countries, and has come to knowledge in these countries after they signed the TRIPS Agreement. It may be noted that properly protected GI will give protection in domestic and international market. Stipulations of TRIPS would be applicable to all the member countries. According to TRIPS, GI which is not or cease to be protected in its country of origin or which has fallen into disuse in that country cannot be protected. Homonymous GI for wines will get independent protection. Each state shall determine conditions under which homonymous indications will be differentiated from each other. Principles of national treatment and fair competition are applicable. TRIPS provide for seizure of goods bearing false indications of GI. TRIPS provide for refusal or invalidation of registration of a trademark containing a GI with respect to goods not originating in the territory indicated. The Geographical Indication of Goods (Registration and Protection) Act came into being in 2000. (The Act is not implemented at the time of writing the article as the rules have not been notified.)

The term GI has been defined as "Geographical Indications", in relation to goods, means an indication which identifies such goods as agricultural goods, natural goods or manufactured goods as originating, or manufactured in the territory of a country, or a region or locality in that territory, where a given quality, reputation or other characteristics of such goods is essentially attributable to its geographical origin and in case where such goods are manufactured goods one of the activities of either the production or of processing or preparation of the goods concerned takes place in such territory, region or locality, as the case may be.

9.1 Applicants for GI's registration

Any association of persons or producers or any organization or authority established by or under any law for the time being in force representing the interest of the producers of the concerned goods, who are desirous of registering geographical indication in relation to such goods shall apply in writing to the Registrar in such' form and in such manner and accompanied by such fees as may be prescribed for the registration of the geographical indication.

9.2 Non-registrable geographical indications

Geographical indications having following cannot be registered :

- .the use of which would be likely to deceive or cause confusion or contrary to any law.
- .which comprises or contains scandalous or obscene matter or any matter likely to hurt religion susceptibility of any class or section of citizens of India.
- which would other wise be disentitled to protection in a court. .which are determined to be generic names or indications of goods and are,
- therefore, not or ceased to be protected in their country of origin or which have fallen into disuse in that Country.
- which, although literally true as to the territory, region or locality in which the goods originate, but falsely represent to the persons that the i goods originate in another territory, region or locality, as the case may be.

9.3 Punishment for falsifying GI

A sentence of imprisonment for a term between six months to three years and a fine between fifty thousand rupees and two lakh rupees is provided in the Act. The court may reduce the punishment under special circumstances.

9.4 Term of GI protection

The registration of a GI shall be for a period of ten years but may be renewed from time to time for an unlimited period by payment of the renewal fees.

10.0 Protection of Integrated Circuit Layout Design (IC)⁷

It provides protection for semiconductor IC layout designs. India has now in place Semiconductor Integrated Circuits Layout Design Act, 2000 to give protection to IC layout design. Layout design includes a layout of transistors and other circuitry elements and includes lead wires connecting such elements and expressed in any manner in a semiconductor IC. Semiconductor IC is 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 term of the registration is 10 years from the date of filing.

An IC layout design cannot be registered if it is

1. Not original
2. Commercially exploited anywhere in India or in a convention country;
3. Inherently not distinctive
4. Inherently not capable of being distinguishable from any other registered layout design.

Note: Design not exploited commercially for more than 2 years from date of registration of application shall be treated as commercially exploited for the purpose of this Act.

Reproducing, importing, selling, distributing the IC layout design for commercial purposes only constitutes infringement. A person when creates another layout design on the basis of scientific evaluation of a registered layout design shall not be causing any infringement.

11.0 Protection of undisclosed information

The protected subject matter is information lawfully within the control of a natural person or legal person that is secret that has commercial value because it is secret and that has been subject to reasonable steps by the person lawfully in control of the information, to keep it secret. Secret is defined as “ secret in the sense that it is not , as a body or in the precise configuration and assembly of its components known among or readily accessible to persons within the circles that normally deal with the kind of information in question.” Undisclosed information, generally known as trade secret / confidential information, includes formula, pattern, compilation, programme, device, method, technique or process. Protection of undisclosed information is least known to players of IPR and also least talked about, although it is perhaps the most important form of protection for industries, R&D institutions and other agencies dealing with IPRs. Protection of undisclosed information / trade secret is not really new to humanity; at every stage of development people have evolved methods to keep important information secret, commonly by restricting the knowledge to their family members. Laws relating to all forms of IPR are at different stages of implementation in India, but there is no separate and exclusive law for protecting undisclosed information / trade secret or confidential information. The Contract Act of 1872 would however cover many aspects of trade secrets.

It is difficult to define the term in its entirety but, for an easy understanding, it may be said that a piece of undisclosed information or a trade secret can be as simple an item as a company's customer list or as complex as a formula for a product or a process. Broadly speaking, the term would encompass information, including a formula, pattern, compilation, program, device, method, technique or process that provides the owner with an advantage over his business competitors who do not know or use it and is of significance or importance to the business of the company holding the information. Expanding it further, it may include new product plans, product costing, best material to use, sources of materials, financial standing of the business, accounting information, employee records, credit rating of customers, production information, manufacturing methods and processes, business methods, blueprints, test data, research reports, professional pollsters, technical drawings and organisational structure, specifications, process manuals, written instructions for operating the process and analytical means to check and control the product and processes, details of workshop practice, technical training and personal visitation and inspection. On the software side it would include source code, the data file structure, the structure sequence and organisation of computer program. It may also include information relating to a patented invention not included in the patent specification, inventions capable of being patented but not patented, inventions incapable of being patented in a particular country because of the subject matter being excluded in the patent law of that country, inventions incapable of being patented by reason of lack of inventiveness, industrial designs capable of being registered but not registered, industrial designs having functional characteristics and skills, experience and craftsmanship of technicians. The information can be intangible and invisible as well and can take myriad forms, and therefore, any attempt to define it

in an exhaustive manner would be practically meaningless.

A trade secret is a valuable piece of information with the essential requirement that the information be treated as such, i.e. as a secret. The value of a trade secret resides in the fact that competitors or other interested parties do not have access to it. Therefore, a trade secret must be kept secret so that no one could, with out the consent of the owner, acquire it. Trade secrecy is basically a do-it-yourself form of protection. You do not register with the government to secure your trade secrets. *The only way to acquire it with out the consent of the owner would be through devious or unlawful means.* The owner has the exclusive right to use / exploit a trade secret as long as it remains a secret. As a result, theoretically speaking, the term of a trade secret could be indeterminate or infinite. It is said that the trade secret of Coca-Cola still has not entered the public domain despite the fact that the common ingredients of Coca-Cola are known. A chemical composition falling in this category need to be protected through a trade secret rather than patent which is a publicly known document. It is usually said that the term of the trade secret relating to a machine tool is only as long as the company keeps it internal secret. The moment the product is in the market, many people will know how to copy the product and the moment the product is copied the trade secret associated with the copied aspects will no longer remain valid and secret, hence the protection will be lost and the term of the protection will be over. By and large this would be true for design features but trade secret can be maintained about say, composition of materials used and the process conditions adopted for manufacturing.

12.0 Other related legislation

India enacted the Biodiversity Act 2002 to ensure maintenance, sustenance and development of its biodiversity. The Act has specific provisions about ownership of intellectual property rights associated with exploitation of biodiversity. Industries have to have the prior informed consent of the National Biodiversity Authority before exploring the biodiversity in India. In the event of R&D based on exploitation of biodiversity and associated local knowledge, there is a provision for sharing of benefits of such work with the local community. No direct flow of funds is expected to the community. In stead the Union Government will reach the benefits through State Governments to the community.

The other Act having its influence over other Acts related to IPR is the Information technology Act, 2000 which looks at the security aspect of material being transacted on internet.

13.0 Management of IPR in publicly funded institutions in India

Aims of publicly funded institutions such as universities, colleges, autonomous bodies and public sector undertakings are multifaceted and are not purely driven by economic considerations but they are primarily driven by considerations of social obligations and political objectives and will of a nation. India has stuck to these aims since the independence. On one hand the above approach has helped us in creating a pool of highly educated population and also building an inherent strength in research and development and core competency in basic industries like steel, power, fertilizers etc. However on the other hand, an insulated system breeds complacency, which blunts the spirit of innovation and fire for being ahead of others. Globalization has taught us many new lessons by opening our eyes to the existing and forthcoming ground realities, which cannot be shunned away just because we do not happen to like them. These realities are going to stay. The likely impacts of globalization started becoming a part of our age old thought process and life style when India decided to become a member of the World Trade Organization. Since the beginning of 1990s new approaches started taking roots

in respect of such institutions, especially related to their management and source of funding. It has been observed that educational and R&D institutions are being asked to generate their own funds and depend less and less on block grants by central or state governments. In respect of PSU the message has been to generate more and more revenue from the available resources. The Central Government was quick to understand the importance of innovations and new ideas for adjusting to new streams of paradigm shifts. The Government also realized that the journey is not going to be smooth, easy or straight forward in the absence of knowledge about new paradigms among scientists, technologists and policy makers. January 1, 1995 came and brought with it the full impact of WTO along with the Agreement of Trade Related Aspects of Intellectual Property Rights (TRIPS). The Indian system rose to the new challenge and through its many efforts have taken successful steps towards transition to a new culture by updating its existing laws, enacting new legislations, instituting new mechanisms for enabling creation of new intellectual property and its protection and even evolving novel methods and schemes to promote innovations at grass roots levels. Managing creativity within the innovation process is not easy. From providing initial impetus for new ideas and a means of collating and evaluating them through to determining the most appropriate exploitation strategy and selecting delivery partners, innovation is a process and can therefore be managed.

13.1 Indian S&T scenario⁸

The national expenditure on Research and Development (R&D) in India increased from Rs. 8913.61 crores in 1996-97 to Rs. 12901.54 crores in 1998-99. The projected R&D expenditure would reach a level of about Rs. 15090.22 crores in 1999-2000 and Rs. 17660.21 crores in 2000-2001. The share of the various sectors in the total R&D expenditure in 1998-99 was - Central Government including public sector industry contributed 67.5%, private sector 21.6%, State governments 8.0% and the higher education sector 2.9%.

The R&D expenditure as a percentage of GNP was 0.81% as compared to 0.79% in 1990-91. Though in absolute terms the R&D expenditure has shown an increasing trend, the R&D expenditure as a percentage of GNP has hovered around 0.8%. The projected R&D expenditure as percentage of GNP in 1999-2000 and 2000-2001 are 0.87% and 0.94% respectively. It may be noted that in the coming years, the R&D expenses by the education sector is likely to go up as the academic institutions interact more and more with the industry and are thereby motivated to spend their own resources in R&D. As greater awareness about protecting intellectual property gets generated in industry and academics, contract research would necessarily be driven by the need to generate, protect and manage IPR. This trend will leverage more funds in R&D and improve the return from investment in R&D.

The national R&D expenditure by objectives in 1998-99 was in the following areas in order of the share of the expenditure, agriculture forestry and fishing, defence, space, promotion of industrial development, development of health services, energy, general advancement of knowledge, transport and communication and environment. It may be noted that majority of funding for R&D comes from the Government and is carried out in publicly funded institutions. Therefore the role of the government in capacity building in management of IPR is fundamental and of utmost importance.

13.2 Capacity building

Experts who have been involved in capacity building in different areas would agree that the exercise of capacity building is never monolithic in nature but a multidimensional and complex activity. No exercise at a national level can succeed if all or most players are not engaged in the activity. Intellectual Property Rights are often considered synonym of patents or at best patents, trademark and copyrights. This type of understanding or misunderstanding may be present elsewhere in the world. Sometimes people even use the word 'patent' as a substitute for 'protect'. Lets not forget that India is a big country and the task of spreading literacy is gigantic Dissemination of new knowledge is difficult and it cannot be disseminated in a day or two; hence one should be prepared to work with low success rates. At the same time the need to make efforts for spreading correct literacy in a short period of time cannot be overlooked. Awareness still remains an unfulfilled goal in spite of efforts made by so many agencies. There is a need to adopt different means such as contact programmes, print media, bulletins, internet, videos etc. Awareness by itself is of little use if the State does not create and provide suitable systems to enable scientists, technologists, industries and even the State to protect their rights. These means would be in terms of technical guidance, financial support, legal help and other facilitation steps. If you teach scientists that novelty is one of the key factors for getting a patent and do not supply them with adequate tools to determine if their inventions are novel or not, the awareness will have be of little value. Universities in India are very poor and their management systems are very old. Therefore, they need technical, financial and legal help to move ahead; someone has to hold their hands.

Capacity building has to be multifaceted at the national level in order to move and remain ahead in the knowledge race. Academic institutions, R&D institutions, industries (goods and services), government departments and ministries (law making, regulating, providing funds and incentives for research etc) and other agencies, attorney firms, courts and NGOs need to be enabled and empowered for playing a constructive role in the process of capacity building. Policy frameworks are essential in the national context to give the right impetus to the activities already started and also provide a broad platform for taking up future activities. Many of these issues have been addressed and addressed quite successfully in the last ten years by different agencies of the government. While departments like Atomic Energy, Space and DRDO and agencies like CSIR have their in house system for looking after their needs of IPR, There was no agency in the country in 1995, which could cut across departments and agencies and become a national nodal point for information and advice on IPR.

13.3 Patent Facilitating Centre (PFC)

The Department of Science and Technology set up the Patent Facilitating Centre at the Technology Information Forecasting and Assessment Council (TIFAC) in 1995 as a small initiative to address the need of awareness creation among scientists, helping them to protect their inventive and original work through IP laws and also act as a watch dog. The PFC came to be known for its capability to raise issues and bringing new information and knowledge about IPR in public domain. Starting with the revelation of the turmeric patent to the whole country, it brought to notice many other patents using some of our well known plants and traditional knowledge and, at times, claiming what is already known in India. The days of Dunkel Draft on WTO became a history with PFC putting IPR matters in public domain freely through its monthly IPR Bulletin since November 1995 (now it is available on the net). The readership of these bulletins is over 10000. These bulletins cover technical analysis of granted patents, case laws, current global issues, IPR laws of India and other countries, international treaties, analysis of patents tends, domestic and international news and many other items of interest to a wide variety of readers.

The PFC has organized 305 IPR awareness workshops all over the country independently and also in association with Ministry of Small Scale Industries, Department of Atomic Energy, Department of Space and ICMR. In the process almost 35000 scientists, technologists and policy makers have been sensitized from about 500 universities, colleges and R&D institutions and 800 industries. The PFC has been organizing advanced level of training programmes with CII and attorney firms and also workshops cum retreat on topics such as public private partnership in IPR management. It would be pertinent to mention at this point that the Ministry of Human Resource Development (MHRD) has also been supporting workshops on IPR. Further, the MHRD has created 11 IPR chairs in various IITS and universities. The Ministry of Commerce and Industry has also been conducting many seminars and workshops on this topic for the last decade or so. As mentioned earlier, these efforts have to be supplemented with some hardcore products and processes to lead to logical conclusions/ output. Indian patent data was not available in a searchable digital form. People in the field realize that it is almost impossible to search for patents from the gazette. The PFC brought out Ekaswa A and Ekaswa B databases on the patent applications filed in India and the patent applications accepted by the Patent Office. These are available on the internet as well and are being used extensively by industries.

Twenty Patent Information Centres (PIC) have been set up by the PFC in 20 States namely; Assam, Andhra Pradesh, Chattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Manipur, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, Uttranchal and West Bengal. These PICs are helping scientists, technologists and policy makers in their respective States by creating awareness and extending help for protecting their inventions. Some States as a result of continuous discussions have filed applications for registration of some products as geographical indications; some are also in the pipeline. Two PICs, namely, Punjab and West Bengal, have also succeeded in introducing IPR courses in technical institutions; other PICs are working hard towards this goal.

The PFC is the only window available in the country, which provides full technical, legal and financial support for inventions emanating from educational institutions, including schools and colleges, and government departments. It has so far filed 260 patent applications in India and other countries from about 55 universities / academic institutions and many of them have been granted.

13.4 Other centres / cells

Many government departments, educational institutions and PSU have started their IPR cells. Prominent among the government departments / agencies are Department of Biotechnology, Ministry of Telecommunications and Information Technology, Indian Council of Medical Research, Indian Council of Agricultural Research, ISRO, Department of Atomic Energy, Defence Research and Development Organization and Indian Council of Forest Research. IITs at Delhi, Mumbai, Kharagpur and Roorkee have also set up their cells and evolved their IPR policies. Among the PSUs, Indian Oil Corporation and Bharat Heavy Electricals Ltd. are worth mentioning. Among private industries, there are many industries, which have started their own IPR cells and it may not be possible to list all of them here. There is no doubt that private industries have responded very well to the new IPR regime in terms of filing patent applications.

13.5 First Policy Breakthrough⁹

Ministry of Science and Technology issued the guidelines "Instructions for Technology Transfer and Intellectual Property Rights" in March 2000, which would help in enhancing the motivation of scientists, research Institutions and universities in projects funded by the Department of Science and Technology, Department of Biotechnology, Department of Scientific and Industrial Research and Department of Ocean Development. The salient features of the guidelines are

- (1) Institutions shall be encouraged to seek protection of intellectual property rights in respect of the results of R&D. They may retain the ownership of such IPR. Here 'Institutions' mean any technical, scientific or academic establishment where research is carried out through funding by the central and / or the state governments.
- (2) The Institutions shall take necessary steps to commercially exploit patents on exclusive or on non-exclusive basis.
- (3) The owner institution is permitted to retain the benefits and earnings generated out of the IPR. The institution may determine the share of inventor(s) and other persons from such actual earnings. However, such share shall be limited to one third of the actual earnings.
- (4) IPR generated through joint research by institution(s) and industrial concern(s) through joint efforts can be owned jointly by them or as may be mutually agreed to by them through a written agreement. The institution and industrial concern may transfer the technology to a third party for commercialisation on exclusive / non-exclusive basis. The third party, exclusively licensed to market the innovation in India, must manufacture the product in India. The joint owners may share the benefits and earnings arising out of commercial exploitation of the IPR.
- (5) The owner institution shall set apart not less than 25% of the revenue generated from IPR to create a Patent Facilitating Fund which shall be utilized by the institution for updating inventions, filing new patent applications and protecting IP rights against infringement, and for building competency in the area of IPR and related issues.
- (6) The Government shall have a royalty free license for the use of the Intellectual property for the purposes of the Government of India.

This is a major departure in the approach and policy towards managing inventions in India by the Ministry of Science and Technology. In order to have a uniform policy of the government in this respect, it may be useful to have a suitable law in this regard. It is obvious that with more and more autonomy to research institutions in regard to IPR and technology transfer, these institutions, and the scientists working there, would have stronger motivation to invent products and processes, which are required by the market.

13.6 Innovations related incentives¹⁰

An innovative industry in India can gain competitive advantage in the market if it develops the necessary expertise and skills in developing and manufacturing new products, which are patented. For example, the advantage of a three year excise duty exemption or exemption from Drugs Price Control Order may translate into reserves / income which may offset the cost towards R&D. In order to promote R&D and innovation in Indian industries, Government of India provides a number of fiscal incentives and support measures to industries. With increasing public private partnership in technology development through schemes of Technology Development Board, Drug and Pharmaceutical Board and NMILTI, the following incentives would be extremely useful in promoting the culture of innovation and intellectual property protection in industries and academic and R&D institutions.

1. Excise duty waiver on patented products

All goods falling under the Schedule to the Central Excise Tariff 1985 are exempt from the excise duty for a period of 3 years from the date of commencement of commercial production provided such goods are manufactured by a wholly owned Indian company and such goods are designed and developed by such Indian company and the goods so designed are patented in any two countries outside India namely, USA, Japan and any country of the European Union. The manufacturer, before commencing commercial production must obtain a certificate from the Department of Scientific and Industrial Research for claiming the benefit.

2. Exemption from Drug Price Control Order

Bulk drugs produced based on indigenous R&D are exempt from drug price control for a period of 5 years from the date of commencement of commercial production provided that they are produced from the basic stage by a process of manufacture developed by the unit through its own R&D efforts. In case of a drug, which has not been produced elsewhere, if developed and produced indigenously, it would be placed outside the price control order for a period of 10 years from the date of commencement of commercial production. *In order to establish that a process or a product has been developed through indigenous R&D, novelty of the process or product would have to be ensured. In other words a patent would have to be necessarily obtained for claiming the benefit.*

3. Weighted tax deduction on R&D expenditure

Weighted tax deduction @ 150% on R&D expenditure is available to companies engaged in the business of biotechnology, or the business of manufacture or production of drugs, pharmaceuticals, electronic equipment, computers, telecommunication equipment, chemicals and manufacture of aircraft and helicopters. The expenditure on scientific research in relation to drugs and pharmaceuticals, shall include expenditure incurred on clinical trials of drugs, obtaining approval from the regulatory authority under any Central, State or provincial Act and the filing of a patent application in India.

4. Accelerated depreciation allowance

Depreciation allowance at a higher rate is available in respect of plant and machinery installed for manufacturing goods based on indigenous technology developed in recognized in-house R&D units, Government R&D institutions, national laboratories and Scientific and

Industrial Organizations (SIRO). The present rate of depreciation for plant and machinery is 40% as against 25% for other plants and machinery.

5. Tax holiday to R&D companies

Tax holiday is available to approved companies engaged in scientific and industrial R&D activities on commercial lines for ten consecutive assessment years. This incentive is applicable to any commercial company that has its main objective and activities in the area of scientific and industrial R&D. This would be applicable to companies approved after March 31, 2000 but before April 1, 2003.

6. Income tax relief on R&D expenditure

Under Section 35(1)(i) of the Income Tax Act 1961, the revenue expenditure on scientific research, by recognized R&D units, on activities related to the business of the company is allowed full deduction. Under Section 35(1)(iv) expenses of a capital nature could be deducted totally from the income of the year in which the expenses have been incurred.

7. Tax deduction for sponsoring research

Section 35(2AA) of the IT Act 1961 provides for a weighted tax deduction of 125% for expenses on sponsoring research programmes at National laboratories functioning under ICAR, CSIR, ICMR, DRDO, Department of Biotechnology, Department of Atomic Energy, Department of Electronics; IIT and universities.

13.7 The Science and Technology Policy 2003¹¹

The Science and Technology Policy released in 2003 is upbeat on intellectual property rights and related issues. It focuses a great deal on the transformation of new ideas into commercial successes, which is considered vitally important to the nation's ability to achieve high economic growth and global competitiveness. Accordingly, special emphasis will be given not only to R&D and the technological factors of innovations but also to the other equally important social, institutional and market factors. Value addition and creation of wealth through reassessment, redistribution and repositioning of our intellectual, capital and material resource will be achieved through effective use of science and technology.

The Policy states that IPR has to be viewed, not as a self contained and distinct domain, but rather as an effective policy instrument that would be relevant to wide ranging socio-economic, technological and political concepts. The generation and protection of competitive intellectual property from Indian R&D programmes will be encouraged and promoted. The process of globalization is leading to situations where collective knowledge of societies normally used for common good is converted to a proprietary knowledge for the commercial profit of a few. Action will be taken to protect our indigenous knowledge systems, primarily through national policies, supplemented by supportive international action. For this purpose, IPR systems, which specially protect scientific discoveries and technological innovations arising out of such traditional knowledge will be designed and implemented. Our legislation with regard to patents, copyrights and other forms of intellectual property rights will ensure that maximum incentives are provided for individual inventors, and to our scientific and technological community, to undertake large scale and rapid commercialization, at home and abroad.

The development of skills and competence to manage IPR and to leverage its influence will be given a major thrust. This area calls for significant technological insights and legal expertise and will be handled differently from the present, and with high priority. Efforts will be made to synergy between industry and scientific research by creating Autonomous Technology Transfer Organizations as associate organizations of universities and national laboratories to facilitate the transfer to industry, of the know how generated.

The above action strategy has emerged from the following policy objectives:

- To encourage research and innovation in areas of relevance for the economy and the society, particularly by promoting close and productive interaction between private and public institutions in science and technology;
- To establish an intellectual property rights regime, which maximizes the incentives for the generation and protection of intellectual property by all types of inventors. The regime would also provide a strong, supportive and comprehensive policy environment for speedy and effective domestic commercialization of such inventions so as to be maximal in the public interest and to promote international science and technology cooperation towards achieving the goals of national development and security, and make it a key element of our international relations.

The Policy objectives in regard to intellectual property rights were formulated with the overall perspective that knowledge has become a source of economic might and power. This has led to increased restrictions on sharing of knowledge, to new norms of intellectual property rights, and to global trade and technology control regimes. Scientific and technological developments today also have deep ethical, legal and social implications. There are deep concerns in society about these. The ongoing globalization and the intensely competitive environment have a significant impact on the production and service sectors.

13.8 Experience of Indian universities^{12, 13}

Until 1995 the culture of protecting their inventive work through patents by universities and academic institutions was almost nonexistent. Efforts made by multiple agencies in the country have made some difference in the situation, which is obvious from the data and analysis that follow. The Table 1 below shows the filings of patent applications by the Indian academic institutions in India.

| Year | Number of patent applications filed by academic institutes other than IITs and IISc | Number of patent applications filed by IITs and IISc | Total number of patent applications |
|------|---|--|-------------------------------------|
| 1995 | 4 | 31 | 35 |
| 1996 | 11 | 18 | 29 |
| 1997 | 23 | 15 | 38 |
| 1998 | 16 | 34 | 50 |
| 1999 | 30 | 32 | 62 |
| 2000 | 36 | 42 | 78 |
| 2001 | 33 | 63 | 96 |
| 2002 | 33 | 46 | 79 |

Table 1

The Table 2 shows the growth in filings in two blocks of four years; 1995-1998 and 1999-2002.

| Block period | Applications filed during 1995-1998 | Applications filed during 1999-2002 | Percentage increase in number of applications filed |
|--|-------------------------------------|-------------------------------------|---|
| Academic institutes other than IITs and IISc | 54 | 132 | 244 |
| IITs and IISc | 98 | 183 | 187 |
| Total | 152 | 315 | 207 |

Table 2

It may be noted that out of 132 patent applications filed during 1999-2002 by institutions other than IITs and IISc, 53 applications (40% of the applications) were filed with full technical, legal and financial support of the PFC of TIFAC.

14.9 Epilogue

A statement of purpose (SOP) is always helpful in fixing targets and goals because fulfilment of a purpose is satisfying. We have to have an SOP to develop a pool of well informed and trained human resource, deploy sufficient facilities (hardware and software) and, create and promote an enabling environment for generating, protecting and managing intellectual property for progress of science, technology and arts leading to growth of trade and industry and well being of the society. People say that Rome was not built in a day. Any physical process, including development, has to absorb some finite time before taking a shape. We have made a good start by rising to the occasion and putting in place some very useful systems and policies. It is the beginning and we have to go a long way!

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(The views expressed above are those of the author and not of the organizations he is affiliated to.)