Management of IPR

Management of IPR involves several actions, a step-by-step planning both in short and long terms, and an understanding of the market situation. The aims of various agencies may be different while managing IPR. The perspective of an industry may be quite unlike that of an educational institution or the government. At the same time there will be a similarity in the approaches and goals. An industry will be interested in maximizing its profit and return on investment and would like to be ahead of its competitors; sometimes it may not be interested in converting the IPR into products or processes, and it might like to keep its invention as a patented product or process.

The situation regarding patents has never been static, mainly because science and technology have been growing each day with the addition of new knowledge. Human beings are constantly benefited by new knowledge as it helps in making life disease free, achieving better quality of life and so on. The growth of the human race and the spirit to stay in the forefront of the race for the survival of the fittest had made it essential for countries to evolve mechanisms to reward people with new ideas and who can invent and convert inventions into technology through new processes and products. During the last century science and technology has developed at a very rapid pace almost unheard of in earlier centuries. The two most important areas were the invention of transistors and the discovery of the DNA structure. Transistors revolutionalised electronics, and what we see as the Information Technology (IT) today would not have been possible with out this invention. IT is heavily dependent on high speed computers which have come into being through enormous R&D done on transistors and fabrication technologies which led to the development of integrated circuits and very large scale integrated circuits (VLSI). At the same time the phenomenal growth in computer software was / is possible because hardware existed which could understand the instructions given in a software and provide solutions to complex problems of practically all areas of industry and R&D. The discovery of DNA structure provided the fundamental knowledge base for research and development in the field of biotechnology. We all know how biotechnology is

influencing our lives today through better medicines, pest resistant plant varieties and seeds. Lets have a look at the role played by IPR, particularly patents, in the developments mentioned above. It is generally accepted and stated that technology is ahead of law and that law tends to follow technology. However, in case of biotechnology, we notice that the law has played a significant role in the development of the biotech industry. The phenomenal growth in this sector would have been absent if the US Supreme Court had not given the landmark decision in 1980 in the case Diamond vs Chakrabarty.

A. Chakrabarty, a scientist working with General Electrics, USA, modified a microorganism (pseudomonas) genetically in such a manner that the modified microorganism could eat the oil spills. The US Patent and Trademark Office (USPTO) did not allow a patent on this invention on the grounds that it dealt with a living organism. The Appeal Court also endorsed the viewpoint of the USPTO. It was in the Supreme Court that history was written when the Court gave a ruling that there was nothing in US patent laws which prohibited patenting of life forms. It went to the extent of recording that any thing under the sun is patentable provided it has been obtained through human intervention. The decision came in 1980 and the bench was divided on the matter; when 5 judges voted for patenting and 4 judges voted against it. Since that day investments in the biotech industry have grown by leaps and bounds. It may appear a statement of conjecture if one were to state that the growth of this industry would not have achieved its present status with out the Supreme Court decision. But this is quite true!

The other important case was that of Diamond vs. Diehr in a matter concerning patenting of software. Until the decision of the US Supreme Court in 1981, software was not a subject matter of patents. This case also followed the same track. It was denied by the USPTO but finally awarded by the Supreme Court. The bench was divided 5:4 in this case as well. It is quite visible that major developments in patent laws took place in the USA in the last century and, generally many countries accepted these. Though there is always a difference in the level of acceptability of different situations; most countries have now accepted the patenting of genetically modified organisms. However, software patenting has still not become commonplace.

Patent laws were first promulgated in India in 1856, a year before her first war of independence in 1857. These laws were modified from time to time, and more stable patent

and design laws were enacted in 1911. At that time the patent laws were the same as followed in England and therefore were at par with the laws of most advanced countries. These laws were revisited after India got her independence in 1947 and it was decided that the laws required some changes in order to meet the social and economic needs of the country, with a large population of poor people who did not have easy access to medicines and other advancements of science. At the same time there was the desire to be self-reliant in many areas of technology and this led to serious efforts towards nurturing science and technology in India. The patent laws were revised and the Patent Act, 1970 was enacted, which did not allow patenting of substances emanating as a result of chemical reactions. Product patents were allowed except in respect of drugs, chemicals and food items. However, process patents are granted for drugs, food items and chemicals. In the post independence period, laws on copyrights and trademarks were enacted. The Design Act of 1911 was allowed to continue. On the trade secret front, the Contract Act of 1872 was utilized to avoid unlawful use of secret information. This was modified in 1932, the same laws still continue.

In spite of the fact that such laws were in place, most of the scientific community and the Indian industry were not aware of, or were not conversant with, the fundamentals of intellectual property rights and their management. Several institutions of higher learning such as the Indian Institutes of Technology were set up in the late fifties and the early sixties, with the help of advanced countries like USA. Somehow, none of these institutions made the students at the under-graduate, graduate or the post-graduate levels, familiar with the principles for protecting intellectual property rights. With the signing of the WTO Agreement as also other agreements such as TRIPS, India has taken several steps towards bringing about a paradigm shift in the understanding about IPR, including the development of some new legislation in respect of different forms of IPR.

Almost eighty percent of the R&D spending in India is by the government. A large portion of this investment is utilized for dedicated needs of energy, defence and space research, hence the research is focused, and for an identified market. Emphasis on self reliance was perhaps over dominating, resulting into research moving away from the market needs, and consequently extra mural and in house R&D of research institutions and universities did not lead to marketable products and processes. Industry in any case was not too eager to spend on R&D except to the extent of cashing in on the benefits given by the government for promotion of R&D. As was the case in many other countries, it was the practice in India that in all

government funded projects, the ownership of the developed products or process resided with the government, the government also retained the right to transfer such technologies. One of the arguments was that it was not fair for one institution or few individuals (inventors) to enjoy the fruits of R&D results as the taxpayers' money had been utilized to arrive at the results. If benefits came to the government, there would be more equitable distribution of the benefits. Further, the interpretation of government's financial rules did not find any special place for assets generated through R&D, namely the intellectual property. However, there was very little understanding about the fundamentals of IPR and their management. It may not be out of place to mention that the awareness on this subject was practically zero. With the coming on of WTO, it was soon understood that scientific inventions would have a very important role in the knowledge society, and environment and circumstances should be created, conducive for enhancing the number of scientific inventions leading to generation of IPR. Unless institutions capable of generating new knowledge and scientists are adequately motivated, no society could expect to lead in its IP portfolio.

In this back drop injecting a new paradigm is not an easy task, as most people to start with, get engaged in the debate on relative advantages and disadvantages of public good and private property with out realizing that a property duly owned can be used for public good if the owner so desires. Some governmental agencies like the Council of Scientific and Industrial Research (CSIR) and some industries, mainly having links with companies outside or subsidiaries of such foreign companies like Hoechst (now Aventis) and Hindustan Lever had very good IPR divisions to take care of the inventions taking place in these companies. With such exceptions, by and large, most Indian companies were not familiar with protection of intellectual property, especially patents.

The Post WTO Period

The immediate post WTO period saw a large number of initiatives taken by government, industry, industry associations and R&D institutions, in preparation for facing the new challenges emerging from the newly agreed-upon multi-lateral trade regime. India, as a developing country and not practising market economy, got a transition time of 10 years for bringing her laws in tune with the TRIPS. Being the largest democracy of the world, India has to evolve a political and social consensus before bringing in new laws, and the process of having a bill passed from both houses of parliament has to be gone through. India's patent laws

were enacted in 1856, i.e. even before her first war of independence, these were amended from time to time. The pre-indendence laws were replaced by the Indian Patent Act, 1970 which has now undergone revisions in 1999 and 2002 to make them TRIPS compliant. A new amendment is presently on the cards. A new Design Act 2000, replaced the Design Act of 1911. A new Trademark Act 1999 has been enacted. The Indian Copyright Act which is comparable to any forward looking law of any other country; was first enacted in 1957 and then amended from time to time in 1983, 1984, 1992, 1994 and 1999. A new act for protection of IC layout design "The Semiconductor Integrated Circuit Layout Design Act 2000" has been promulgated. The Geographical Indication of Goods (Registration and Protection) Act was enacted in 1999. A new act for the protection of new plant varieties and farmers' rights is also in place. Further, India is now a member of the Paris Convention, the Patent Cooperation Treaty and the Budapest Treaty.

First Policy Breakthrough

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.

Indian S&T scenario

The national expenditure on Research and Development (R&D) 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%. It may not be out of place to mention that for the first time in the national survey 1998-99, the scope and coverage of the

R&D activities has been revised and substantially enlarged by including R&D expenditure incurred in higher education sector, small scale industries sector (pilot study), and private firms not recognized by the Department of Scientific and Industrial Research. 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.

6.0 The Science and Technology Policy 2003

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 commercialisation, 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 commercialisation 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.

Patents

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

What is expected from patentee as an obligation to the state?

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.

What are the conditions to be satisfied by an invention to be patentable?

An invention must satisfy the following three conditions of :

(i) Novelty (ii) Inventiveness (Non-obviousness) (iii) Usefulness

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. 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.

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.

Usefulness: **An invention must possess utility for the grant of patent No valid patent can be granted for an invention devoid of utility.**

When should an application for a patent be filed?

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 (ii) there may be either an inadvertent publication of the invention by the inventor himself/herself or by others independently of him/her.

Can a published or disclosed invention be patented?

No, 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 t11ere is no

contradiction between publishing an inventive work and filing of patent application in respect of the invention.

What is considered as the date of patent?

The date of patent is the date of filing the application for patent (whether provisional or complete). The term of the patent is counted from this date.

What is the term of a patent in the Indian system?

Term of the patent is 20 years from the date of filling for all types of inventions

How does one keep a patent in force for the full patent term?

A patent has to be maintained by paying the maintenance fees every year. If the maintenance fees is not paid, the patent will cease to remain in force and the invention becomes open to public. Anyone can then utilize the patent without the danger of infringing the patent.

What are the essential patent documents to be generated and submitted by a potential patentee?

There are two types of patent documents usually known as patent specification, namely

(i) Provisional Specification and (ii) Complete Specification

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 a 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.

Complete Specification

Submission of complete specification is necessary to obtain a patent The 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.

What are the criteria for naming inventors in an application for patent?

The naming of inventors is normally decided on the basis of the following criteria:

i. All persons who contribute towards development of patentable features of an invention should be named inventor(s).
ii. All persons, who have made intellectual contribution in achieving the final results of the research work leading to a patent, should be named inventor(s).
iii. A person who has not contributed intellectually in the development of an invention is not entitled to be included as an inventor.
iv. A person who provides ideas needed to produce the 'germs of the invention' need not himself / herself carry out the experiments, constructs the apparatus with his/her own hands or make the drawings himself/herself. The person may take the help or others. Such person who have helped in conducting the experiments, constructing apparatus or making the drawings or models without providing any intellectual inputs are not entitled to be named inventors.

Quite often difficulties are experienced in deciding the names of inventors. To avoid such a situation, it is very essential that all scientists engaged in research should keep factual, clear and accurate recorded of daily work done by them in the form of diary. The pages in the diary should be consecutively numbered and the entries made be signed both by the scientists and the concerned leader.

What is the nature of information needed while consulting a patent attorney?

As an inventor one should share the complete invention with a patent attorney in the same manner as a patient confides in a doctor. A s a doctor may not be able to write a correct prescription without knowing the details of the disease/problem, a patent attorney may not be able to draft a good specification in the absence of details about the invention. Following points should be kept in mind while discussing with the attorney:

i. Provide complete details of the invention including failures, if any, on the way to the invention.

   Do not feel bad if attorney asks you questions like where did you get the idea from or did you copy the idea from somewhere or are you keeping other inventors working with you on the inventorship or have you published the invention or disclosed it in a seminar/conference or have you displayed the invention in an exhibition? A patent document is a techno-legal document, hence all precautions are to be taken right from the first step. Provides right answers and you may even show your laboratory note book/log book to the attorney. This will help the attorney / agent to explain the inventive step in a precise manner and draft a good specification and associated claims.

ii. Explain the central theme of the invention and novelty, inventiveness and utility of the invention.

iii. Share all the prior art documents in your possession with the attorney.

iv. If you have developed an improved version of your competitor's product/process, admit it and be totally honest. This would help the attorney in drafting precise claims and avoid excessive claims, which might be struck down immediately or at a later date.

v. A detailed description of the best way of putting the invention into practical use, results of your tests and trials, etc., including all failures and defects should be given to the attorney.

vi. Alternative ways of using the invention, and the substitutes or parts of it i.e., will one chemical compound do as well as any other in the process?

vii. It may be worth drafting the patent widely enough to cover less satisfactory alternatives as well so as to prevent rivals from marketing a less satisfactory competing product which because of its defects might bring the whole genre of product into disrepute or which may be cheap.

viii. Both after an initial search and during the course of the filing and grant of a patent application, it is important to respond quickly and accurately to queries which the patent attorney may have. Thus the client should keep the patent attorney informed of any new developments in the field of invention carried by the patentee or some one else.

What is opposition under the Indian Patents Act 1970?

After the Patent Office has examined an application and found it in order for grant of a patent, it publishes the title pf the invention, name of the inventor(s) and the applicant(s), abstract of the invention, drawings and claims in the Gazette of India, Part III Section 2, for interested parties to oppose the grant of the patent. An application for opposition may be filed at the concerned Patent Office branch within four months of the date of the issue of the concerned gazette. An extension of one month is possible; a request for extension has to be made within the first four months. Typed or photocopies of the specification together with photocopies of the drawings, if any, can be obtained from the Patent Office, Calcutta or the concerned branch office on payment of the prescribed fees. One would like to oppose if the idea of the accepted application infringes upon one's invention/existing patent, if the coverage of the proposed patent is very wide which may be detrimental to one's research or if the idea is not novel and so on.

What is the cost of filing a patent application in India?

The Government fee for filing a patent application (complete/provisional) in India is Rs.750/- for individuals and Rs.3,000/- for legal entities. An applicant is now required to make a request for examining the patent application within 48 months of filing of the application. In case of applications filed before May 20, 2003 examination request has to be made within the 48 months of filing of the application or within 12 months from May 20, 2003 whichever is

shorter. An individual has to pay Rs.1,000/- as examination fee and Rs.3,000/- for legal entities. A sealing fee of Rs.1,500/- for individuals and Rs.5,000/- for legal entities has to be paid at the time of grant (sealing) of patent.

What is the distinction between a patented invention and know how?

The law does not require that the information disclosed in the patent specification be sufficient for commercial exploitation of the invention. Thus, patent usually will not disclose sufficient information for commercialization. Know how on the other hand, covers all information necessary to commercialize the invention e.g. setting up a production plant. Such information would include, for example, details of the production methods, the design drawings etc. It is this know how which is traded while transferring technology. Know how is always kept as a trade secret and not shared with public. Know how is not protected through patents as most of it is non-patentable matter and one does not take patent on the remaining parts to avoid public disclosure. A know how developed around an existing patent and commercialized subsequently may be an infringement of the patent unless the patentee has agreed to commercialization on mutually agreed terms.

Is a patent granted in one country enforceable in other countries?

No. There is nothing like a global patent or a world patent. Patent rights are essentially territorial in nature and are protected only in a country (or countries) which,has (have) granted these rights. In other words,-for obtaining patent rights in different countries one has to submit patent applications in all the countries of interest for grant of patents. This would entail payment of official fees and associated expenses, like the attorney fees, essential for obtaining patent rights in each country. However, there are some regional systems where by filing one application one could simultaneously obtain patents in the member countries of a regional system; European Patent Office is an example of a similar system.

Does grant of a patent in one country affect its grant or refusal in another country?

Each country is free to grant or refuse a patent on the bases of scrutiny by its patent office. This means that granting a patent in one country of the Union does not force other countries to grant the patent for the same invention. Also, the refusal of the patent in one country does not mean that it will be terminated in all the countries.

What is '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 w.e.f. 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.

What is an EMR?

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 of 5 years or until the time the product patent laws come into effect.

Does India have provision for grant of EMR?

Yes. 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.

What is industrial property?

Industrial property includes:

(a) Patents (b) Utility models (c) Industrial designs (d) Trademarks, service marks and trade names (e) Indication of source or appellations of origin (this is same as the geographical indications adopted in TRIPS);

Paris Convention

The Paris Convention is an international convention for promoting trade among the member countries, devised to facilitate protection of industrial property simultaneously in the member countries without any loss in the priority date. All the member countries provide national treatment to all the applications from the other member countries for protection of industrial property rights. The Convention was first signed in 1883. Since then, the Convention has been revised several times, in 1900 at Brussels, in 1911 at Washington, in 1925 at the Hague, in 1934 at London, in 1958 at Lisbon and in 1967 at Stockholm. The last amendment took place in 1979. India became a member of the Paris Convention on December 7, 1998. *(Readers may note the use of the phrase 'Industrial Property' and not Intellectual Property).*

The principal features of the Paris Convention have been listed below

- National treatment
- Right of priority
- Independence of patents
- Parallel importation
- Protection against false indications and unfair competition

The concept of National treatment is very important in the context of international trade and commerce. It is essential to follow this concept for successfully achieving the fundamental aim of the Paris Convention. The idea is to provide equal treatment to applications from member countries, in a given member country and not to differentiate between the nationals of your country and nationals of the other countries for the purpose of grant, and protection of industrial property in your country. Imagine that a national of country X applies for grant of a patent in India. According to the Paris Convention, the Indian Patent Office shall apply the same norms and rules, to the applicant from X, as applicable to an Indian applicant, for granting a patent. Similarly the applicant from X shall have the same protection after grant and

identical legal remedies against any infringement shall be available to the applicant provided the conditions and formalities imposed upon Indians are complied with. No requirement as to domicile or establishment in the country where protection is claimed, may. be imposed.

The right of priority which effectively emerged with the Paris Convention has become a backbone of the system for protecting inventions simultaneously in many countries. The date from which patent right is deemed to start is usually the date of filing of complete specification. To obtain rights in other member countries, the application must be filed on the same day in other member countries if it is desired to have the rights started from the same day. However, there are practical difficulties in synchronizing the activities. For facilitating simultaneous protection in member countries, the Convention provides that within 12 months of national filing, if patent applications are filed in those member countries, the patents, if granted in member countries, will be effective from the date of national filing. This right is known as the right of priority. In other words you maintain the priority or the same date of filing in all the member countries and no one else in those countries can obtain the patent rights on a similar/identical invention from the same or a later date.

In case the applicant after a second look at the patent application finds that the patent contains more than one invention or on his own accord wishes to divide the application, he can claim the initial date of priority for subsequent patent applications. The applicant may also, on his own initiative, divide a patent application and preserve as the date of each divisional application the date of the initial application and the benefit of the right of priority, if any. Each country of the Union shall have the right to determine the conditions under which such division shall be authorized.

Priority may not be refused on the ground that certain elements of the invention for which priority is claimed do not appear among the claims formulated in the application in the country of origin, provided that the application documents as a whole specifically disclose such elements.

Importation is considered as working of patent, provided the patented product is manufactured in a member country and is imported into another member country which has also granted a patent on the same invention to the same applicant. Imagine that a product X has been patented in two member countries A and B. The product X is then manufactured in country A and

imported into the country B. This product X shall enjoy the same patent protection in the country B even though it has been manufactured in the country A. This would also be considered as if the patent has been worked in country B.

The Convention has a provision for compulsory license. Each member country shall have the right to provide for the grant of compulsory licenses to prevent the abuses resulting from the exclusive rights conferred by the patent. Compulsory licenses for failure to work or insufficient working of the invention may not be requested before the period of time of non-working or insufficient working has elapsed. This time limit is four years from the date of filing of the patent application or three years from the date of the grant. Such licenses will be a non-exclusive and non-transferable one.

It is mandatory for the member countries of the TRIPS Agreement to comply with the Article 1 to 12 and Article 19 of the Paris Convention.

Apart from the advantages mentioned above, a member country can become a member of a number of international conventions and treaties, which are open only to the members of the Paris Convention. Some of these are:

- Patent Cooperation Treaty (PCT)
- Budapest Treaty (for deposition of microorganisms)UPOV (for protection of new varieties of plants)
- Madrid Agreement (for repression of false or deceptive indications of source on goods)
- Madrid Protocol (concerning registration of marks)
- Hague Agreement (concerning deposits of industrial designs)

Budapest Treaty

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 it. Because of the difficulties and on occasion of 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. The Treaty was signed in Budapest in 1973 and later on amended in 1980. India has become a member of this Treaty, with effect from December 17, 2001.

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 number needs to be quoted in the patent application. 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 many countries, which are recognized under the Budapest Treaty.

The Indian Patent Act has specific provisions for patenting of microorganisms and microbiological processes. In order to meet the obligations under TRIPS. India is required to introduce a patenting of microorganisms. In regard to patenting of microorganisms, the situation is not clear whether a microorganism isolated from nature would be patentable or not.

Patent Cooperation Treaty (PCT)

The Patent Cooperation Treaty (PCT) is a multilateral treaty entered into force in 1978. Through PCT, an inventor of a member country (Contracting state of PCT can simultaneously obtain priority for his/her Invention in all/ any of the member countries, without having to file a separate application in the countries of interest , by designating them in the PCT application .India joined the PCT on December 7, 1998.

All activities related to PCT are coordinated by the World Intellectual Property Organization (WIPO) situated in Geneva.

Need for PCT ?

In order to protect your invention in other countries, you are required to file an independent patent application in each country of interest; in some cases , within a stipulated time to obtain priority in these countries .This would entail a large investment, within a short time, to meet costs towards filing fees, translation, attorney charges etc. In addition you are making an assumption which, due to the short time available for making the decision on whether to file a patent application in a country or not , may not be well founded .

Inventors of Contracting States of PCT on the other hand can simultaneously obtain priority for their inventions without having to file separate application in the countries of interest ; thus

saving the initial investments towards filing fees, translation etc. In addition the system provides much longer time for filing patent application in member countries. The time available under Paris Convention for securing priority in other countries is 12 months from the date of initial filing. Under the PCT, the time available could be as much as minimum 20 and maximum 31 months. Further, an inventor is also benefited by the search report prepared under the PCT system to be sure that the claimed invention is novel. The inventor could also opt for preliminary examination before filing in other countries to be doubly sure about the patentability of the invention .

Handling of PCT applications

The patent office or nay other office designated by each contracting state becomes a receiving office for receiving patent applications These applications are referred to International Searching Authorities (ISA) which usually the patent offices, appointed to carry out the patent search on a global basis. In case the receiving office is also an ISA, a separate referral is not required . There is also a provision to get a patent application examined by international preliminary Examining Authorities which, in most cases are ISA.

What is the meaning of delayed processing of the application by the national phase or the regional phase?

A search report on the patent application filed with a receiving office is received by the applicant/inventor 16 months after the priority date which is nothing but the date of submitting the application in the receiving office. The International Bureau of the WIPO publishes the application and the search report 18 months after the priority date. The original application is then sent to the designated offices indicated in the application. Within two months of this i.e. by the 20^{th} month, the applicant will have to formally apply to the patent offices of these countries for grant of patents by paying official fees and completing other formalities stipulated by these offices (some countries). In case translated copies of the application are required, the same has to be furnished by the applicant. In spite of submitting the request for grant of patents in designated countries in the 20^{th} month after the priority date, the priority in these countries is the same as the date of filing the original PCT application.

If applicant/inventor has requested for an examination report, the report is usually received by the applicant /inventor about 28 months after the priority date. Within two months

of this, the applicant/inventor will have to formally apply for grant of patents in designated countries .The priority of the application is maintained in the designated countries.

Benefits of the delayed processing

(a) By the end of the 20th to 31st month the applicant is in a better position to assess the quality of the invention being protected as a detailed search report or an examination report or both would be available to help making an assessment.

(b) Applicants can re-evaluate their decision about filing applications in all the designated countries after a long gap of 20 to 31 months.

(c) If not satisfied, applicants may decide to drop a few countries from the list. This decision would also be influenced by the changing market conditions.

(d) Applicants can delay their investment in respect of the national phase or the regional phase applications by 20 to 31 months without sacrificing priority.

An international application can be filed in any of the Branch Offices of the Patent Office located at New Delhi, Chennai, Mumbai and Kolkata (Head Office). Any of these Offices shall function as receiving office, designated office and elected office for the purpose of international applications filed under the Treaty.

An international application shall be filed in the Patent Office which would process the application in accordance with these rules and the provision under the PCT.

Will an international application designating India be treated as an application for grant of patent under the 1970 Act?

Yes, an international application designating India shall be treated as an application for patent under the Act.

What is the cost of filing a PCT application?

The schedule of fees is given below for filing with International Bureau directly:

1. (a) Basic fee up to 30 sheets of a patent application	650 Swiss francs
(b) Basic fee for a patent application having more than 30 sheets;	650 Swiss francs plus 15 Swiss francs for each sheet in excess of 30 sheets
2. (a) Designation fee if designation is less than 5 (Countries)	140 Swiss francs per designation
(b) Designation fee if designation is more than 5 (Countries)	700 Swiss francs
3. Handling fee	233 Swiss francs

4. Search fees are additionally payable

5 All fees payable are reduced by 75% for applications filed by any applicant who resides in a PCT Contracting State where the per capita national income is below 3000 US dollars. If there are several applicants, each must satisfy the criterion. It may be noted that no concessions are available in the national phase or regional phase applications; respective fees in these phases will have to be paid by the applicant.

Where do you pay the fees and in which currency?

All types of fees are payable at the receiving office and it is the responsibility of the receiving office to remit the search fees to the concerned office if the receiving office is not the search authority. Similarly, all other charges due to other agencies, would be remitted by the receiving office. The fees are payable in the currency acceptable to the receiving office as an Indian you can pay all the fees in Indian rupees.

Protecting new plant variety

New plant varieties can be protected in India. India has enacted the New Plant Variety and Farmers Rights Protection Act in 2001 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 and penalty for marketing spurious propagation material.However, in many countries such plants can be protected

through Breeders Rights, patent and UPOV Convention. According to TRIPS Members could protect new plant variety through patent or a sui generis system or a combination of these two systems.

What is UPOV?

UPOV is an abbreviation of Union Pour la Protection des Obtentionsw Vegetable (Union for protection for new varieties of plant). It is an international convention which provides a common basis for the examination of plant varieties in different member States of UPOV for determining whether a plant variety merits protection under UPOV or not.

Criteria for deciding protection of a plant varieties

There are 5 main criteria to arrive at a decision whether a plant variety is really new or not. These have remained unchanged between 1978 and 1991 Acts of the Convention. These criteria are:

1. **Distinctness** : The variety shall be deemed to be distinct if it is clearly Discountable from any other variety whose existence is a matter of common knowledge at the time of filing of the application .The object of this criterion is to ensure that the candidate variety can be identified amongst all other varieties whose existence is known, whether or not they are protected. An application for protection or for the entry of a variety in an official register in any country causes the variety to be recorded as a matter of common knowledge. In other words, the application for the protection should be filed with UPOV before disclosing it to any other agency.

2. **Uniformity**: 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 objective of this criterion is to ensure that the individuals representing the variety which is a candidate of protection, form a group which is identifiable on the basis of the description of its characteristics. In other words, the variation between individuals within a variety must be less than that within a species. In the absence of this condition it would become impossible to identify distinct varieties within species.

The degree of uniformity is determined taking into account the mode of reproduction of the species and all the genetic structure of varieties. The same levels of uniformity cannot be required for a strictly self pollinating species or for a species which is vegetatively propagated. An acceptable level of uniformity would ensure that it can be used for agricultural production. In this regard the difference between the protection, given by UPOV and patent system can be noted.

3. **Stability**: 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 idea is to ensure that the variety will be identical to the description established at the moment of granting protection after repeated propagation.

Stability, as well as uniformity may be lost if the rights holder fails to maintain the variety true to the description established when the rights were. granted.

4. **Novelty**: 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. It is also understood that a variety to which people have had free access in the past cannot be protected because then the interest of those w,ho have relied on the free access, will suffer.

As it is some time necessary to see the response of the market to new varieties before deciding whether or not to apply for protectioll, grace period has been included. The period is one year prior to the date of application in the country where the application is filed and in countries other than that in which the application has been filed and six years in case of trees and vines and four years for all other species.

5. **Appropriate denomination**: 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'. Users and consumers need to have some method of knowing that a sample is a sample of a particular identified plant variety; because it is often not possible to identify it from its appearance. This is facilitated by requiring that a specific denomination and only that denomination be used to identify a variety in trade.

Obtain patents and enjoy the incentives

An innovative industry in India can gain competitive advantage in the market in India 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.

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. *This provision was made in 1996-1997 when an Indian resident, as per the Indian Patent Act 1970, was required to file a patent application first in India and then anywhere else. In the amended Patent Act this provision has been diluted and would be applicable only in case of those inventions, which may be important from defence and security reasons. Going by the spirit of the excise duty provision, it is felt that filing in India and obtaining a patent in India would continue to be necessary*. 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 the basic stage 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 I 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 on 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.

Trademarks

A trademark is a distinctive sign, which identifies certain goods or services as those produced or provided by a specific person or enterprise. A Trademark may be one or a combination of words, letters and numerals. It may also consist of drawings, symbols, three-dimensional signs such as the shape of goods and their packaging, fragrances or colours and combination of colours. It is used by traders / companies/ firms etc to distinguish their goods and services from those of their competitors. A consumer associates some level of quality / price / prestige with the goods of a particular trademark. In other words the consumer uses the trademark for making a choice while buying a particular product. There are so many examples in our day to day life such as TATA, BATA, Liberty, Brooke Bond, Dabur, Vaidyanath, Park Avenue, SAIL and so on. Trademarks do not protect the design or the ideas behind the goods or services from imitation or duplication, but prevent other traders / company / firm from deceiving customers into believing that goods or services actually produced by them were produced by the trademark holder.

As per the Indian laws, fragrances cannot be used as a trademark. According to the Indian system a trademark can also be used for goods or services for indicating a connection in the course of trade between the goods or services, as the case may be, and some person having the right as proprietor to use the mark. Further, a mark may be used for the purpose of indicating or so to indicate a connection in the course of trade between the goods or services, as the case may be, and some person having the right, either as proprietor or by way of permitted user, to use the mark whether with or without any indication of the identity of that person, and includes a certification trade mark or collective mark.

The Indian Act

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.

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.

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.

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.

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.

Different treaties

International treaties in this subject area have evolved to promote international trade with the least risk of unfair competition. As mentioned earlier, intellectual property rights tend to be territorial most of the time, unless special efforts are made to obtain these rights in other countries. In order to have a trademark registered in other countries an Indian company will have to register its trademark in those countries by satisfying their legal requirements such as paying the registration fees. India is not yet a member of those international treaties, which facilitate getting trademark registered simultaneously in many countries with one application. The main treaties which govern grant of trademark rights in many countries are:

1. **Paris Convention**

This Convention has been discussed elsewhere. In the specific context of trademark, under this convention, a person applying for a trademark in India can apply for the same trademark in member countries within six months of filing in India and get the priority of the Indian application in those member countries. The earlier (Indian) application cannot be for a narrower class of goods than that specified in the subsequent applications (filed in other

countries). Some might argue that the facility offered by the Convention is not significant as the prior use or publication of a trademark does not prevent obtaining a registration in other countries, as happens in the case of a patent. The common principle to be followed in case of all the forms of IPR is that the application for registration should be filed as quickly as possible. If you don't, someone else will and you will lose your right, which you have missed by not being careful, active, fast and vigilant. Therefore, the period of six months does provide a cushion for maintaining your priority and till that time no one else can take the benefit of registering the same trademark in those countries.

2. Madrid Agreement 1891

The Madrid Agreement was adopted on April 14, 1891 to facilitate protection of a trademark or service mark in several countries by means of a single international registration. As on July 15, 1999, 54 countries are party to this Agreement, these mainly belong to Europe, others are countries of Africa and four countries in the Far East namely, China, the Democratic People's Republic of Korea, Mongolia and Vietnam. The United Kingdom, the United States of America, most Latin American countries, Japan and India are not signatories to this agreement. The Agreement covers both trademarks and service marks.

The main features of the Madrid Agreement are as follows :

1. An applicant must be a national of a member country. A person having his domicile or a real and effective industrial or commercial interest in such a country is also eligible. It may be noted that this would be governed by the national laws of the country in question.
2. A mark to be registered in member states should be first registered at the national level in the country of origin of the applicant. The first registration is called 'basic registration'.
3. The country having given the basic registration can only transmit the request for international filing to the International Bureau of the World Intellectual Property Organization (WIPO) along with the list of the countries in which protection is being sought. There is no provision for directly filing a request under the Agreement.
4. It may be iterated that the country of origin has to be a member state. The role of the office of the country of origin is not only to send the application for international

registration but also to certify that the mark, which is the subject of the international registration, is the same mark that is the subject of the basic registration.

5. For each application, fees has to be paid for each designated country and WIPO. The fees paid for the designated countries is called the 'complementary fee'.
6. The International Bureau notifies the international registration to the offices of the designated countries and publishes it in a monthly periodical called 'The WIPO Gazette of International Marks'.

If, during the first five years the basic registration is for some reason, cancelled in the country of origin, the international registration automatically stands cancelled in all the designated countries. This gives an advantage to a person to oppose the registration of a mark only in the country of origin and without the need to oppose it in all the designated countries. This possibility of challenging an international registration through a national registration is referred to as 'Central Attack' feature of the Agreement.

India is presently not a member of the Madrid Agreement. As the economy opens up and Indian companies start expanding their presence in foreign countries, India might also become a member thus it would be advantageous to know a little bit about this Agreement. A company from a member country can register his trademark in his own country and then can acquire the right in all signatory states by depositing the registration at an International Office in Berne. Once this is done the mark is valid in all those countries unless there is some conflicting mark on the register of one or more of those countries. The mark will however be valid in all the remaining countries. It may be clearly understood that the Madrid Agreement does not provide for a world trademark; it merely eliminates the need for filing multiple applications in Member countries to acquire a series of national trademarks. Obviously, India cannot take the advantage of this Agreement as she is not yet a member of the Agreement.

3. Madrid Protocol

The Madrid Protocol was formed to remove some of the features of the Madrid Agreement, which posed obstacles to accession by several countries. The Protocol relating to the Madrid Agreement concerning the International Registration of Marks was adopted at Madrid on June 27, 1989. The Protocol, which entered into force on December 1, 1995, retains the basic features of the Madrid Agreement. As on July 15, 1999, 39 countries have acceded to the Protocol. These features are:

1. For an international registration, it is essential to first register a mark at the national level. The time required for obtaining a mark at the national level varies from country to country. Hence some parties do suffer.
2. Within one year, a designated member country has to examine and issue a notice of refusal by giving all the grounds for refusal. The period was considered short.
3. A uniform fee is paid for the designation of a member country. This was found to be inappropriate for countries with high level of national fees.
4. An international registration is linked to the basic registration during the initial five years and the former gets cancelled if latter is cancelled. The fact that grounds under which a mark is cancelled in the country of origin need not necessarily exist in every other designated country, is overlooked.
5. The only working language of the Madrid Agreement is French.

Innovations introduced by the Madrid Protocol are :

1. An international application need not necessarily be based on a registration made by the Office of Origin but can also be based on an application filed with the Office of Origin. This makes it convenient for countries with full examination system where the national registration takes time. It also makes it possible to claim the right of priority of six months under the Paris Convention.
2. A Contracting Party can receive the fee under the existing Madrid Treaty system through its share in the international fees collected: for each designation made as in the Madrid Treaty. Alternatively, the member country can choose "Individual fee" system for each designation made, which should be an amount, not more than the national fee for a ten-year registration. The "Individual fee" system makes an attractive proposition for countries with high level of national fees.
3. It is possible to transform an international registration into national or regional application in the designated Contracting Parties, if the basic registration is cancelled for some reasons, as in the case of "Central Attack".

An applicant may choose to base an international registration in any of the Contracting States with which he has connection through nationality, domicile or establishment.

4. Trademark Registration Treaty 1973

This treaty is administered by the World Intellectual Property Organization and aims at acquisition of trademark protection in a number of countries through a single application filed in a central office in the WIPO. There is no need to file the application first in the national office in the home state. The treaty came into force in 1973 when it was signed in 1973 in Vienna. In fact many advanced countries having strong trademark laws are not members of this treaty. India is not yet a member of this treaty.

Criteria for legal protection

A trademark application will be judged by the following three criteria:-

1. It must be distinctive.
2. It must not be descriptive of the product.
3. It must be different from other trademarks.

Apart from the legal factors, it is also necessary to keep the commercial aspects in mind. A trademark is a valuable asset and expenses on creating and registering a trademark should not be a restricting factor. Most importantly, a TM should be distinctive and this distinctiveness can be established by keeping certain records. The date of the first use of the TM, and of the goods and services covered by it, should be recorded. Have a complete list of the areas where the TM has been used or where it is known to the public. Have a record of gross turn over of goods and services sold under the TM. Amount of money spent on making the TM known to the public through TV, newspapers, periodicals, advertisements, use of the TM on letterheads, invoices etc or any other media should be in your records.

You can lose your TM

All IPRs, except copyrights, are such that they have to be renewed from time to time to keep them effective. This is usually done by paying the official fees to the Trademark Office as prescribed in the law. The fees will vary from one national office to the other. If you do not

renew your mark you can lose it forever. In India, the registration has to be renewed after every 10 years.

A mark can be removed from the register of trademarks, if the owner fails to use it. If it is not used for a period of 5 years after its registration, it is open to any one to bring a case for cancellation of the trademark on account of non-use.

A trademark, if not cautiously used, may become generic in nature meaning thereby that the trademark becomes a word normally used for the type of an article concerned rather than the particular brand or source of manufacture. 'Xerox' was a trademark obtained by Rank Xerox for its photocopying machines. However, over a period of time Xeroxing became synonymous with photocopying and the word xeroxing in place of photocopying. As the company did not take any precaution in ensuring that its trademark is not used for photocopying. As a result, the company lost its trademark. There are other reported case laws in this aspect. Other examples of similar nature would be related to nylon and linoleum, which were well known trademarks before they became a household name. The concerned companies failed to retain them as their trademarks. This brings us to the question of what do you do to avoid your trademark becoming a generic name?

The term should be used as a proper adjective and never a noun. Do not play around with your trademark so as to make it a verb. You may coin a convenient short trade name as well as a short generic name and they should both appear together in all advertisements and labelling of the product so that there is no temptation in the public mind to use one word as a substitute for the other. Keep a good watch over the usage of your trademark. One can possibly think of educating people through media. If some wrong use is observed, you should take steps to stop the use. You can also use a special type of lettering for the trademark. Use your staff as your policemen to find wrong use of the mark. Use your mark on your letterhead, trade literature etc. in exactly the same form in which they are registered.

Avoid dilution of trademark

It may so happen that other companies may start using similar trade names or may register them which would ultimately dilute the importance of your trade name. As a company you should have a policy and method to locate use of similar trademarks or infringement of the trademark and to challenge them when any attempt is made to register them. Preserve your

registration in as a wide a range of classes as possible. Design of your mark can be an important factor. If a trademark design is very complicated with many distinct elements, it may be vulnerable to dilution through use of other marks which omit certain details.

Handling trademark infringement

Litigation costs in trademark cases may not be as high as is seen in patent cases. It is quite straight forward to arrive at the decision on whether a trademark is a copy of some other trademark, or not. The decision will largely depend on the visual inputs which can be quickly understood and used for establishing the distinguishing features. However, the process of determining as to who started using the trademark first and whether a trademark is a common law trademark or registered trademark would consume some time in decision making although this question could be settled by producing documentary evidence. The conflict of similar / copied trademark can be on one of the following grounds:-

- Whether the trademark is a common law trademark
- Whether the mark is a registered mark
- Whether the mark is at the application stage
- Whether you have similar trademark
- Whether your trademarks are registered for the class of goods or services in question
- Whether you have planned to use the trademark in the near future.

The action against a similar trademark should be brought to the court as soon as possible. In case you do not act fast, the defendant can generate some evidence under the common law, which may be more beneficial to the defendant.

Industrial Design

We see so many varieties and brands of the same product (e.g.car, television, personal computer) in the market. 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. The designs can be protected under Industrial Design. The objective of the Designs Act is to protect new or original designs so created to be applied or applicable to particular article to be manufactured by industrial process or means. Sometimes purchase of articles for use is influenced not only by their practical efficiency but also by their appearance(THOUGHT REPEATED). The important purpose of design registration is to see that the artisan, creator, of originator of a design having an aesthetic look is not deprived of his bonafide reward by others applying the same look to their goods.

"Design" does not mean only 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.

Essential requirements for the registration of design under the Designs Act, 2000

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 trade mark 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.

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.

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 any where 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.

The registration of a design may be cancelled at any time after the registration of design on a petition for cancellation in Form 8, to the Controller of Designs, with a fee of Rs. 1500/- on the following grounds:

1. That the design has been previously registered in India;
2. That it has been published in India or elsewhere prior to the date of registration
3. That the design is not new or original;
4. That design is not registrable;
5. That it is not a design under Clause (d) of Section 2.

Hague Agreement on Industrial Designs

The Hague Agreement concerning the International Deposit of Industrial Designs first came into existence in 1925. The Agreement aims at providing a mechanism for securing

protection of an industrial design in all the member countries by means of an international deposit. The international deposit could be in the form of the industrial product or drawing or photograph or any other graphic representation of the said design. The duration of protection was 15 years from the date of deposit, the is divided in two periods namely, one period of five years and the other of ten years. This Agreement is now being implemented by the WIPO.

A Diplomatic Conference was held in June and July 1999 to bring some amendments in the Hague Agreement. The revised agreement will come into effect after it has been ratified by six of the initial signatory nations to the Agreement. The idea is to provide a way through which a single design application can give rights of protection for that design in member countries. The international design application must designate countries where protection will be sought. The designated countries can refuse to award design rights, if the application does not meet the requirements of national laws. The Agreement does not lay down any particular standards for registrability of the design, leaving this to national laws. Once registered, the international registration will have the same effect as a national design registration in those designated countries that have not refused grant for national registration. The other main features of the revised agreement/ treaty are:-

1. International design protection will be available to nationals of a contracting country, domiciled in a contracting country or have industrial or commercial establishment in a contracting state.
2. An international design application may be filed either at the applicant's national office or directly with the International Bureau of WIPO.
3. Two-dimensional designs (textile designs) would be eligible for protection.
4. A formalities examination will be carried out by the International Bureau and the application will be published if it is found to satisfy the formalities. The publication will be made six months after the registration. This can be deferred to 30 months in some special cases.
5. The International Bureau will, after the registration, send a copy of the application to each of the designated countries. These countries have to inform the Bureau within six months if the national requirements are not met. However, for countries that examine design applications for novelty or where opposition system exists, this time is increased to 12 months.

6. Multiple designs may be included in the same application. It is however, required that all products to which such designs relate must be in the same class under the Locarno classification.

It can be seen that there are some similarities with the PCT system for patent applications. India is not yet a member of the Hague Agreement and hence the above provisions or description may not be of immediate relevance to us. However, there is a strong need to monitor the developments in this area.

Copyrights

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, provide 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. 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.

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 an infringement of the copyright. There is a provision of 'fair use' in law, which allows copyrighted works to be used for teaching and for 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 an associated right with copyright, 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. As per law the copyright in any work created by an individual(s) when in employment would automatically vest with the employer unless there is an agreement contrary to this between the employer and the employee.

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.

What does copyright cover?

(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) Record-any disc, tape, perforated roll or other device.

What are the rights of a copyright holder (which when violated lead to infringement)?

(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 t he 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.

How is a computer defined for the purpose of copyright?

A Computer includes any electronic or similar device having information processing capabilities.

What is the definition of a computer program?

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.

What is the term of a copyright?

a. If published within the life time of the author of a literary work the term is for the life time of the author plus 60 years.
b. For cinematography 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.
c. For broadcasting the term is 25 years from the beginning of the calendar year following the year, in which the broadcast was made.

Is it necessary to deposit accompanying documents of the computer program for which copyright is being sought?

The documentation which normally accompanies the program is regarded as a separate work and for this reason if the same has to be registered, it must be separately registered and not combined with the computer program in a single application.

If an employee in a company develops a program, would this employee own the copyright?

No. 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.

If an independent third party develops a program for a company, who owns the copyright?

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.

What is the rule for the 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.

Is there a possibility of divulging secrets through deposit of source code?

Once the copyright is registered, the work is open to public inspection. For this reason, it is advisable, to only file a small extract of the computer program rather than the full program itself. It is important, however, to know that the part of the computer program which is not being filed would remain the trade secret of the owner and can be subject matter of a protection against any person who wrongfully obtains and utilizes the said program.

In order to further ensure that secrets are protected, is deposition of computer program in object code permissible?

Although the recent amendment (1994) in the Copyright Act enlarges the meaning of a computer program, it is still not very clear as to whether it includes both object code and source code. However, keeping in mind the proclaimed object of the amendment, presumably the benefit of the Copyright Act will be available to both. As per experts' opinion, it is easier to determine from source code whether the deposit represents copyrightable material. Deposit of object code may be possible, but registration presumably would be accepted pending on

assurance that the code does represent copyrightable material. Procedures for these do not exist at present with the Copyright Office.

In some of the programs, the screens could be the most commercially significant aspect. Is it necessary to register the program screen separately from the underlying 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.

What notice needs to he put on computer program copies to seek copyright protection?

When a work is published with the authority of the copyright owner, a notice of copyright may be placed on publicly distributed copies. As per the Berne Convention, to which India is a signatory, 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.

What are the major provisions in the amended Copyright Act, 1999 with regards to computer programs?

The major provisions are:

(i) 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;

(ii) 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;

(iii) 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 thorough 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 phono 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.

A question is often asked about the ownership of copyright, and the licensing and assignment of copyrights. In case of patents, the basic ownership always rests with the inventor who in turn may assign his invention to his employer or some one else. As per the Indian laws, the situation in case of copyright is different from that in patents. Firstly, if an original work is created by some one as part of the employment or a contract, the copyright will belong to the employer or the one who has given out the contract unless there is an agreement to the contrary. Therefore, in case of a paper (scientific or otherwise) written by a faculty member of a university as part of his employment, the copyright will belong to the university and the concerned faculty member is not authorized to license or assign the copyright associated with the work to any publisher. In other words the faculty member does remain the author but he

does not own the copyright, meaning that he cannot transfer or license that right to any one. This is an important stipulation of the Indian Copyright Act and should be clearly understood by all concerned. Let us take a practical situation. A faculty member employed in a university generates a paper and sends it to a journal for publication. The journal, before publishing the paper, will require a licensing or assignment of the copyright to the publisher of the journal, which is essential for publishing the work. Most commonly the faculty member will license or assign the copyright to the publisher of the journal with out even consulting the university, which is the true owner of the work. First of all it is to be understood that no right can be licensed by an unlawful owner. In this case the transfer / licensing / assignment will be null and void. Who would be the loser in such a situation? The publisher of the journal stands to lose the maximum, as he has not verified the facts before the licensing was completed and he can lose all his rights, investments etc. He can also be charged with obtaining the work unlawfully. The author may be required to explain his action to the university authorities. The university may also lose because it may not be aware that its rights have been transferred. Under this situation the publisher may enjoy the benefits of all the rights, which go on to make the copyright, with out even asking the author because he knows that the author is not the lawful owner of the copyright. The rights can be restored to the university only after the matter is taken to the court. Therefore a correct understanding of the law is essential to protect the copyright correctly and adequately.

It is good to understand the difference between licensing and assigning copyrights. Licensing means that you as a licensor are giving limited rights to the licensee which would mean copyrights for a limited period of time or for a limited territory / geographical area or for a specified form of presentation (book or drama or film) or translation into one language or combination of these and so on. Assignment of copyright would mean that all the rights after the assignment, will belong to the assignee and as an assignor you will no longer have any copyright. This would also mean that the assignee is free to utilize the work in any manner except to avoid expression of your work in a form which would violate your moral rights or paternal rights. The Indian Copyright Act has stipulated certain provisions in regard to licensing. First of all the licensing has to be through a written agreement or a contract between the licensor and the licensee. Unless mentioned in the contract, the licensee is permitted to enjoy the copyrights with in India only. Further, the exploitation of the copyright must start wit in one year of the licensing, otherwise the rights will revert back to the original owner.

Protection of Undisclosed Information (Trade Secret)

It is difficult to define the term undisclosed information or trade secret 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. 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 an internal secret. The moment the product is in the market, many people will know about the product and hence the secret. The moment the product is known to others the trade secret associated with it will no longer remain a 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. The following seven points are usually taken into account for determining whether an information is really undisclosed / confidential or not:-

1. How much of the information, if at all, is known outside the business
2. How much information is known to employees and others involved in the business
3. What measures and efforts (including financial investments and other expenses) have been undertaken by the owner of the trade secret to keep the information confidential
4. Difficulty in duplicating the information
5. Value of information to the competitors and the owner.
6. Is the information being used commercially in a product / process / marketing etc.?
7. Does the information have potential value?

According to the leading case of Saltman Engineering Co. Ltd v Campbell Engineering Co. Ltd (1948) 65 RPC 203 it was said by Lord Greene that: "information to be confidential, must ... have the necessary quality of confidence about it, namely, it must not be something which is public property and public knowledge". Trade secrets in this sense are not strictly intellectual property in law but in practice have the same commercial significance. Unlike patents, trademarks and industrial designs, the essence of a trade secret lies in its secrecy. *The law does not confer a monopoly in a trade secret as provided in patents, and once, the trade secret is disseminated to the public, the property status ends because such dissemination injects the idea into the public domain.* In fact, the owner of the trade secret / undisclosed information has to utilize financial and other resources, to maintain the monopoly of the trade secret by keeping it confidential in true sense. *It must be remembered that the State does not*

grant the right through any form of registration in respect of trade secrets. In case of a dispute the courts will have determine the validity of a trade secret under question.

The issue of secrecy at the time of a dispute is of considerable importance regarding whether the plaintiff is entitled to injunctive relief to restrain its disclosure, use, etc., by the defendant. Should the information not be secret at the time of the suit, it may well be that the injunctive relief will not be an appropriate remedy[1]. Francis Gurry classifies trade secrets as either technical secrets comprising secrets relating to the production of goods and services, inventions and know-how of the first kind or as "business secrets" comprising cost and pricing data, sales statistics, list of customers and the source of supply, etc. of a firm. Business secrets give the firm a competitive advantage and are protected as confidential information.

According to TRIPS, a trade secret

(a) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;

(b) has commercial value because it is secret; and

(c) had been subject to reasonable steps under the circumstances, by person lawfully in control of the information, to keep it secret.

The Uniform Trade Secrets Act in the United States of America (UTSA) differs slightly in its definition of what is protected as a trade secret. According to the UTSA, trade secret means information, including [but not limited to] [technical or non technical data] a formula, pattern, compilation, program device, method, technique, [drawing] or process, [financial data, or list of actual or potential customers] that: i) [is sufficiently secret to] derive[s] independent economic value, **actual or potential**, from not being generally known to, [and not being readily ascertainable by proper means], other persons who can obtain economic value from its disclosure or use, and ii) is the subject of efforts that are reasonable under the circumstances to maintain secrecy. It may be noted that the UTSA also talks of potential value of a piece of information; a concept likely to be well understood by scientists and technologists. One example of trade secret having potential value would be the technique of drawing wires and tapes of high temperatue superconductors. The technique may not be economically feasible today, but can become million dollar earner after some time. The trade secret relating to the technique may not have an immediate commercial value but has a potential value. Therefore, it would qualify to be a trade secret.

[1] Trade Secrets and Know-how Throughout the World, Aaron N. Wise, Vol. 1 para 3.02 (1).

There appears to be little unanimity on what should / should not be undisclosed information among nations. One of the reasons could be that many countries have not paid enough attention to this important area of protection and thus, have very little experience, especially in the context of science and technology. Secondly*, most countries have developed the concept from the fear of unfair competition rather than from the realisation of the importance of information in the commercial context.* Cameron and Lyon identify what cannot be identified as confidential information:

- information which is already in the possession of the licensee, received from third parties without restrictions as to use;
- information already publicly available;
- information provided to the licensee in the future, from third parties who are not under any obligation of confidence to the licensor. The Restatement of Torts include specific provisions directed towards increasing the protection of trade secrets.

Advantages and Disadvantages of trade secret protection

One may question why opt for trade secrets when patent protection or other forms of intellectual property right protection are available. It may be noted that once a product comes into public domain, no trade secret can be attached to the product in most situations. By the very nature of industrial designs, it is difficult to maintain a trade secret once the product comes to the market. Similarly, there is no case to have some trade secret associated with a trademark. However, in case of an invention for which a patent has been obtained, some pieces of information can be kept confidential and need not be disclosed in the patent document. Therefore, trade secrets and patents have a relationship of complementarality. As an owner of IPR, a choice will have to be made regarding the portion of the inventive and original work to be protected by patents and the portion to be protected by trade secrets. For example, it would be a good idea to maintain trade secrecy during the period of pendency of a patent application, which may be few months to few years. The understanding of relative advantages and disadvantages of trade secrets in a given situation is essential to make the above choice.

Advantages of trade secret protection are:

- A process or technology or chemical formulation or design may not be patentable under a law, but it may still be sufficiently valuable to warrant some form of legal protection. This protection may be available through the trade secret route.
- A trade secret doesn't have to satisfy the criteria of inventiveness and utility as required

by patent laws in respect of an invention.

- An invention is made and application for patent is filed. This should be filed as soon as possible so that it may not be anticipated by any other inventor working in a similar area anywhere in the world. One need not bother about such possibilities while creating a trade secret.
- The patent document has to disclose to the public the method or process to work the invention. However, after the invention, the inventor must still work practical details of say, workshop technique so that the invented product or process may be put into manufacturing at the least possible cost. Such details cannot be given in the patent document as they are not patentable or may not even be known at the time of filing of the patent application or may be too important from commercial angle to be made public. Research is a continuous process of improving the technology step by step. The improvement, for example, may consist of adjusting machinery or tooling, in using certain type of metals or chemicals rather than another, lay-out of a plant, siting of equipment etc. It may take research of many years and considerable investment to work out all such improvements. It may be reckoned that no patent can be obtained for many of these improvements because they are not patentable. *A company perhaps would go for patenting of these improvements if they were patentable to avoid uncertainties of know how protection. In the absence of patent protection, the company will prefer to adopt the trade secret route to protect the precious know how.*
- Often a patented invention, which has been disclosed to the public, is surrounded by some associated patentable or even non-patentable material, which is not required to be disclosed in the patent specification but without knowledge of which it is not possible to exploit the published patent profitably. Many such patents are not commercially viable without the associated know-how. *Therefore by maintaining a trade secret simultaneously, the owner extracts a dual commercial advantage as it is difficult to try to design around the information disclosed in the patent document.*
- In case of a patentable invention, a period of time inevitably elapses before a patent is applied for. The invention may be in its embryonic stage and thus require further development before patent applications may be filed or the information disseminated into the public domain. The use of the law of confidence forms an important tool for the protection of such information.
- Infringement of published technology may be, in some cases, difficult to ascertain or

detect. *In such anticipated situations use of trade secrets is the only practicable way of preventing unauthorised imitation.*

- As against copyright protection, trade secrets protection not only protects the form in which the material is fixed but also the underlying ideas. *A trade secret can cover more information, including many relatively minor details.*
- *Trade secrets are obtained immediately, even as soon as they are created, whereas a patent takes a couple of years to obtain, in which time rapidly evolving technology can bypass the patented invention.* Further, the intervening period can be used by a competitor to develop a parallel method to arrive at the likely patentable invention. With most countries now publishing patent applications 18 months after filing, irrespective of the fact whether these will be ultimately granted patents or not, the chances of developing such parallel methods are higher. In the Indian situation where a considerably long time is often taken in granting a patent, there may be a distinct advantage in not disclosing the details of the invention to the public.
- The means of protection using trade secrets is virtually free but does require affirmative steps to be taken by the owner of the information to prevent the information from being disseminated into the public domain. *A trade secret can be maintained without the cost or effort involved in patenting. However, some costs will be involved in keeping the information secret; the cost may be quite high, especially if it is to be maintained for long period.*
- The main advantage of a trade secret is the possibility of perpetual protection. Unlike most forms of intellectual property rights, where the property rights are limited in terms of time, trade secrets can last for infinitely long time. *Further, there is no requirement for maintaining a trade secret by paying some official fee as is required in case of patents, designs, trademarks etc.*
- Due to quick changes in technologies and shortening of product life cycles, protection of associated knowledge giving the trade advantage becomes very important. A decision to obtain patents in different countries needs to be carefully weighed as the patents may not have much value if a technology is likely to become obsolete in a short period of time. This situation may be true for the area of microelectronics. In such situations trade secret would provide an effective solution.
- The IPR regime differs across countries. What may be patentable, for example in the one country may not be patentable in another country. One example of this situation

would be the product patents in drugs being allowed by many countries and not allowed by some countries. In such a scenario trade secret protection is often the best tool at your disposal to protect your invention from being infringed upon. In countries, where compulsory licensing is enforced easily or where working of a patent is an important condition for holding the monopoly rights, trade secret would be a preferred choice for protecting the invention. This strategy would be desirable if it is suspected that a country might enforce compulsory licensing.

- Courts in some countries give patent claims a very narrow scope, resulting in patent flooding. Surrounding a piece of core technology there could be many patents covering possible variations of the technology and it becomes virtually impossible to practice the invention without acceding to the demands of cross licensing by those holding the surrounding patents or infringing on their patents. Frequently, foreign inventors not only have had a difficult time showing that their patents are infringed, but they often find themselves as defendants charged with infringing one or more of the so-called nuisance patents. The practice encourages (some say imposes) cross-licensing agreements whereby the core technology and the incrementally obtained enhancement patents are shared among the respective patent holders. The core technology and its vast variations become most widely available and utilized. In such a situation it is not surprising that the foreign investors choose trade secret protection as a tool to protect their inventions and ideas in comparison to a legal tool like patents.
- R&D has now become an expensive economic activity than it has ever been before. Collaborative efforts like strategic technology partnering, are common place and at the same time competition is extremely intense. Trade secrets are important means of maintaining one's competitive position. The collaborative efforts create an inter-lock where one can create both formal and informal obligations of secrecy, which are often difficult to break because of the networks of inter-relationships that exist within the industry. Breaking such obligations has consequences for the future economic positions of firms. One future line of research would perhaps be the study of the inter-relationships within industries and firms and how they influence the dissipation of technology and information within such groups.
- There is a possibility of abandoning a trade secret and a new right under patent law can be obtained. This would happen only if the secret has not been public on the day of filing the patent application. Secondly, after the patent is granted, it no longer will

remain a trade secret. The question of abandonment of trade secrets upon issuance of patent disclosing them arose in the foaming shaving cream case between Colgate-Palmolive and Carter Products. Fine, a former employee of Foster D. Snell Inc., who had developed the cream for Carter Products, was employed by Colgate Palmolive. Fine was under an oath of secrecy and was one of the patentees of the product for Carter. He began with Colgate three years before the patent was issued but apparently had disclosed the confidential information to Colgate. Colgate must have argued that it was not confidential information as a patent had been issued. The court held that Colgate had wrongly appropriated confidential information as the patent was granted much later.

Disadvantages of trade secrets

- A major drawback of trade secret protection is that care must be constantly taken to ensure confidentiality of the secret. The information is vulnerable to breach of an obligation of confidentiality by someone to whom it has been confided to. *Even one inadvertent disclosure of the information may result in the loss of the trade secret protection.*
- The main reason a trade secret may become a poor way of protection is that it cannot be maintained a secret if the public is able to discover the information by inspecting, dissecting, or analysing the product. *What can be readily discovered by reverse engineering should not be protected as a trade secret and some other type of protection must be used if the invention is to be protected.* Thus, mechanical and electronic devices that are sold to the public cannot be kept as trade secrets.
- A trade secret can be patented by someone else who discovers it by legitimate means but, not making use of the existing trade secret. Once a patent is granted, the knowledge becomes a part of public knowledge. It would then be not possible to maintain the trade secret.
- Trade secrets are not legal monopolies. The use of trade secret does not prevent exploitation of the information by some one who subsequently discovers it independently. Moreover, key inventions which are valuable to new lines of inventions in the future and which will be a valuable master license product, will almost always justify patent protection. *In general, the more you intend to exploit through licensing and less through personal production the greater is the argument for some formal*

patent protection.

- The scope of protection afforded to trade secrets in respect of third parties is legally less certain than in the case for patents and other forms of intellectual property rights.
- *Should litigation arise, matters of proof of ownership of trade secrets and of breach may be more difficult to establish than for other forms of intellectual property rights, unless great care has been taken by the owner to document each and every bit of activity that takes place with regard to the invention.*

Trade secrets often lack the prestige, which published patents may have for potential licensees.

The TRIPS Agreement

On April 15, 1994, many developing and developed nations of the world, concluded the Final Act resulting from the Uruguay Round of GATT (General Agreement on Tariffs and Trade). The TRIPs Agreement, which came into effect on January 1, 1995 is the most comprehensive multilateral agreement on intellectual property. Property right protection is accorded to copyright and related rights, trade marks including service marks, geographical indications, industrial designs, patents including protection of new varieties of plants, the layout designs for integrated circuits, and undisclosed information including trade secrets and test data. The Agreement is a minimum standards agreement, which allows Members to provide more extensive protection of intellectual property if they so wish. Members are free to determine the appropriate method of implementing the provisions of the Agreement within their own legal system and practice. The GATT established the WTO and promulgated various trade related agreements including TRIPS.

Relevant features of the TRIPS Agreement

- **Standards**. The Agreement sets out minimum standards of protection to be provided by each member. Each of the main elements of the protection is defined, namely the subject matter to be protected, the rights to be conferred and permissible exceptions to those rights, and the minimum duration of protection. The Agreement sets these standards by requiring that the substantive number of additional obligations on matters where the pre-existing conventions are silent or were seen as being inadequate.
- **Enforcement**. The Agreement lays down certain general principles applicable to all IPR enforcement procedures. In addition it contains provisions on civil and

administrative procedures and remedies, provisional measures, special requirements related to border measures and criminal procedures, which specify in a certain amount of detail, the procedures and remedies that must be available so that right holders can effectively enforce their rights.

- The Agreement provides for certain basic principles, such as national and most favoured nation treatment, and some general rules to ensure tat procedural difficulties in acquiring or maintaining IPR do not nullify the substantive benefits that should flow from the Agreement.
- Protection of Undisclosed Information. The TRIPS Agreement provides protection for "undisclosed information". The text of Article 39 of the TRIPS Agreement states that:

  1. In the course of ensuring effective protection against unfair competition as provided in Article 10bis of the Paris Convention (1967), Members shall protect undisclosed information in accordance with paragraph 2 and the data submitted to the governments or governmental agencies in accordance with paragraph 3.

  2. Natural and legal persons shall have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices so long as such information:

     i. is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question
     ii. has commercial value because it is secret; and
     iii. had been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.

  3. Members, when requiring, as a condition of approving the marketing of pharmaceutical or of agricultural chemical products, which utilise new chemical entities, the submission of undisclosed test or other data, the origination of which involves a considerable effort, shall protect such data against unfair commercial use. In addition, Members shall protect such data against

disclosure except where necessary to protect the public, or unless steps are taken to ensure that the data are protected against unfair commercial use.

4. According to Article 39.2, the protection must apply to information that is secret, that has commercial value and that has been subject to reasonable steps to keep it secret. The Agreement requires that a person lawfully in control of such information must have the possibility of preventing it from being disclosed to, acquired by, or used by others without his or her consent in any manner contrary to honest practices (breach of contract, breach of confidence, inducement to breach, as well as acquisition of undisclosed information by third parties who knew, or were grossly negligent in failing to know, that such practices were involved in acquisition). It would appear that TRIPS stipulations are close to practices followed in common law countries.

- The Agreement also contains provisions on undisclosed test data and other data, origination of which involves considerable efforts, whose submission is required by governments as a condition for approving the marketing of, pharmaceutical or agricultural chemical products, which use new chemical entities. In such a situation the Member Government concerned must protect the data against unfair commercial use. In addition, Members must protect data against disclosure, except where necessary to protect the public, or unless steps are taken to ensure that the data are protected against unfair commercial use. The issue of data protection is becoming an important topic for a debate in many countries. However, the tone of arguments suggest that unlike a protection for an infinite time for a trade secret, the data protection is being sought for a limited period of time , say 5-10 years. A major question arises whether data protection should be a subject matter in trade secret or not.
- Article 40 of the TRIPS Agreement recognises that some licensing practices or conditions pertaining to intellectual property rights, which restrain any competition, may have adverse effects on trade and may impede the transfer and dissemination of technology. In other words, the Article 40 aims at controlling of anti-competitive practices while licensing of IPR takes place. Member countries may adopt, consistently with the other provisions of the Agreement, appropriate measures to prevent or control practices, which are abusive and anti-competitive. This would mean that each member is free to formulate and enforce its own laws in this respect i.e., for controlling anti-competitive practices and hence, there are chances of substantial variation in the laws

of different countries. It is to be reckoned that in a situation of transfer of technology from one member to another, practices followed in licensing could more easily become an anti competitive while dealing with trade secrets than with other forms of IPR as it is extremely difficult to verify a trade secret. A licensee, especially in a developing country, runs a higher risk if the licensor is from a developed country. Therefore, there is a need to evolve some reasonable framework to ensure that trade secrets are not unduly used for indulging into anti-competitive practices. Situations may arise when an owner of IPR belonging to a member Y may indulge in practices while licensing IPR to some one in Member Z, which are against the laws and regulation of the Member Z. Then member Z can approach member Y to redress the problem. It is expected that Y will provide publicly available information and other types of information. The Member Z is expected to maintain the confidentiality of the information. This Agreement provides for a mechanism whereby a country seeking to consultations with the other Member and exchange publicly available non-confidential information of relevance to the matter in question and of other information available to that Member, subject to domestic law and to the conclusion of mutually satisfactory agreements concerning the safeguarding of its confidentiality by the requesting Member.

- Civil and administrative procedures and remedies. The first section of Part III of the Agreement lays down the general obligations that all enforcement procedures must be met and practised. These provisions have two basic objectives: one is to ensure that effective means of enforcement are available to right holders; the second is to ensure that enforcement procedures are applied in such a manner as to avoid the creation of barriers to legitimate trade and to provide for safeguards against their abuse. The Agreement makes a distinction between infringing activity in general, in respect of which civil judicial procedures and remedies must be available, and counterfeiting and piracy – the more blatant and egregious forms of infringing activity – in respect of which additional procedures and remedies may also be provided, namely border measures and criminal procedures.

  [Counterfeit goods are in essence defined as goods involving slavish copying of trade marks, and pirated goods as goods which violate a reproduction right under copyright or a related right.] These provisions will apply in case of violation of trade secrets or undisclosed information. In order to successfully ensure proper and adequate

enforcement each member should be equipped with sound legislation to handle the situation.

- The Second section requires that civil judicial procedures must be available in respect of any activity infringing intellectual property rights covered by the Agreement.
    - Article 41 requires that enforcement procedures must permit effective action against infringements and must include expeditious remedies. As these judicial procedures may take a fair amount of time, it is necessary for the judicial authorities to be empowered to provide provisional relief for the right holder in order to stop an alleged infringement immediately.
    - Article 42 deals with fair and equitable enforcement, civil and administrative procedures. Members are obliged to make availability to right holders civil judicial procedures covering enforcement of any IPR. Defendants are entitled to written notice which is timely and contains sufficient details about claims. Parties must be allowed to be represented by independent legal counsel, and procedures may not impose overly burdensome requirements concerning mandatory personal appearances. All parties are entitled to substantiate their claims and to present all relevant evidence, while confidential information must be identified and protected.
    - Article 43 deals with rules on evidence and how these should be applied. It is expected that the court should be empowered to have an evidence produced which is either in possession of the plaintiff or the defendant, in the court for deciding the case.
    - Article 44 requires that the court should be empowered to order injunctions, i.e. to order a party to desist from infringements, including the possibility to prevent the imported infringing goods from entering into the domestic distribution channels. Members are not obliged to provide that authority where a person has acted in good faith.
    - Article 45 requires that the courts are empowered to order an infringer, at least if he has acted in bad faith, to pay the right holder adequate damages. They must also be authorised to order the infringer to pay the right holders' expenses. In appropriate cases, the courts may be authorised to order recovery of profits and/or payment of pre-established damages even when the infringer has acted in good faith.

- Article 46 provides that the judicial authorities must have the authority to order infringing goods to be disposed off outside the channels of commerce, or, where constitutionally possible destroyed. It must also be possible to dispose of materials and instruments predominantly used in the production of infringing goods. The courts must take into account the proportionality between the seriousness of the infringement and the remedies ordered as well as the interest of third parties.
- Article 47 requires that the judicial authorities may be authorised to order to the infringer to inform the right holder of the identity of the third persons involved in the production and the distribution of the infringing goods or services and of their channels of distribution.
- In accordance with Article 48, judicial authorities must have the authority to order the applicant who has abused enforcement procedures to pay adequate compensation to the defendant who has been wrongfully enjoined or restrained to cover both the injury suffered and expenses. Public authorities and officials are exempted from liability to appropriate remedial measures only where actions are taken or intended in good faith in the course of the administration of that law.
- Article 49 provides that, to the extent that any civil remedy can be ordered a as result of administrative procedures on the merits of the case, such procedures shall conform to the principles equivalent in substance to those set forth in the Section.
- Article 50 requires each country to ensure that its judicial authorities have the authority to order to prompt and effective provisional measures, which must be available in respect of any intellectual property right. Provisional measures have to be available in two situations. One is where they are needed to prevent an infringement from occurring, and to prevent infringing goods from entering into the distribution channels of commerce. The provisions on provisional measures contain certain safeguards against abuse of such measures. The judicial authority may require the applicant to provide a security or equivalent assurance sufficient to protect the defendant and to prevent abuse. Provisional measures, shall upon request by the defendant, be revoked or otherwise cease to have effect, if applicable fails to initiate proceedings leading to a decision on the

merits of the case within a reasonable period to be determined by the judicial authority ordering the measures. In the absence of such a determination, thus period may not exceed 20 working days or 31 calendar days, whichever is longer.

- The fifth and the final section of the TRIPS Agreement deals with criminal procedures. According to the Article 61 of the Agreement, provision must be made for these to be applied at least in the case of wilful trademark counterfeiting or copyright piracy on a commercial scale. The Agreement leaves it to Members to decide whether to provide for criminal procedures and penalties to be applied in other cases of infringement of intellectual property rights, in particular where they are committed wilfully and on a commercial scale. Sanctions must include imprisonment and/or monetary fines sufficient to provide a deterrent, consistent with the level of the penalties applied for crimes of a corresponding gravity. Criminal remedies in appropriate cases must also include seizure, forfeiture and destruction of infringing goods and of materials and instruments used to produce them.

  All the above remedies are applicable to all forms of IPR including for protection of undisclosed information.

Paris Convention

Article 10bis of the Paris Convention (covering unfair competition) provided a potential source of support for international standards of trade secret protection.

"(1) The countries of the Union are bound to assure to nationals of such countries effective protection against unfair competition.

(2) Any act of competition contrary to honest practices in industrial or commercial matters constitutes an act of unfair competition.

(3) The following in particular shall be prohibited:

i. all acts of such a nature as to create confusion by any means whatever with the establishment, the goods, or the industrial or commercial activities, of a competitor;

ii. false allegation in the course of trade of such a nature as to discredit the establishment, the goods, or the industrial or commercial activities, of a competitor;

iii. indications or allegations the use of which in the course of trade is liable

to mislead the public as to the nature, the manufacturing process, the characteristics, the suitability for their purpose, or quantity, of the goods.

Practical Guide on Protecting Undisclosed Information / Trade Secrets

It would be obvious by now that maintaining and protecting a trade secret calls for many positive actions by the owner of the secret. Firstly it is essential that the information should be really confidential that it is not known to any one else in the public. Secondly, the owner should take all possible steps to keep it confidential and there are various actions which help in maintaining the secrecy especially when one is talking about an industry situation. In order to protect a trade secret when it is shared in a limited manner as a matter of necessity, all the concerned players will have to protect their interests; at times these interests could be conflicting. In the following pages steps to be undertaken by different interest groups are listed and explained.

Security measures to be undertaken by the owner of trade secret

1. First and foremost, transform the information into a tangible form as a hard evidence of its existence. Where information can be noted down obtain copyright protection for the document.
2. Maintain a record of the movement of information and also of persons / companies whom the confidential information has been provided completely or in parts
3. Date the creation of your data, information etc.
4. Notify the recipient of the trade secret, preferably in writing, that the information is proprietary and that the information is not to be disclosed or used by the recipient for the recipient's benefit or the benefit of others without the express consent of the trade secret owner. (Sample agreements can be seen in the Annexes.)
5. Enter into confidentiality and non-disclosure agreements with whom the information is being shared.(Points to be kept in mind are given in Annex--).
6. Establish and maintain written confidentiality policies to be distributed to all employees.
7. Establish and maintain oversight policies and procedures to prevent inadvertent disclosure of trade secrets in written publications, seminars, speaking engagements, or at trade shows, by employees.
8. Institute over all plant physical security precautions, such as fencing the perimeter of

the Company premises, limiting the number of entrances and exits, using alarmed or self locking doors, hiring after - hours security personnel.

9. Install visitor control systems.
10. Maintain access to trade secrets on a "need-to-know" basis.
11. Establish security coded ingredients or data.
12. Separate departments of the Company so that each department has a particular piece of the picture but not the whole, such that each piece in itself cannot be utilised efficiently without the complete whole.
13. Separate components of the trade secret between and among departments and/or personnel so that each has a "piece of the puzzle".
14. Keep drawers or areas for secret documents and drawings separated and locked.
15. Stamp documents and drawings as "CONFIDENTIAL" or "PROPRIETARY". Such documents would be customers list, lab notebook and business plan..
16. Enter into vendor secrecy agreements.
17. Establish physical barriers to prevent unauthorised viewing of the proprietary process technology.
18. Install "KEEP OUT" or " AUTHRISED PERSONNEL ONLY". Signs at the access points to sensitive areas of the plant, and have a policy of enforcement.
19. Establish and maintain written rules and regulations prohibiting employees from remaining on the plan after hours without express permission from properly authorised personnel.
20. Establish and maintain rules and regulations requiring employees to stay in controlled areas about their work stations.
21. Require employees to wear identification badges or carry identification cards.
22. Require sign out/sign in procedures for access to and return of sensitive materials.
23. Reproduce only a limited number of sensitive documents and maintain procedures for collecting all copies after use.
24. Require authorised codes or passwords for access to copying machines and computers. Use key and encrypted computer data access to control theft of secret computer stored information.
25. Establish and maintain policy and practice for advising company employees, on a regular basis, regarding the Company's trade secrets and confidential business information.

26. Hold "Exit interviews" to obtain return of company documents and to remind ex-employees of their obligation not to use the confidential information of the Company for their own benefit or the benefit of others. During the interview, the employee should be reminded of his obligations to respect and keep secret the company's confidential information which continue after he leaves. The type of confidential information to which he has been exposed during the employment should be identified to him. He should be told that he should not take any documents that contain such information with him unless he has express permission by the senior management.

27. In places such as research laboratory, manufacturing plant and any other place where confidential information can be had by listening and looking, employees should be asked to wear badges, they should be asked to sign in and sign out, and perhaps have bags and brief cases inspected on leaving.

28. You should educate employees about the existence of confidential information and the need to keep it secret.

29. Whenever you are giving an outsider confidential information you should always mark all documents which contain such information with the notice that " it is confidential".

30. Draw regulation in the company rules on the management of documents which contain trade secrets stipulating the means of storage , preservation and disposal of trade secrets and limiting the persons authorised to handle trade secrets.

31. If the trade secrets are contained on paper documents, they may be considered to be controlled as secrets if the following steps are taken

    1. the documents are stored in a safe
    2. the employees who have the access to these documents are limited. Those employee who know the content of the documents are informed clearly and specifically in advance that the information must never be used by another company.

32. Take particular care in training your sales and marketing staff, because experience shows that most leaks of confidential information tend to come from those departments. After all it is a salesman job to sell as much as he can, so naturally he wants to tell the customer anything that will help him to make the sale.

33. Establish a policy for employees when using internet resources, such as discussion groups. There is a tendency to assume that no one is watching you when you use internet and hence employees may feel relaxed in sharing some secrets for seeking new

appointments or participating in some lively discussion.

34. Monitor internet traffic to ensure that keywords or specific phrases are not being transmitted. This situation may arise when communication takes place with in various offices of a company. This would call for a good internet policy.

Points for licensor and licensee

It is quite clear that undisclosed information should be protected through an agreement (license agreement for example) between the owner of the undisclosed information and the person taking that information. Most litigation in the area of trade secrets or confidential information arises in situations where neither party is clear as to what was the trade secret. Therefore to avoid litigation, it is in the interest of licensee and licensor to have trade secret clearly defined and identified. It is to be understood that the interests of the two parties may not only be identical but conflicting at times. As a licensee you may not like to acknowledge whether the information is really confidential or not as you may not have any knowledge about the information being in public domain or not. Suitable clauses should therefore be introduced in the agreement to cover this aspect. As a licensee you may also like to verify the authenticity of the confidential information claimed by the licensor. The licensor may be asked to give a declaration to this effect and should agree to paying damages if the declaration is wrong.

There are many players in the process of creating, maintaining and practising a trade secret or confidential information and the guidelines may be little different in each case. In a situation of R&D under extra-mural funding, the players would be researchers, laboratory assistants, members of review and evaluation committees and official(s) of the funding agency. Additional players are included if the results of R&D are utilised for manufacturing products or processes or some other commercial activities. In case of international collaborative research similar people of the collaborating country also become stake holders. The task of keeping track of violation of trade secret or undisclosed information become extremely difficult and one has to have more and more faith in the honesty of each participating scientists, agencies and countries.

As licensor it may not be a good idea to license trade secrets to many and in many geographical locations. It would become difficult for the trade secret owner to police the licensees to ensure whether the licensees are keeping the information confidential. If the holder of the information can demonstrate where the information originated from, that it had not come from a public source and that it has been kept confidential then, the recipient is obliged to keep it confidential. In a reverse situation where some one is accused of misusing confidential

information, that person would try to prove that the information was freely available or it was a common knowledge or obtained independently from other sources or as a result of creative effort.

When disputes take place on breach of confidentiality or unauthorised disclosure of confidential information, it would be essential to examine whether the trade secret was acquired wrongly or whether it was disclosed wrongly. Therefore, one must know as to what could be an improper acquisition of trade secrets and improper disclosure.

Improper acquisition of trade secret

i. the act of acquiring a trade secret by means of theft, fraud, coercion, or any other improper means or using or disclosing a trade secret acquired through improper means
ii. the act of acquiring a trade secret while being aware that such trade secret has been acquired through improper means or through gross negligence not being aware of such matters or the act of using or disclosing a trade secret so acquired
iii. the act of using or disclosing a trade secret after becoming aware, subsequent to its acquisition, that trade secret has been acquired through improper means or through gross negligence , not becoming aware of such matters.

Improper disclosure of trade secrets

i. the act of using or disclosing a trade secret which has been disclosed by the business entity holding it for the purpose of unfair competition or otherwise acquiring an unfair benefit, or for the purpose of inflicting injury on such holder
ii. cases in which there is an intent to realise an unfair benefit might include situations where the offender betrays a relationship of trust with the holder of the secret, and uses it without the holder's permission to start a business in competition with that of the holder or sell it to on to another enterprise
iii. the act of using or disclosing an acquired trade secret after becoming aware, subsequent to its acquisition, that there has been improper disclosure of such trade secret or that such trade secret has been acquired through improper disclosure, or, through gross negligence, not being aware of such matter

Protection of Integrated Circuit Layout Design (IC)

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, I 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.

What is not registrable as IC layout design?

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.Inherentlynotdistinctive:
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.

What is the term of an IC layout design protection?

The term is 10 years from the date of filing.

What constitutes infringement under the 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. .

Protection of Geographical Indications

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.

Who can apply 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.

Which of the geographical indication cannot be registered?

Geographical Indications :

- .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.

What is the punishment in the Act 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.

What is 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.

Some operational aspects of managing Geographical Indications outside

The General Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) brought the protection of geographical indications (GI) to the forefront of IPR. Developing countries have seen a large potential in this form of IPR due to their being cradle of many old civilizations which are very old and have survived for centuries. New opportunities exist in India as we now have a legislation in place for protecting GIs. The Indian system has been explained in the IPR Bulletin from time to time. We still do not have operational experience of implementing the Act as the first application seeking GI in respect of Darjeeling tea is pending with the Registrar of GI. There is a lot to be understood from the experience of other countries by the regulators, scientists, farmers, artisans, government officials and departments.

French practice

France is the leader in providing GI protection to wines produced in France especially Champagne. One of the most important features of the French system is that the champagne production is regulated through a government decree that lays down the wine growing and wine making criteria which are necessarily to be met to benefit from the Champagne appellation. What it really means is that certain quality standards and uniqueness basis have to be maintained to get the benefits.

As is commonly understood that a GI prohibits others from copying and falsifying your GI. Champagne faced many cases where other wines started using the name Champagne in spite of the fact that such wines were not produced in the Champagne Region of France. France won a case in the United Kingdom in 1950s when a wine made in Spain started appearing in

the UK markets as " Spanish Champagne". The UK court ordered the Spanish company to drop the Champagne from the product. The judgement was given on December 16, 1960. The Spanish company coined other GI called CAVA which has its own story of success. Interestingly, Champagne did not get an automatic protection in other countries including those in Europe. France had to sign bilateral treaties and private agreements with many countries and industries to avoid unfair use of the appellation. These countries are UK, Spain, New Zealand, Japan and Australia. Champagne has been treated a s trademark also by some courts. There was a decision in a German court which did not allow the use of name Champagne even for non alcoholic drinks like mineral water.

What has been done to define Champagne? Just saying that a product has been known for a long time one cannot expect to obtain a GI. A great deal of home work needs to be done for convincing the authority awarding GI. In case of Champagne following steps were taken to mark the geographical location:-

1. A region clearly defined is in the north east of France
2. The wine growing area occupies about 31,000ha.
3. Only three varieties are produced namely, pinot noir, pinot meunier and charonnay.
4. It represents about 15000 growers and 200 houses.(The roles of growers and houses are clearly marked.)
5. An annual sale of about 280 bottles in more than 150 countries; the estimated sale is about 1.5 billion euro.

Swiss system

Protection of GI and appellation of origin are covered under the Swiss law on Improvement of Agriculture and Preservation of Farming Populations. The objective is to create a register for geographical names designating agricultural products- natural or processed (including spirits). Products included are milk products, meat including preserved meat, smoked products, fruits, vegetables and bakery products. Switzerland did not have an effective system to protect geographic names until the above law was put in place. Emmental cheese, a product from Switzerland has been imitated widely and this could not stopped in the absence of a domestic law.

The Swiss law requires a clear definition of the product and that the method of obtaining the product should be described and the limit of the geographical area should be

stated in a specification. All fabrication steps namely, production, processing and preparation, must occur in the designated area. The task of controlling the quality and uniqueness, a certification body has been entrusted the job of exercising control during production, processing and preparation of the product. This body in Switzerland is Accreditation and Designation of Test Laboratories and Body for Conformity Assessment. It has also been recognized that traditional methods for production of such products may be more costly. In order to compete effectively against cheaper products- often their own imitations, the market should be made aware of their origin, uniqueness and specificity. The regulations also impose certain transparent and fairer competition rules.

Australian system

The Australian system has been developed around wines. Prior to 1993 Australia did not have any law which recognized geographical indications as a protectable property. This aspect was introduced as an amendment to the Australian Wine & Brandy Corporation Act. The Act established the GI Committee as the authority responsible for registering GIs and created the Register of Protected Names for recording the names of protected GIs. The regulations spell out a number of factors that must be taken into account in dealing with a GI application. These factors are history of the product, process etc, geology, climate, harvest dates, drainage, water availability, elevation and traditional use of the area and name. The Australian approach is different from others in the sense that it does not insist on quality or characteristics of the product after a geographical area has been identified in respect of the product. It is assumed that the concerned product will have the desired quality if it comes from the specified geographical location. Take for example the concept of region associated with a wine. A region is defined as a single tract of land that is discrete and homogenous in its grape growing attributes to a degree that is measurable and usually produces at least 500 tonnes of wine grapes every year and comprises of at least 5 wine grape vineyards of at least 5 hectares each that do not have any common ownership.

US practice

A formal wine appellation system was adopted in the USA in 1978 and the agency implementing the Act is Alcohol and Tobacco Tax and trade Bureau (TTB). The multi-tiered framework consists of various types of appellations. Each appellation can be used as a label if

the prescribed percentage of grapes from that area is used to make a particular wine. (The concept of labeling has been continuing from 1938. American wine producers had the right to mention on their labels geographic origin of the grapes used for making the wine.) TTB stipulates that 75% of the wine bearing such an appellation had to be derived from grapes grown in the named state or country. Places which were not defined earlier, TTB has established a new type of appellation known as American Viticultural Area (AVA) which is a delimited grape growing area distinguished by geographical features. An AVA can be used as a label if at least 85% of the wine is made from grapes grown inside that AVA. As AVA did not exist before 1978, TTB has laid down criteria for establishing an AVA:-

1. Evidence that the name of the viticultural area is locally and/or nationally known as referring to the proposed area;
2. Historical or current evidence in support of the boundaries of the AVA
3. Evidence to the geographical features, such as climate, soil and topography, which distinguish the AVA from the surrounding areas
4. The specific boundaries of the area

US wine appellation system only calls for indication of the origin of grape used for making the wine and do not imply any quality controls. It can be observed that none of the criteria for establishing an AVA refers to taste, character or quality of wine and there is no organoleptic aspects of the US appellation system. Further there is no attempt to control grape varieties or viticultural practices through appellation system.

India as compared to the most countries mentioned above has a large number of items, which may qualify for GIs. India is not limited by any one product like wine. It is observed that each country has evolved its own way to grant GI or geographical appellation. Most importantly, some countries don't insist on defining the quality of these products and the fact that the product has been grown in that area is good enough reason for grant of a GI. As GI helps the producers commercially in gaining a good brand value, it would be their responsibility to ensure that the quality is maintained or else the market preference will change. We have just started implementing the GI Act and ways will have to be found out to implement the Act for the benefit of those who have continued to preserve and produce traditional products. It can also be seen that the French model has not been followed by other countries. Therefore, while implementing the GI Act, there is a need to be practical and reasonable

otherwise the Act will have very little meaning for the beneficiaries. Extreme caution is to be exercised while laying down requirements to be satisfied before a GI is granted.

Management of IPRs in Pharma Companies

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, which we are sure to witness, will demand a special pedestal for intellectual property and treatment in the overall decision- making process.

Nature of drug industry

Competition in the global pharmaceutical industry is driven by scientific knowledge rather than manufacturing know-how and a company's success will be largely dependent on its R&D efforts. Therefore, investments in R&D in the drug industry are very high as a percentage of total sales; reports suggest that it could be as much as 15% of the sale (MacFarlane, F.G. et al (1995), Trends in World wide R&D Expenditure, 1981-93, J of Pharmaceutical Medicines). One of the key issues in this industry is the management of innovative risks while one strives to gain a competitive advantage over rival organizations. There is high cost attached to the risk of failure in pharmaceutical R&D with the development of potential medicines that are unable to meet the stringent safety standards, being terminated, sometimes after many years of investment. For those medicines that do clear development hurdles, it takes about 8-10 years from the date when the compound was first synthesised. As product patents emerge as the main tools for protecting IP, the drug companies will have to shift their focus of R&D from development of new processes for producing known drugs towards development of a new drug molecule and new chemical entity (NCE).

During the 1980s, after a period of successfully treating many diseases of short- term duration, the R&D focus shifted to long duration diseases / illnesses. While looking for the global market, one has to keep in mind satisfying different regulatory authorities. It is understood that the documents to be submitted to regulatory authorities have almost tripled in the last ten years. In addition, regulatory authorities now take much longer to approve a new drug. Consequently the period of patent protection is reduced, resulting in the need of putting in extra efforts to earn enough profits. The situation may be more severe in the case of drugs developed through the biotechnology route especially those involving utilization of genes. It is likely that the industrialised world would soon start canvassing for longer protection for drugs.

It is also possible that many governments would exercise more and more price control to meet public goals. This would on one hand emphasise the need for reduced cost of drug development, production and marketing and on the other hand, necessitate planning for lower profit margins so as to recover costs over a longer period. It is thus obvious that the drug industry has to wade through many conflicting requirements. Many different strategies have been evolved during the last 10 to 15 years for cost containment and trade advantage. Some of these are out sourcing of R&D activity, forming R&D partnerships and establishing strategic alliances.

A study based on survey of 45 leading pharmaceutical companies suggests that in 1992, on an average, 48% of the R&D expenditure was spent on staff; 31% of the staff was deployed in drug discovery, 34% in non-clinical development (pharmaceutical formulation, analysis, toxicology etc.), 20% in clinical function and the remaining in other activities including regulatory. Further, 44 of these companies had an aggregate of 1132 NCEs in development after drug candidate selection stage, indicating that a company has to have many candidate drugs in the pipe line in order to cover risks associated with the innovation.(Halliday, R.G., Drasdo, A.L., Lumley, C.E., Walker, S.R., 1997, R&DManagement 27, 1.). The importance of highly qualified human resources and R&D is quite clearly established.

The pre-clinical research phase starts with selection of a disease problem and the formulation of a scientific hypothesis about the benefit of a chemical intervention. The next stage is the screening of candidate chemical entities for activity, tested in live animals or animal tissues, followed by synthesis of compounds capable of activity as close to the desired effect as possible and re-screening along with other compounds. The identification of the lead compound with the best expected level of activity then follows and comparisons with other similar chemical compounds usually ensues. The next step is the final selection of a few compounds for human clinical testing after successful tests for activity and toxicity. One or two back up compounds are retained for the next phase if the lead compound fails. Obviously, given the highly competitive scenario, a company has to really anticipate and exploit early information, organise rapid experimentation and combine different types of knowledge; a simultaneous protection of IP generated is essential at each step of innovative activity.

The race to unlock the secrets of human genome has produced an explosion of scientific knowledge and spurred the development of new technologies that are altering the economics of drug development. Biopharmaceuticals are likely to enjoy a special place and the

ultimate goal will be to have personalized medicines, as everyone will have their own genome mapped and stored in a chip. Doctors will look at the information in the chip(s) and prescribe accordingly. The important IP issue associated would be the protection of such databases of personal information. (David Champion, Mastering the Value Chain *(an interview with Mark Levin of Millenium Pharmaceuticals)*, Harvard Business Review, June 2001). Drugs developed through the biotechnology route will find more and more entry in to the market. The protection procedure for such drug will be a little different from those drugs which are not through the BT route.

Patent searches

The exercise starts right from the point of identification of an R&D area. It needs to be understood clearly that an invention has to be novel, non-obvious and useful for it to become a candidate for grant of a patent. Therefore, a thorough search of patent and non patent literature is essential even to identify the R&D topic. It may be emphasised that monitoring of literature, especially the patent literature, all along the research work is essential to ensure that no one has pre-empted you by filing a patent before you. A few words about patent searches would be useful. As one is talking about global novelty, it is necessary to study the patents published and awarded in India and elsewhere. Patent information on patents published and awarded by the European Patent Office and US Patent and Trademark Office are available on the internet. Similarly, information on applications filed in India and applications accepted is published in CD ROMs, Ekaswa A and Ekaswa B, brought out by the Patent Facilitating Centre at Technology Information Forecasting and Assessment Council (TIFAC). Patent searches need to be done by experienced people and there are a few agencies in the country who provide this service. However, it is not difficult to develop the skills, and companies should try develop some core expertise in this area.

In case of inventions related to BT the situation is a little different as a microbial strain used for developing a drug or vaccine needs to be specified in the patent document. If the strain is already known and reported in the literature usually consulted by scientists, then the situation is simple. However, many new strains are discovered and developed continuously and these are deposited with International depository Authorities under the Budapest Treaty like ATCC, DSM etc. While doing a novelty search, the databases of these depositories should also be

consulted. Companies do not usually go for publishing their work, but it is good to make it a practice not to disclose the invention through publications or seminars until a patent application has been filed. It may be noted that a patent is granted to an inventor(s), who in turn assigns it to the company the inventor is working for. A patent can be nullified if the law later on finds that the ownership has not been declared correctly. Therefore, special attention needs to be paid to ensure that the names of all the inventors are included in the patent application.

Strategies for filing

It is a vast subject and each company will have to evolve its own strategies taking into account its present and future market territory, financial health, likely collaborations and alliances, knowledge about local laws of different countries and ability to negotiate with such laws, market size and so on. The official fees for filing an Indian application is Rs 5000. If we include the attorney charges and other associated expenses, the cost of filing an Indian application may vary between Rs 20,000 to Rs30,000. One may plan for an average of another Rs 10,000 or so till the patent is sealed, provided that not too many queries have been raised by the Patent Office. Subsequent to grant, a patent needs to be maintained by paying annuity fees.

India is now a member of Patent Co-operation Treaty (PCT) and Paris Convention. By being a member of Paris Convention, an Indian resident filing an application in India can get the priority of the filing date in India in any member country of the Convention, if an application is filed with in 12 months of Indian filing in the member country. It can be seen that a company will have to spend money with in 12 months if priority is to be gained in other countries and the quantum of expenses will depend on the number of countries chosen.

One can also take the PCT route for claiming priority in all the member countries of PCT and actually delay investment on filing by another six months. In addition, once you file a PCT application, you are also provided with an international search report, with in 18 months, which gives you a good idea about the novelty of your invention. In the mean time the company may assess the potential of the technology in various countries designated in the original application. If one is not in hurry to obtain patents in different countries and remains satisfied with the priority for some time then a request can be made for examination of the same application. The examination report will be available with in the next 12 months which should give you strong reasons to decide whether or not to go ahead with filing applications in

different countries. Two actions mentioned above do cost money but can certainly reduce the risk of pursuing an application which may not be very sound, and spending large sums of money.

A patent specification has to have complete description of the invention along with experiments and claims. While dealing with microbiological inventions, it is essential to deposit the strain in one of the recognised depositories who would give a registration number to the strain which should be quoted in the patent specification. This obviates the need of describing a life form on paper. Depositing a strain also costs money, but this is not much if one is not dealing with, for example cell lines. Further, for inventions involving genes, gene expression, DNA and RNA, the sequences also have to described in the patent specification.

There are many countries which are not English speaking. Additional costs are involved on account of translation while filing applications in such countries. There are some post filing expenses like attending to objections from patent office, attending to opposition and sealing of patent.

Maintenance of patents

It has already been mentioned that a patent needs to be maintained by paying annual fees for the period up to which it is maintained. More important cost elements come in to play when it comes to protecting it against infringement or challenge by some one else. This is where a company has to work out a strategy for fighting infringement. A patent granted by a patent office does get any immunity from getting challenged in a court of law during the life of the patent. Following the compliance with TRIPS, many countries have now made the term of a patent as 20 years from the date of filing. Few commonly noticed grounds for challenging a granted patent are lack of novelty, wrong ownership and obviousness. Therefore, a company must maintain its records carefully for a period of at least twenty years. As such a situation may arise late in the day, a company needs to keep all the necessary documents like record of R&D work, prior art documents used at the time of filing the patent application, cost and quantity of production, sales figures and territories, quantity and cost of raw materials and related details which are required in the court during a dispute. It should be remembered that suits may have to fought outside India as well. It would be good idea to keep some funds aside for these anticipated expenses.

Record keeping

This is one area where many Indian companies, R&D institutions and universities are quite weak especially when it comes to keeping records for long durations like 20 years and beyond. In the context of IPR, one is constantly thinking in terms of patents, trade secrets etc. The famous turmeric case was won only because documented records could be produced before the US Patent Office as evidence. A company will have to deal with many new situations like business alliances with other companies in different areas including IPR. Some basic features of record keeping for an inventive work would be :-

1. Maintain a permanently bound record book
2. Don't use loose sheets as it would reduce the credibility of records
3. All pages should be sequentially numbered
4. Use good quality of paper and ink
5. All entries should be duly signed by authorised persons
6. Describe all experimental details, set up, experimental conditions etc
7. Record all observations

Alliances and collaborations

Alliances among companies are likely to become more frequent than has been seen in the past. The alliances could be for many different objectives such as for sharing R&D expertise and facilities, utilising marketing networks and sharing production facilities. While entering into an R&D alliance, it is always advisable to enter into a formal agreement covering issues like ownership of intellectual property (IP) in different countries, sharing of costs of obtaining and maintaining IP and revenue accruing from it, methods of keeping trade secrets, accounting for IP of each company before the alliance and IP created during the project but not addressed in the plan**,** dispute settlements. It must be remembered that an alliance would be in your favour if your IP portfolio is stronger than that of your partner. There could be many other elements of this agreement. Many drug companies will soon use the services of academic

institutions, private R&D agencies, R&D institutions under government in India and abroad by way of contract research. All the above aspects mentioned above will be useful. Special attention will have to be paid towards maintaining confidentiality of research.

Technology acquisition

It has been observed and reported that, while acquiring technology companies have not paid much attention to issues related to IP. Special care is needed in examining the IP issues and one should look at all clauses related to patents, trademarks, know how, plant drawings, raw materials etc. What kind of obligations one is stepping into is an important parameter to keep in mind. For example, the licensor may stipulate that the licensee has no right to challenge the validity of patents of the licensor or the licensor may say that the licensee should procure unpatented raw material from the licensor or licensor is not prepared to indemnify against infringement caused to some one else and so on. Whenever IP related matters are there, one should examine all the relevant documents like full text patents and check their validity as well and whether they are applicable to the technology being acquired. For validity examination, companies may not completely depend on the licensor, they should carry out independent intelligence and utilise other sources of information.

Some special aspects of drug patent specification

Writing patent specification is a highly professional skill which is acquired over a period of time and needs a good combination of scientific, technological and legal knowledge. Claims in any patent specification constitute the soul of the patent over which legal proprietary is sought. Companies have to develop the skill of writing both product and process claims as today patents can be obtained anywhere in the world and India is also likely to grant product patents in drugs etc. as soon as she becomes TRIPS compliant.

Discovery of a new property in a known material is unpatentable. If one can put the property to a practical use one has made an invention which may be patentable. An example from the EPO Guidelines for Examiner will explain the point. A discovery that a known substance is able to withstand mechanical shock would not be patentable but a railway sleeper made from the material could well be patented.

A substance may not be new but has been found to have a new property. It may be possible to patent it in combination with some other known substances if in

combination they exhibit some new result. The reason is that no one has earlier used that combination for producing an insecticide or fertilizer or drug.

It is quite possible that an inventor has created a new molecule bur its precise structure is not known. In such a case, description of the substance along with its properties and the method of producing the same will play an important role.

Combination of known substances into useful products may be a subject matter of a patent if the substances have some working relationship when combined together. In this case no chemical reaction takes place. It confers only a limited protection. Any use by others of individual parts of the combination is beyond the scope of the patent. For example, a patent on *acqua regia* will not prohibit any one from mixing the two acids in different proportions and obtaining new patents.

Methods of treatment for humans and animals are not patentable in most countries (one exception is USA) as they are not considered capable of industrial application. In case of new pharmaceutical use of a known substance, one should be careful in writing claims as the claim should not give an impression of a method of treatment. Such claims avoiding the pitfall are known as " Swiss Type" claims.

Support system

It would be quite apparent that management of IPR is an involved process and it would be difficult to meet the requirements if a company does not have suitable systems to take care of various aspects. Broadly speaking, each organisation should have the following functions properly lined up.

Technical:	To take care of patent searches, analysis of patent documents, examining prior art, assessment of available technologies, technical record keeping
Legal:	To look after filing, follow-up actions, infringement, revocation, drafting of applications, preparing agreements etc.

Financial:	Payment of official fees, attorney fees, costs of searches, patent documents
Administrative:	Handle ownership issues, sharing of benefits, award to staff, employer-employee contracts, security arrangements etc.

IPR applicable to information technology

Generally speaking, present concerns are, perhaps, more about the non-IPR issues, such as levying duty on accessing information from internet and doing c-commerce through the internet rather than the protection aspects. While dealing with IPR in the area of information technology, one is predominantly concerned with copyrights trademarks, patents, registered design and protection of IC lay out design and undisclosed information. It is also to be understood that the progress in the IT industry will largely be technology driven and therefore, IPR will play the most crucial role in the promotion and spread of this technology.

3.1 Copyright

Protection of copyright appears to be the most obvious and important subject matter. Once a material is published anywhere in a member countries of the Berne Convention it becomes a copyrighted material and no separate registration is required. Therefore, any information which is transmitted on internet is a subject matter of copyright as it is available in public domain. In addition many pieces of information transferred and transmitted on internet may already be a copyrighted. There are several players whenever one is dealing with transaction of information on the internet, namely the internet service provider, the content provider, the person downloading the information, bulletin board service provider etc. The cause of infringement may be any of the players. The situation becomes very complex when a collection of copyrighted works is transacted. Take for example the case of multimedia. Multimedia represents an integrated whole of computer programme, audio visual work, text, sound recording and databases. These components may be separately protected through copyrights or some other regime. The question, which arises, independent of the internet is: who is the owner of such a work and what exactly needs to be protected? As different components of a

multimedia work are otherwise protected, it may be felt that it may not be necessary to protect the multimedia
work per se. But this approach may not be conducive to new investments for reaching the benefits of the digital revolution to a large population. A deeper analysis would show that a multimedia work is neither a literary, musical or dramatic work nor it is a database or a computer programme. However, the multimedia works have immense potential and are proving to be large revenue generators. It therefore appears that a stand alone legal regime may be considered essential by the publishers and pushed into international debates. In the overall context the question regarding wrong and unauthorized use of such copyrighted information is of paramount importance. Secondly it is also equally important to ensure that internet does not promote and encourage unlawful use of any copyrighted material. There are many court cases dealing with infringement of the nature mentioned above. Playboy claimed in 1993 that 170 centrefold photographs and other photographs from its publications appeared on the bulletin board service (BBS) run by one Mr. Frena for which he did not have any authorization from Playboy Enterprises. The District court held that Mr. Frena was an infringer. Similarly, in another case, the court granted a restraining order against the uploading and downloading of copyrighted computer software, of Sega Entertainment, permitted by a BBS operator. The court also upheld the seizure of the computer memory devices, which had been distributed by BBS operator so that Sega games could be played.

In a recently adopted treaty on copyrights at the Diplomatic Conference of WIPO held on December 20, 1996, two new obligations have been introduced. The obligations concerning technological measures demand that "each contracting state shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this treaty or the Berne Convention and that restrict acts, in respect of their works which are not authorized by the authors concerned or permitted by law". This, in other words, means that use of decryption devices without the consent of the authors will not be allowed. It may therefore, lead to a situation that a user may have to purchased decryption system recommended by the authors or their assignees. Many developed and member countries are also allowing patenting of these items. Copyrights are often thought of as special territory for artists, composers, writers, and those connected with the entertainment industry. People in these activities have long been aware of the special value of copyright protection. What is not well understood is

that copyrights are at least as valuable to the commercial world, as to government operations and fields of science and education.

3.2 Domain names and trademark issues

The estimated number of domain name registration has increased from 100000 in 1995 to 5 million and is growing at a volume of 70000 new registration every week. The domain name is that part of the e-mail address or the home page address which appears after, '@' and 'www' respectively. Domain names are read from right to left. The first level on the right, such as '.com' or 'co.uk' is known as the Top Level Domain(TLD). It seems that an international understanding may soon emerge regarding words / expressions / characters which could be used as TLDs. The part immediately to the left of TLD is known as the Second Level Domain(SLD). It is the SLD which is allotted to users as the unique identifying element in their internet address and this usually corresponds to the user's trading name. Obviously, SLD is of direct importance to most users, especially the industry. It is clear that the internet is an effective tool for marketing internationally and creating more and more business opportunities. Potential markets are not limited by geographical boundaries. For this new communication medium, offered goods or services are not available for instant physical identification, as are goods in a store. Instead, these goods or services must be located and accessed by a domain name. It is at this point that an issue related to trademark arises. The concern is that an internet address assigned to A would contain words constituting B's trademark. If A is an entirely different business from B, there may not be any trademark infringement problem because there is no possibility of consumer confusion. The problem arises when A is in the same business. It is known that many corporate giants did not appreciate the hidden potential of domain names in the early days and others used their trademarks as domain names. There are reported cases where these corporate houses have bought domain names at a price. Now, many industries are reserving domain names of their interest. For example, it is reported that Craft Foods Inc. has registered 150 domain names relating to its product line. Similarly, Proctor and Gamble has reportedly obtained domain names corresponding to trademarks for its products and has taken additional steps of registering domain names associated with the use of its products, such as "underarm.com" and "diarrhea.com".

A domain name is becoming a valuable piece of intellectual property in cyberspace, but it is not a legal right as such - unlike patents, trademarks and copyright, there is no domain name law. It is quite evident that lawsuits involving domain names will emerge. It may be a difficult choice to determine whom the real infringer is, the owner of the domain name or the NIS or the service provider. New guidelines have been worked out which put heavy responsibilities on the person applying for a domain name so much so that he/ she has to almost certify that the proposed domain name does not infringe any trade name, company name or any other intellectual property right. Many developing countries are not members of treaties related to trademarks. Due to the international nature of the internet, this will lead to many legal cases as many applicants will have very serious difficulty in accessing the trademarks and trade names already registered in other countries. This development makes the allotment of domain name dependent on a global search. Further, consideration may be given to changing the format of the domain name to avoid the trademark issues. No clear-cut guidelines exist to decide the cases related to domain names and trade names. However, it seems from a number of judgements in USA that the trademark laws can be used to settle the IPR issues related to domain names Vs trademarks/ trade names.

3.3 Patents

As mentioned earlier, patents are awarded for inventions leading to products or and processes. It is therefore clear that patents can be obtained for devices used in the IT industry, their electronic circuits, components and process to make these components and so on. However, the position regarding patentability of software used in devices and software per se varies from country to country.

One does not face any problems when a novel hardware has to be patented. The hardware candidate, depending upon its nature, can suitably be defined as an electronic machine or apparatus or device. The question comes when protection is sought for software, where there is no tangible product. In India, a physical device along with a computer programme is a candidate for patent. In many other countries, however, software per se has become a patentable subject matter. Software patens are considered as process patents and this decision has emerged from court decision. The landmark decision was given by the US Supreme Court in 1981 in the Diamond Vs Diehr case, allowing patenting of software. There are two

advantages of software patents namely, copying of the idea of a patent is prohibited and a stronger legal protection is ensured. One of the reasons of starting, software patents. is that these are now developed with substantial investment of finances and human resources and are responsible for better functioning machines, novel performance of microprocessors and when transported through discs it becomes a tangible product. Recently, in 1998, in the case of State Street Bank & Trust Co Vs Signature Financial Group Inc. , the US court of Appeals held that business methods can be patentable subject matter. This underlined the patentability of software patents covering internet-related method of doing business. However, in most countries computer programme per se can not be patented and the protection which is available is through copyrighting.

In view of the transcontinental nature of the internet operations, it Would be better to minimise infringements by providing better protection mechanisms through better technologies for encryption and decryption. In the context of e-commerce, these technologies play, a very important role as they provide the best solution for avoiding unlawful access to what is being transacted on the internet between two or more parties. This secrecy could only be maintained by assigning special keys (codes) to the players of e-commerce having unique identification. The concept of digital signature is based on these technologies. The development of digital technology has permitted a huge expansion in the capacity for encrypted services. However, at the same time the sale of unauthorized decoding devices has had an adverse effect on the operators of encrypted services. EC has estimated that unauthorized decoding devices currently represent between 5 and 20% of the total number of devices in circulation. This would promote some internet service providers and database operators to monopolise such devices and make the users dependent on the operators for many other facilities, which the users themselves can arrange. As the sophistication of technologies goes up with the passage of time, developing countries may face a difficult time especially in terms of hardware. The issue becomes more complex in the face of the fact that such devices are eligible for patents. Software, encryption and decryption systems including equipment, assemblies, integrated circuits, components or software with capability to maintain secrecy, compression algorithms, techniques for representing graphical images, databases and databases retrieval techniques have become subject matter of patents in developing countries. For example, US Patent Number 4,405,829 (September 1983) deals with the RSA encryption, 5,396,343 (March 1995) with. image compression systems with optimized data access, 5,428,741 (June 1995) with high speed

image preprocessing system including a multipurpose buffer for storing digital image and 5,428,462 (June 1995) with facsimile apparatus having, user name resister with means for receiving image

signals. Devices being used for decryption are subject matter of patents. Once hardware are protected through patents, it would be difficult to by- pass them. It appears possible that such devices may be monopolized globally as the business of internet gets into a few hands which appears to be a distinct possibility.

3.4 IC layout design (topographies) of integrated circuits

Members of WTO shall consider unlawful the following acts if performed without the authorisation of the right holder: importing, selling, or otherwise distributing for commercial purposes a protected layout design, an integrated circuit in which a protected layout design is incorporated, or an article incorporating such an integrated circuit only in so far as it continues to contain an unlawfully reproduces layout design. The term of protection shall not end before the expiration of a period of 10 years counted from the date of filing an application for registration or from the first commercial exploitation wherever in the world it occurs. The term will be not less than 10 years from the date of first commercial exploitation in those Members which do not require registration. Notwithstanding the above provisions, a Member can also prescribe that protection shall lapse IS years after the creation of layout design.

It is important to note that the regulations are not intended to prevent anyone making an IC chip which performs the same function as another chip. The regulations protect the design of the topography of an IC chip against copying for the purpose of protection. An IC is an article, which performs an electronic function and which consists of layers, at least one layer must be a semiconductor material and at least, one of the layers must have a pattern which (pattern) must relate to the electronic function of the IC.

What is protectable:

* the pattern of a layer of the end product
* an intermediate pattern created during manufacture, such as photographic mask
* arrangement of the layers in relation to each other

For getting protection, layout design should be original. It is not considered original if (i) its making involved no creative contribution by the maker and (ii) it consists of designs that are staple, commonplace or familiar in the semiconductor industry. All the ICs can be protected through a separate regime. There are strong indications that software developed for masking information or avoiding infringement through special technique like the watermarking technology, will be converted into chips and then multiple protection may be available for software. The chip could be protected under the IC lay-out design or as a component of an overall hardware.

1.0 New Issues Opened by Digital Technology

The move from analog to digital technologies for storing and transmitting information is a major foundational shift in the information technology. New paradigms of economics and law, including the intellectual property laws will have to be evolved to solve new problems not experienced so far. IP laws have, in the past, responded to new developments in science and technology, but with a time lag. For example, copyright was evolved as a response to the development of the printing press. In the seventeenth century, the right to copy was equivalent to a right to vend because it was cheaper to buy an authorized original of the work than to copy it. Basic concepts of copyrights protection must shift as the relative costs of the events affecting the creator's market position change. Internet has posed many new questions related to copyrights, trademark and patents; countries are even thinking of evolving new protection regime to protect commercial interests through protection of creators works.

The growing power and ever diminishing costs of computers in the last 50 years have brought about some important convergence among technologies through which information has been produced and distributed. Office automation, especially word processing, computerization of newspaper publishing, and the availability of low cost open architecture

computer networks have been responsible for moving away from purely paper and ink based technologies. The PC revolution and access to digital communications have made it attractive to disseminate information electronically. Much of the information produced and distributed through broadcast and television, radio and telephone conversations were analog in nature. As a result it was difficult to transmit different categories of information through a common channel. With improvements in the digital technologies, it became feasible to conceive of the voice and video content of television, radio and telephone being digitized and produced and distributed through digital networks that would no longer be distinct from the networks used for text based information. The different categories of information have distinct positions in law but with this erosion of the boundaries between categories, a new challenge for evolving an appropriate law has become imminent. Further, the information can be replicated with a very high speed and each copy is as good as the original. Digital representation also allows random access to parts of a document or message rather that requiring review of an entire new record from beginning to the end.

Some basic issues influencing the application of existing, intellectual property rights in the Internet environment have emerged and these call for a shift in the conceptual framework, operational and execution strategies and legal premises. Firstly, we are dealing with a truly intangible and an ephemeral property in cyberspace, which does not exist in any particular location as we understand, but seems to float in space. All intellectual property rights are territorially limited, in the sense that the laws of the country, where the alleged infringement is supposed to have taken place, will decide whether an infringement has really taken place or not. The traditional notion of infringement needs to re-appraised as it may sometimes be difficult to locate the infringer and sometimes the place of infringement may not have proper IP laws, particularly copyright laws. People involved with intellectual property rights like authors will have to review their position, especially in the light of the potential for exploitation, and adopt new market and investment strategies. It is likely that novel methods will be developed by investing large sums of money to stop unauthorized use of copyrighted material along with other systems using high technologies. This may limit the total number of service providers on internet and these players will then dictate the future use of internet. This may not allow open trading in intellectual property. Further, the technological convergence puts pressure on traditional institutional arrangements for selling things, collecting money, and preventing piracy. Basic legal concepts are needed to be developed.

There has been a rapid growth of internet. According to a study by the International Data Corporation , USA the e-commerce revenue was expected to hit US$400 billion by 2002 from US$ 2.6 billion in 1996. Similarly, the global internet audience will jump from 100 million by the end of 1998 to 320 million by 2002. The study also showed that the number of devices used to access the Web will increase from 78.1 million in 1997 to 515 million in 2002 (Source: http://news.cnet.com). As the number of users increases the chances of infringement of copyrighted material also goes up. The intellectual property framework acknowledges that some free riding is inevitable in any publishing activity; the important question about protecting intellectual property is whether large-scale piracy could be reduced to near zero level. The stakes in the entertainment market are quite high and there is a need for a close to airtight mechanism for protecting the rights of creators and therefore, there is an urgent need to have a close look at transacting music and, pictures etc. over the internet.

2.0 E-commerce and IPR

Ensuring and enforcing intellectual property rights in the e-commerce environment is a topic of global interest today. Both WIPO and WTO have been looking at this subject matter for some time. IPR in e-commerce would not be monolithic in nature but multiple IP rights will have to be used for protecting an inventive work. Although, there is no, global agreement on what kind of protection would be best suited, companies have started protecting their inventions/methods for smooth running of e-commerce through patents in USA. Many patent applications related to e-commerce may raise some heat and controversies, since most of the patents granted or in application stage are very broad in nature. E-Commerce patents may force reconsideration of strategies. This would imply that businesses may soon have to pay royalties on such commonly used e-commerce techniques as compression, watermarking, encryption and clearing house technologies, creating significant cost consideration for e-commerce strategies. In addition it is felt that the Internet is progressing too fast for patent offices to fully appreciate the implications of patents they grant.

IPR professionals are faced with a totally new situation while dealing with the information technology. All forms of IPR would need to be considered for protecting an invention in this area and perhaps, some fresh thoughts are called for ensuring that IP rights are not violated when business is transacted over the internet. New IP rights are better avoided but at the same time the interests of innovators need to be secured with the existing provisions. Whether a total governmental control over unauthorized reproduction and distribution of copyrighted works over internet will work or not, is a difficult question to answer at this stage. Can we leave everything to the market forces alone? Most countries may not like the idea of leaving things to market forces. The experience of satellite communication and international telephone services may be helpful in solving some of the conflicts arising out of cross boundary and simultaneous use of information. It appears that innovative technologies and industry self regulation, rather than policing, may provide some answers. If there is a common and clear understanding about enforcing copyright laws, an effective awareness campaign may be beneficial for the end users, content providers and internet access providers.

Management of IPR in Small Scale Industries

With 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 know how and innovations. Special emphasis would have to be attached to tacit knowledge available with people and its translation into organization action plan. Time for grasping new knowledge would become an important parameter for determining the success of an enterprise; the shorter the time the better are the chances of success. Small and medium scale industries face a major challenge in the new environment because they are not familiar with best ways to manage their knowledge assets. These industries play a crucial role in the economy of any country, especially the developing countries, and therefore a State must pay concentrated attention to

ensure their meaningful existence by facilitating the process of readjustment of these industries in the new environment so that they can occupy an advantageous position in the new economy and global trade. The role of small scale industries (SSI) in India has been very significant since 1947 and this sector has successfully helped the country in riding over many difficult situations. Its role was recognized in the Industrial Policy Resolution of 1948, which stated that cottage and small scale industries were better suited for utilization of local resources and achievement of local self sufficiency. Subsequent Industrial Policy statements made necessary adjustments to meet the changing needs of the economy, but the basic thrust remained the same. These industries were protected from competition of big companies by earmarking a large number of products for exclusive manufacture by them. Accordingly, a multitude of fiscal and other support schemes have been in force from time to time. SSIs have emerged as a dynamic and vibrant sector of Indian economy by contributing significantly to the realization of socio-economic objectives of growth in employment, exports and industrial production, fostering entrepreneurship and ensuring industrial dispersal. Various agreements under the World Trade Organization (WTO) are likely to affect the SSI sector in many ways. Removal of QRs will allow free and cheaper imports and will result in stiff competition for the SSIs. It would be difficult to follow the track of reverse engineering especially when the patent activity increases in the country. Making and selling of patented products, for example, with out paying royalty to the patent holder would be impossible.

Small scale industries in India

Small Scale Industries (SSI) in India , like in many other countries, occupy a central position in the Indian economy and development. The total output of the SSI sector was Rs 5785 billion (US$ 115.7 billion) in 1999-2000 which was 32% of the GDP. The employment in the sector stood at 17.85 million which was much more than the employment generated by any single sector like the organized private sector and the public sector. The SSI sector constitutes 96% of industrial units in India and the number of such units is over 3 million. SSI units generate 34% of the national export, which would be about 10% of the total output of the sector. The SSI sector had a major share varying from 60% to 100% in exports of processed food, woolen garments, readymade garments, rayon and synthetic products, processed tobacco, cashew kernels, lac and spices. The Government of India has been taking many steps for

ensuring growth of the sector since the independence. SSIs have been engaged in innovations at many different levels, not necessarily in technological areas. The process of globalization which took its roots in 1980s and was followed by introduction of the Agreement on Trade Related Aspects of Intellectual Property Rights in the multilateral trade agreement now known to be implemented by the World Trade Organization (WTO). With the advent of TRIPS the industry whether SSI or the bigger ones in India are facing a situation of international competition and also internal competition. Seeing the contribution of SSI in the overall exports, their strengthening in innovations and management of knowledge should occupy the center stage. However, it has been observed that many writings on upliftment of SSIs prefer to remain silent on knowledge management which includes IPR management.

Different systems for classification

Different countries have different systems and criteria for classifying an industry as a small scale industry or a medium scale industry. Some adopt the criterion of investments, some adopt the criterion of number of employees, some consider sales as an important criterion and some adopt a combination of these parameters.

The SSI sector in India has been divided into five sub-sectors namely according to the classification adopted 0n December 24, 1999. These sub-sectors are Small Scale Industries, Ancillary Industrial Undertaking, Tiny Enterprises, Small Scale Service and Business Enterprises and Women Enterprises. The first three encompass those industries which have invested up to Rs 100 lakhs (US$ 200,000) in plant and machinery. For the tiny sector the limit is Rs 25 lakhs (US$ 50000) in plant and machinery. SSIs are required to readjust with changing situations and therefore, the criterion of defining an SSI keeps changing.

In Chile, 17% of the 527,000 firms can be labeled small or medium sized firms(SMF) which contribute 37% of the national employment, approx. 1,8, million people. Firms are classified small if there annual sales fall between US $75,000 to US $ 800,000 whereas they are classified as medium if the sales are between US $ 800,000 to US $ 3.1 million. (Entrepreneurship and Innovation in Chilean Firms : An exploratory study. Jose O. Maldifassi, International J. of Entrepreneurship and Innovation Management, Vol 1, No. 1, 2001). It can be seen that the Chilean way of classification is quite different.

According to the EU Council Decision 1999/172/EC of January, 1999 adopting a specific programme for research, technological development and demonstration on promotion of innovation and encouragement to SME participation, an SME is a firm which has fewer than 250 employees, has an annual turnover of no more that 27 million, is not a research

center, research institute, contract research organisation or consultant and meets the criterion of independence (not more that 25% is owned by one or more companies which are themselves not SMEs). The criteria of identifying an SME is elaborate and different from the earlier two. Many countries in Europe often follow the criterion of classification based on number of employees.

In USA SMEs are defined as enterprises having fewer than 100 employees. These enterprises account for approximately 99.85 of all enterprises in USA. The SME's share of employment in 1991 ranged from 87.6% in construction to 37.6% in manufacturing.(Mathew, P M ; Business Demography and India's Small Industry Policy, IASSI Quarterly, Vol.19, No.4, 2002)

One thing is clear that small and medium scale industries provide large employment in every country and contribute to overall industrial production in a significant manner. Therefore, this sector cannot be allowed to languish in the face of new situations arising out of liberalization and entry of WTO. One is actually looking for a balance between conflicting demands dictated by socio-economic factors and competition. Prima facie, it would appear that these industries can stabilize and a survive if they are able to innovate new products and processes to meet the market demands in time. However, it should be reckoned that this task is not easy and is time consuming. There is need to change the mind-set radically and evolve a different management and R&D culture. It is at this point that the management of knowledge and intellectual property rights become extremely crucial. Whether, intellectual property rights would provide all the answers or not is not known. It is however, expected that it would be helpful in better repositioning in the new environment.

Research and development and innovations

According to Rizzoni (Rizzoni A (1991) "Technological Innovation and Small Firms : A Taxonomy", International Small Business Journal, Vol.9, No.3, pp 31-42)), small firms can be categorized into 6 different groups namely, static, traditional, dominated, imitative, technology based and new technology based. Static small firms are conservative and somewhat inefficient and hence, are outside the innovative process. Traditional small firms rely on

innovations made elsewhere and incremental innovations at their end, but are quite conservative in management and strategy planning. Furniture clothing and shoes are the areas served by such firms. Dominated small firms produce on behalf of large firms in mature or growing sectors. There is very little scope of innovation. If there is innovation, it would be based in the suggestion of the contracting firm. Ancillary units will fall under this category. Imitative forms tend to be innovative in a limited sense and that is, they tend to reverse engineer existing products with some improvements. These firms operate in a known sector and thus minimize their risks. Technology based firms operate in a rapidly growing sector and this face uncertainties. These firms have to rely on innovations, which are usually internal. Telecommunication systems and automation are a few sectors open to them. New technology based small firms deal with new technologies requiring high technical skills and management acumen. These will operate in emerging sectors like biotechnology and semi conductors industries. Such firms will have to develop close associations with universities and publicly funded R & D institutions.

Barring the static firms, others face different types of IPR challenges and would need to evolve strategies suiting different conditions. For the imitative firms the risk of infringing existing patents or other IPR should be minimized; ideally it should be brought to zero. One way would be to study the existing products carefully and list those parts and components and sub-systems, which are covered by patents in the country and identify niche areas of improvements. This is not going to be an easy task because it would call for change in the management culture, presence of technically skilled people and a system for information collection. The technology based firms would follow similar situations and the path for innovation would only be at a little variance. The new technology based firms have a better chance of creating new innovations, which could be candidates for patents. Therefore, these firms have to have a system of extensive information and patent search to identify new areas of research / development and also to monitor day- to- day development in the relevant areas. As these firms deal in cutting edge area, they face very high risks and they should therefore bring more scientists within their network who could help them generating and pursuing new ideas and concepts. This classification will apply to the Indian firms as well and it would be desirable to address each type of firm with a slightly different and appropriate policy framework.

R&D scenario in India

In addition to the incentive given by the Central Government, various State Governments also offer support and subsidy on fixed capital investment, sale tax benefit, power subsidy, infrastructural / technical support, quality control support, subsidy on cost for obtaining technical know how, delayed interest payment, exemption from paying stamp duty and some other activities. No single State Government offer all these supports. The list is meant to give an idea about varied kinds of supports provided by the State Government. It would be noted that States do not give any direct support for enhancing R&D capabilities of the industries.

The Central Government has many schemes to support actual R&D in industries. The Home Grown Technology provides funds for scale up of technology at an industry with financial support going up to 50% of the cost of the project. The remaining amount has to be contributed by the industry and the 50% financial support is available on loan basis on soft terms. The scheme is operated by the Technology Information, Forecasting and Assessment Council. The programme Aimed at Technological Self Reliance (PATSER) operated by the Department of Scientific and Industrial Research aims at promoting and supporting industry in developing indigenous technology and also absorbing imported technologies. Involvement of an academic institution or an R&D institution is essential. The Technology Development Board (TDB) provides loans at 6% simple interest for development of technology to the marketable level. The initial technologies should have been developed at an Indian R&D or academic institution or within the industry itself. These schemes cover the risk involved in R&D and industry do feel encouraged to try this avenue for doing R&D for new products and processes.

Recognized R&D Units

The benefits and concessions mentioned above are available to only those industries, which, have been engaged in R&D for some time and should possess some infrastructure for doing R&D. The benefits for the export purposes, however, are not linked to R&D. The Department of Scientific and Industrial Research under the Ministry of Science and Technology has a scheme to recognize in-house R&D units in industries, which after getting the recognition can avail of the benefits. It is reported that approximately 270 SSIs have

recognized R&D units. (Due to changes in the definition of the SSI and also due to growth of an industry, the same industries may not remain in the list and the list may vary from time to time.) These SSIs are engaged in many different areas, which include chemicals, drugs, biotechnology, electronics, seeds, machine tools, telecommunications, information technology, software, electrical enginering, health care, instruments, flavours and essence, engineering and computers. From the names of the companies it is inferred that about 24% of the companies are dealing in electrical engineering, electronics and telecommunications, 10% in drugs and pharmaceuticals, 10% in chemicals, 5% in engineering and the rest in machine tools, biotechnology, computers etc.

A systematic study on R&D in the SSI sector in India with detailed emphasis on industries in the State of Karnataka was done some time back which is available in a book form entitled " R&D and Technological Innovations in Small Scale Industries " by M H Bala Subrahmanya et al. published by Allied Publishers. The book puts forward the following important findings:-

1. R&D is performed in house, generally informally. In the name of outside help, support is taken from relatives / friends and consultants.
2. Improving quality, reducing costs and meeting customer needs are the major objectives of R&D
3. Incremental innovations form the striking feature of R&D in Karnataka.
4. Almost 45% industries were found to have a full time worker devoted to R&D
5. SSI units, which have performed R&D have larger scale of production, higher capital productivities and higher output as compared to other SSI units.
6. Export oriented SSI were engaged R&D more than those which were not engaged in exports
7. Exports are higher for SSI units which are engaged in R&D
8. Majority of owners / managers of units in Karnataka are diploma or degree holders.

It has been further reported that the most noteworthy achievements of R & D in the SSI sector (study based on 716 non tiny and 250 tiny industries located in Karnataka) is that 75% of the units achieved quality improvement by performing R & D. About 66% could reduce the rate of rejection and more than 50% units could increase the productivity through R & D. It infuses confidence that the SSI sector is capable of need based R & D to remain competitive. It may also be noted that the limits of tiny and non-tiny sectors were different from the present limits.

Subject areas of patenting

Most of the applications relate to drugs and pharmaceuticals including herbal drugs. A limited number of applications relate to engineering, electronics and chemicals. The applications in the non-drug areas relate to intercom system for aircraft, process and plant for producing ethanol from sucrose, process for making baker's yeast, combuster module for industrial gas turbines, gear-box, compressor for gas turbine, cutting edge for earth moving machines, solid state fermentation, continuous casting, waste water recycling plant, spectrophotometer, herbal compositions for use as medicaments and many others. About 62% of the applications are related to drugs and pharmaceuticals. It is a matter of concern that the filings by companies engaged in electrical engineering, electronics and telecommunication are very low although maximum recognized R&D units operate in these areas. Apparently, the return on fiscal and other incentives from these industries is inadequate and some steps should be taken to make them more innovative.

The book by M H Subrahmanya further reports that only 5 units in the non-tiny sector and 3 units in the tiny sector have obtained patents. "One of the reasons cited by some of the entrepreneurs for not going for patents is that a patent only provides wide publicity to their innovation achievement but it does not prevent the emergence of competition in some form or the other, which they do not want." Industries more frequently involved in R & D are food products, chemicals, rubber and plastics, non-metallic mineral products, metal products and machinery and equipment.

The Chilean experience is also similar as far as the preferred areas of research and development are concerned in the small scale industries. Most innovations by SMFs in Chile were by way of incremental innovations – for reducing costs or improving efficiency of existing process / machinery. Several original software packages have been developed locally and some of them have been successfully adopted by large banks, and even exported to other Latin American countries. In 1994, a small group of Chilean companies exported $6.2 million in locally developed electronic equipment of which some even went to France and Sweden. However, no patents were obtained for the above cases. The reasons were several – the cost of obtaining patents, the long time involved in grant of a patent, not foreseeing many benefits in a globalized economy, and that these were only incremental inventions. (Jose O. Maldifassi,

Entrepreneurship and Innovation in Chilean Firms : An exploratory study. International J. of Entrepreneurship and Innovation Management, Vol. 1, No. 1, 2001)

The Italian experience in terms of areas of innovations captured by small and medium scale companies having 20 to 500 employees has been quite similar. The expenditure on new designs and tooling has been high during the R&D phase as compared to expenditure on patents and licenses. The average expenses on design and tooling were about 10% of innovative expenses as compared to about 1.7 % on patents and licenses. The results are based on study of 22787 firms in the period 1990-1992. (Alberto Silvani and Georgio Sirilli, Science and Technology and Innovation Policy in Italy. Research and Innovation Policies in the New Global Economy Ed. Philippe Laredo and Philippe Mustar published by Edgar Elgar, MA, USA)

Analysis of the scenario in India

Awareness about intellectual property rights among the Indian industries, especially the small scale industries was very low in 1995; it has been growing with each passing day due to the efforts made by the government and industry associations in creating awareness. Due to the very nature of the SSI sector in India, it has to adopt both defensive and aggressive postures in management of knowledge. Many engineering industries are involved in doing job work of different kinds. An industry approached the author about one year back with an interesting question. The MD of the company told that some one had given him a component to copy and fabricate. This component was apparently patented in USA as it carried a remark " Patented in USA". The question was should he accept the order or not? He was explained that making and selling of a patented product with out the permission of the patent holder is an offence. However, if there was no patent in India then the component could be made but should not be exported to USA or any other country, which had awarded patent to this component. Although the fabrication was being done on some one else's behalf, yet the fabricator was also guilty for infringement of patent. Therefore, he was advised to look at the India patent register to find out if the component was patented in India or not. Further, it is to be established if the patent was in force or not. We could not locate any patent in India and he was informed of this. The author does not know what he finally did. It is however clear that with out the knowledge about the patent laws he could have got into a legal hassle.

In another case a small scale enterprise approached the author with a concern that a foreign company was filing a large number of patents in his area of activity and many applications appeared to be similar to what his company was already doing. He was advised to follow these applications closely and study the patent documents carefully once granted. In the meantime he can also look at the PCT or EPO publication to read the applications at an early date to work out a strategy. He was told about patent searches and the provision of opposing grant of a patent in India. He was also told to maintain a record of drawings of his products duly stamped and signed with date of the creation of the drawings. The company has now set up an IPR cell and assigned an officer to handle the subject.

Most people think patent is synonymous with intellectual property rights and they do not seem to know that copyrights, industrial design, trademarks etc. are different forms of IPR and should be obtained in respect of any innovative work if possible. SSIs will have to pay attention to build their brand equity as soon as possible through trademarks and domain names. Registration of domain names would become indispensable as soon as electronic trade picks up and industries start doing business on B2B networks.

Industries dealing with herbal products have been facing problems in export. An industry has lost its export market in USA because some company in USA got a US patent related to the raw material, which was being exported by this company in India. Its buyer in USA received a legal notice from the patent holder and he stopped buying the raw material for fear of infringing the patent. The Indian company had lost the export business. There is a need to go into the merits of the patent to see if the concerned patent can be revoked or not. Unfortunately, the industry lacks the expert knowledge and financial resources to proceed in this direction.

The reasons advanced by the Indian industries for not filing patents are partly justified. However, the reasons at times emanate from ignorance as well. They fail to understand that by patenting their products or processes they stop the entries of their competitors in the market. Protection through trade secret is a well established strategy but the right knowledge to maintain the trade secrets should also be applied. In the Indian context it is important to note that there is no separate law on trade secrets and all the necessary steps to maintain the trade secret will have to be anticipated and put into practice. The industry should look for legal help. It is to be appreciated by the industry that keeping a strong IP portfolio makes a good business sense. If one were to take into account all the benefits provided by the government and the benefits that may accrue from correct tax planning, no industry will ever rule out creating an IP

portfolio for itself. Further, it can help in securing loans, enhance market image and attract good alliances.

It would appear that many companies are involved in product design and modifications. Such innovative products can be protected by industrial design with minimal efforts. The same holds for textile designs, pottery designs etc. Again, due to ignorance industries do not take advantage of the laws.

By the every nature of the definition of SSI in India, many software companies will fall under this category. "It is unlikely that Indian companies can be successful in the development of products with very short life- cycles and low prices. There does, however, seem to be an opportunity for Indian companies to develop products of intermediate complexity targeted at niche markets." (Innovation in the Indian Information Technology Industry: A Study of the Software Product development Process"; Rishikesha T Krishnan and Ganesh N. Prabhu; Science, Technology & Society, Vol 7, No 1, January- June 2002.) , If this argument is accepted then, the industry should seriously consider patenting of software in USA. It may be noted that the Indian software industry has shown total apathy towards protecting their intellectual property.

The lack of financial resources to obtain and maintain patents in India has been identified as an important factor by the industry for the low activity. It may be reckoned that protecting inventions in foreign countries could be very expensive which most SSIs would not be in apposition to afford.

Steps for creating an IPR culture

Many government agencies have taken concrete steps to create awareness about IPR among scientists, technologists, policy makers, science planners from academic institutions, R&D institutions, industry, government and NGOs. The Patent Facilitating Centre under the Department of Science and Technology has been playing a leading role in this direction by conducting awareness workshops all over the country. It has conducted 162 workshops. Almost 20 of these workshops were conducted along with the Ministry of Small Scale Industries for the SSIs. PFC on its own has also conducted similar workshops for the SSI and helped a number of them through free advice and consultancy.

Policy issues and conclusions

1. An IPR awareness campaign should be launched for the benefit of the SSI sector, especially those enterprises which have recognized in-house R&D units.
2. Special emphasis should be placed to find out as to why the SSI dealing in electronics, telecommunications and electrical engineering do not file patent applications. They should be empowered to do so as this sector enjoys the maximum from various incentive schemes.
3. Software companies have contributed significantly to exports and this position needs to be strengthened. These companies would do well if they start protecting their intellectual property rights in India and other countries.
4. As SSI rely more on improvements, the need for remaining abreast with what new products or processes are being patented becomes important. SSI will have to keep doing patent searches and design searches in the area of interest.
5. In order to grow vertically and horizontally in the competitive situation, SSI will have to look towards qualified and experienced scientists working in educational institutions and publicly funded R & D institutions for new ideas, experimenting, scale up etc. and sometimes also to the government funding agencies. With the growing awareness about IPR among scientists, discussions on IPR issues may become the central theme. Unless SSI are aware about the issues on IPR, they will not be able to participate fruitfully in such discussions and find it difficult to come to a common understanding.
6. Many SSI units in India wish to introduce new concepts and new technologies in their plans to have an edge over their competitors. Such information is not available in the usual documents one is generally conversant with. They are still not used to scanning and studying patent information, specifically full text patent documents. The State should come forward and help them in this respect by acquainting SSI with this type of information. The challenge is massive and appears insurmountable. Similar to patent clinics, one can think of introducing advisory clinics on technology scouting in which some knowledgeable persons can identify patents of relevance to a specific sector and discuss with the SSIs. This cannot be a one time process but has to continue till the industry feels confident to be on their own.
7. Many SSI rely on technology acquisition from somewhere else and often, the issues of IPR written in the license agreement may not be completely understood by the SSI due

to many reasons. For example, an SSI may not be given any right to have the ownership on an improvement made over the licensed technology. Skills of licensing and technology acquisition should be imparted in training programmes for the SSI.

8. SSI should follow a three tier system for handling the IPR issues, the first level could be the internal assessment, the second level could be discussing with consultants or consulting agencies or publicly funded centers and the third would be discussions with patent (IPR) attorneys. The governments could help at the second level by providing free consultant services, patent search reports and other information related to IPR and associated knowledge about other chapters of WTO such as technical barriers to trade and subsidies and countervailing measures.

9. It has often been felt by the SSI that the costs involved in patenting and maintaining patents are high and they cannot afford them. The argument has been put forward by SMEs in other countries as well and it looks imperative that states should intervene and extend a helping hand. For example, R & D type SSI may be exempt from paying the official fee for patenting and maintaining patents.

10. In order to support SMEs in smooth introduction of patents owned by universities and R & D institutions, advisory services may be provided on such patents. Further, patent fairs may also be organized.

11. The author has been organizing patent clinics in some organizations, none in the SSI sector, in which the inventors discuss their inventions and seek advice on conceptual and operational issues related to obtaining patents on their inventions. The experiment seems to be yielding very good results and inventors, who were earlier skeptical about patents, have also started attending clinics and showing interest in obtaining patents. Such clinics may also be arranged for a cluster of industries. However, the controlling factor in making such clinics successful would be whether the industries are able to develop confidence in the person who goes there to advise them.

12. SSI do spend time on new product designs, which many a times would be based on reverse engineering or copying some existing design elsewhere. They should be constantly told about the risk of infringing existing patents and other intellectual property rights.

13. Due to lack of awareness about the legal implications of infringements or near infringement, SSI face legal suits and they do not know how to handle such matters. One of the reasons is that they do not have information about IPR attorneys in the country and sometimes they do not even know that IP is a specialized and independent area of law. Such cases are not well recorded but are brought to the attention of experts during awareness workshops.

14. Management of IPR should become an essentially a corporate function and the associated knowledge should be placed at par with any other assets of the company. Tax benefits may be available for intellectual property, which is an intangible property, along with other fiscal incentives for carrying out R&D and introducing new products and processes in the market.

15. Trademarks and domain names should be extensively used for creating brand equity.