Chapter One

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I. The Setting

One of the crucial concerns of the developing countries, in recent times, has been to evolve an appropriate legal mechanism to protect the new and high technologies. The basic thrust of this concern is shaped primarily on the understanding that the acquisition of new technological developments are *sine qua non* for the acceleration of the process of development. Towards this end, developing countries have been adopting various measures. One is to offer generous concessions to the owners of technology, principally multinational companies (MNCs). Despite this, developing countries have not generally succeeded in obtaining the state of the art technology. The other is to create conditions conducive to attract the latest technological breakthrough. In this regard, a suitable and well balanced law of patents has been considered as immensely important.

The essential scope of application of the patent laws is limited territorially. In other words, national patent laws play a central role in deciding the extent of protection to be granted to the patentable inventions. On the other hand, international patent norms is embodied in the Paris Convention for the Protection of Industrial Property, 1883 (‘Paris Convention’ hereinafter) outline the minimum standards which will have to be incorporated in the national patent laws of its Member States. Accordingly, the evolution of international patent system, since the Paris Convention coming into force in 1883, has proceeded at two levels i.e., international patent system at the first level outlines the
minimum standards and at the second level national patent laws incorporate these minimum standards.

Independence of national patent laws to devise an exclusive protective mechanism to preserve the interest of the inventor on the one hand, and the public interest on the other constitutes one of the basic objectives of the patent system. A patent monopoly created by a national patent law is the reward offered by society to the patentee for the efforts and resources invested in the creation of the invention. The patentee in his turn is expected to convey to society all the technical information needed to enable others to use the invention and to work it in the interests of the society. Even the minimum requirements as envisaged in the provisions of the Paris Convention grant a fair degree of freedom to national patent laws to incorporate these 'public interest' concerns.

However, some developing countries, including India find the minimum standards as envisaged in the Paris Convention inimical to their interests. For this reason, India has not joined the Paris Convention. India's endeavour, on the other hand, has been to evolve a patent system which would harmoniously balance the public interest and the private gains of the patentee. Accordingly, Indian Patents Act, 1970 (IPA) enacted on the basis of the reports forwarded by the Bakshi Tek Chand Committee (1950) and Justice N. Rajagopala Ayyangar Committee (1959) seeks to reflect its socio-economic policies. Similar efforts have been made by Brazil, Argentina and other developing countries.

Despite the efforts by developing countries to evolve their own national patent laws consistent with their socio-economic policies, the patents granted by them are
primarily owned by foreigners. For instance, in India the available figures for 1991-92 show that more than 70 per cent of the patents are owned by foreigners.

Table 1.1: Statement Giving Miscellaneous Information Relating to Patent Applications Filed During the Period from 1982-83 to 1991-92 in India

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Applications made</th>
<th>No. of Patents granted</th>
<th>No. of Patents in Force</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indians</td>
<td>Foreigners</td>
<td>Indians</td>
</tr>
<tr>
<td>1982-83</td>
<td>1135</td>
<td>1950</td>
<td>0405</td>
</tr>
<tr>
<td>1983-84</td>
<td>1055</td>
<td>2065</td>
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<tr>
<td>1984-85</td>
<td>1001</td>
<td>2316</td>
<td>0263</td>
</tr>
<tr>
<td>1985-86</td>
<td>0999</td>
<td>2527</td>
<td>0451</td>
</tr>
<tr>
<td>1986-87</td>
<td>0983</td>
<td>2506</td>
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<td>0519</td>
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<tr>
<td>1990-91</td>
<td>1180</td>
<td>2583</td>
<td>0379</td>
</tr>
<tr>
<td>1991-92</td>
<td>1293</td>
<td>2259</td>
<td>0551</td>
</tr>
</tbody>
</table>


The above table indicates that in the last ten years the number of patents in force has consistently remained in favour of foreigners who account for nearly 75 per cent of the total patents granted. Granting of larger share of patents to foreigners, mainly MNCs, in developing countries has given rise to some serious consequences. These consequences have also arisen on account of the international patent system's failure to sufficiently accommodate the interests of developing countries. Accordingly, the 1975 UNCTAD study entitled "The Role of Patent System in the Transfer of Technology to Developing
Countries", on the working of the international patent system, noted that the developing countries have continued to stay at its periphery with no major role to play.

Furthermore, the owning of major share of patents by the foreigners has given rise to the following serious consequences: firstly, patents are seldom worked in developing countries, even when it is techno-economically feasible to do so; secondly, the working of the patent in the host country leads to saving of scarce foreign exchange (which is a major constraint to the economic development of developing countries) and the lowering of prices of products, particularly in critical sectors such as food, pharmaceutical, agro-chemicals and the like; thirdly, without the working of the patent, there can hardly be any transfer or diffusion of technology and the promotion of industrial activity in the host country; fourthly, without working, patent protection would, degenerate into a mere monopoly for the importation of the patented article into the country, and device for the reservation of the host country market by the patent owner.¹

In keeping with the spirit of the New International Economic Order (NIEO) and other related developments during the decade of 1970s, a major initiative was undertaken by the developing countries to thoroughly revise the Paris Convention. This initiative leading to long and arduous negotiations in a Diplomatic Conference (convened in four sessions), was based on the "Basic Proposals" prepared by a Group of Inter-governmental Experts in 1975. These "Basic Proposals" contained provisions relating to the non-voluntary licensing, working of the patent grant and other issues which were of concern

¹MTN.GNG/NG 11/W/37, 10 July 1989, Standards and Principles Concerning Its Availability, Scope and Use of Trade-Related Intellectual Property Rights : Communication from India.
to developing countries. It is to be noted that this initiative had its origin in a proposal made by India to the Preparatory Committee in 1974.

The rapid evolution of new technological developments, during the decade of 1980s brought to forefront a new range of issues relating to patents. For the first time developed countries realised the role of state of the art technologies as a strategic element for achieving control of international markets. These issues, according to developed countries, inevitably made the negotiating agenda of the Diplomatic Conference to revise the Paris Convention irrelevant. The six Consultative Meetings subsequently held in smaller groups of countries, failed to reach any conclusions on the agenda of revision of the Paris Convention.

Realising the immense potentials of the new and high technologies, some developed countries, in particular the United States, began pointing out the inadequacies in the domestic patent laws of developing countries. The idea of "distortion of trade" was linked up with the effective patent protection and its adequate enforcement measures. And finally, the Declaration of the General Agreement on Tariffs and Trade (GATT) Ministerial Meeting held at Punta del Este (Uruguay) in September 1986 ushered in the concept of "Trade-related Aspects of Intellectual Property Rights" (TRIPS), seeking to elaborate and clarify the standards of protection available to IPRs. During the GATT negotiations approaches of both developed and developing countries however, differed

\*WIPO, PR/DC/3, Basic Proposals (Drafts Approved or Forwarded to the Diplomatic Conference by the Preparatory Intergovernmental Committee and Other Proposals Referred to in the Provisional Rules of Procedure of the Diplomatic Conference), Geneva, 4 February to 4 March. 1980, p.7.
substantially. The convergence of views in these issues was hard to come about as these were essentially controlled by dominant economic interests.

On the other hand, the impact of new technological developments on the developing countries needs consideration in the context of the traditional pattern of a simple technological innovation. MNCs, to create an artificial need for new and high technologies have been adopting policies which seek to completely exclude viable technological formulations in developing countries. India, for instance, has been facing this problem in the field of software-related technologies. In order to create barriers in the way of smooth absorption of technology, MNCs are increasingly dependent on IPRs. More importantly, by adopting these methods, they seek to curtail the possibilities for developing countries to usefully and easily exploit by way of imitation or reverse engineering the new and high technologies.

The developments which have been taking place in the field of biotechnology, for example, provide many opportunities of growth for the developing countries. Till recently, a majority of them were not sure as to how to protect the inventions emanating in this area. Most developed countries, on the other hand, began searching for an appropriate criteria to patent life-forms in the early 1970s itself with the first successful directed insertion of recombinant DNA into a host micro-organism. The uncertainty, however, still remains as to what extent and what forms of life be patented. Ethical and environmental considerations arising out of the patenting of life-forms have been generating controversial issues. It has been reported that a wide-range of patents awarded
in the US recently may hamper the commercial development of life-saving gene therapies. At the same time, with the existing patentability criteria, as incorporated in the Agreement on TRIPs, the rate of "genetic erosion" from developing countries to developed countries is sure to increase manifold. Similarly, there is still considerable uncertainty as regards the mode of protecting plant varieties. The Agreement on TRIPs, however, seeks to provide protection either by patents or by an effective *sui generis* system. In India, for instance, a draft Plant Varieties Act to give effect to a *sui generis* system has in recent times been the subject of considerable debate.

The criteria of patentability, i.e., novelty, inventiveness and industrial utility as applicable within the structure of national patent laws always provide subjective interpretations. These interpretations, particularly in the developed countries, seek to increasingly restrict the dissemination of the technological developments. The issues concerning patentability of software-related inventions, for instance, in recent times have been evolving through the interpretations of the case laws although the software-related inventions are protected generally by Copyright Law all over the world, the emerging trend through the case laws seeks to bestow the patent protection. There is also a third option whose time is fast approaching i.e., to create a *sui generis* system of protection for the software-related inventions.

The primary reason for the failure of developing countries to gain sufficient access to new and high technologies has been attributed to the 'nature' of technologies themselves. Some of these technologies, for instance, store intense scientific information
in a very tiny chip. Integrated circuits could be cited as one such example. This information encapsulated in a miniature chip or in any form is easily copiable. As a consequence of its easy copiability, the dissemination of the information is also very quick. For MNCs, on the other hand, the solitary concern is to preserve and protect the information stored in the technology so as to keep the product in demand. This is possible only when the fast diffusion rate of this technology is effectively regulated and its feature of easy copiability contained.

Although the questions relating to the patentability criteria are formulated by the countries taking into account their policy framework, it is, however, argued that rapid internationalization of technology necessitates a uniform legal system to define the various aspects of patenting. The proposals of both developing and developed countries to the TRIPs negotiations reflect some of these policy framework clearly. The Indian submission, on the other hand, considers the structural aspects of a patent system vis-a-vis its developmental objectives. In other words, it seeks to identify areas which are crucial in achieving the development objectives set by the patent system and also other related policies set by the Government. In view of this, it is also necessary to examine the limits placed by the TRIPs Agreement on the States to enact their own legislations keeping in view their policy framework. This is particularly crucial when a majority of the developing countries have already assumed obligations under the TRIPs Agreement which *inter alia*, seeks to allow its members to determine the appropriate method of implementing the provisions of the Agreement within their own legal system and practice.
II. Framework

The patent laws constitute one of the major legal tools to implement the technology policy of a State. India, for example, from time to time has declared its technological policy which eventually forms its legal approach towards patent legislation, technology transfer and so on. The Indian Science Policy Resolution of 1958 for instance, sought to "greatly reduce the drain on capital, during the early and critical stages of industrialization". However, in its 1983 Technology Policy Statement, the Government of India states its policy in terms of "the development of indigenous technology and efficient absorption and adaptation of imported technology appropriate to national priorities and resources". Its basic thrust is "self-reliance". It also further points out that "advantage should be taken of technological development elsewhere".

The general policy of liberalization adopted by India in recent years, however, has diluted the concept of "self-reliance" and currently the stress is on the need for acquisition of technology to become competitive at the global level. In this regard, the New Industrial Policy, 1991 (NIP, 1991) states that "whereas Government will continue to follow the policy of self-reliance, there would be greater emphasis placed on building up own ability to pay for imports through our own foreign exchange earnings". At the same time, it also makes references to the "development and utilization of indigenous capabilities in technology and manufacturing through investment in research and

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development". It also identifies the need to "develop indigenous competence for the efficient absorption of foreign technology".

India's basic policy framework, nevertheless, still remains to be "self-reliance and the utilization of indigenous capabilities". However, the emphasis on the "acquisition of technology" so as to become competitive at the global level has introduced a new dimension to the goals of self-reliance. Accordingly, NIP, 1991 further points out that "Government is also committed to development and utilization of indigenous capabilities in technology and manufacturing as well as its upgradation to world standards".

The crucial issue is to examine how this policy framework adopted by India or any other developing country, is reflected in the evolving norms and standards relating to patents. The Indian Proposal, for instance, to GATT's Uruguay Round negotiations outlines the objectives of the TRIPs as to pursue "self-reliance and public interest". It also points out that "any principle or standard relating to intellectual property rights should be carefully tested against the touchstone of the socio-economic developments, technological and public interest needs of developing countries". Among developing countries a similar policy framework is identifiable in the Brazilian proposal to the Uruguay Round Negotiations.

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6 Ibid.

6 Communication from India, n.1.
III. Objectives of the Study

The principal objective of this study is to evaluate the norms relating to IPRs in the light of the provisions of the Agreement on TRIPs and with a special reference to the evolving regimes of patent norms in developing countries. In other words, the thesis seeks to examine the law of patents in its historical context beginning from the early patent systems to the recently concluded agreement on TRIPs. While doing so, it seeks to refer to the specific objectives pursued in evolving the patent system. This is crucial for the following reasons. The objective of the Venetian law relating to patents in 1474, the earliest known law on this subject, was "to increase the honour of the inventor" and termed patents as a "means to a social end". Since then, there has been a constant change in the objectives of the law of patents. During the industrial revolution, there was a strong assumption that patents were a means of stimulating the process of industrialization. This belief remained more or less unchanged for the next one hundred years and was primarily responsible for the gradual weakening of the basic objectives of the law of patents i.e., to encourage inventive activity. This very belief, of course torn asunder from its historical context, was employed to convince the developing countries during the Uruguay Round negotiations to adhere to principles of a strict patent regime so as to achieve rapid economic and industrial development.

The second objective of the study concerns the evaluation of primary reasons and the necessity for the developing countries to join the mainstream of international patent system. One of the reasons for this stems from the hope that the patent system facilitates
the process of technology transfer. Justifiability of the patent system itself is defended on this ground. For instance, it is argued that the disclosure requirements as envisaged in the patent laws facilitate transfer of technology and enhance the utility of the state of the art. On the contrary, the creation of a hard patent regime, in the Agreement on TRIPs, is viewed as one component of a larger global strategy by developed countries to protect the technological assets of their enterprises and consequently increase their financial returns. So, the examination of the diverse objectives set by both developing and developed countries in the context of evolving completely new norms and standards relating to patents will constitute one of the crucial element of the study.

The third objective of the thesis has two main components. One, to examine and understand the conceptual elements such as novelty, inventiveness and industrial utility which constitute the basis of any patent legislation. Second, to study the feasibility of these elements in the light of emerging new and high technologies, namely biotechnology, genetic engineering, computer software and other new material applications.

While examining the scope and applicability of new and high technologies, the thesis seeks to specifically address the issues in the context of developments which have been taking place in India. This has been necessitated for the following reasons. Firstly, India has followed a definite policy framework in outlining and evolving its patent law. The adoption of IPA was preceded by extensive studies done by two important Committees. Secondly, IPA reflects major socio-economic policies pursued by India as
a developing country. For this reason, IPA has been considered as one of the model laws for the developing countries. Thirdly, and more significantly, there have been extensive debates within India on the implications of not only adopting new norms and standards for patents, but also on the possible harm inflicted upon the Indian industry, agriculture, environment as also to its goals of achieving self-reliance. Such an extensive debate at the level of the Indian public has so far not taken place in any other developing country.

And lastly, the thesis seeks to determine the limits placed on the States in implementing the provisions of the Agreement on TRIPs concerning patents within their own legal system and practice. In this regard, there are three areas which have been accorded primary focus. Firstly, to consider the overall policy approach towards the rights conferred in the TRIPs Agreement. This is also reflected in the proposals advanced by the major actors to the Trade Negotiating Committee (TNC) of the Uruguay Round negotiations. Secondly, to examine whether there is any shift of emphasis from the existing mode of protection which attempts to harmonize public interest and private gains. Lastly, to consider the implications arising from the interpretative techniques which may be employed in evaluating the principal provisions relating to patents in the TRIPs Agreements.

IV. Scope of the Study

The thesis, however, does not claim to examine all the aspects of law relating to patents. In fact, it is not possible to do so as the areas relating to law and practice of
patents have evolved rapidly and each of these areas may now call for separate research. In this sense, this thesis is a modest attempt to identify and locate some of the crucial issues relating to law of patents in its historical context. The scope of this study, accordingly, is primarily confined to the examination of the evolution of norms and standards relating to patents with particular reference to the issues affecting the developing countries.

Although international patent system consists of international conventions such as the Patent Cooperation Treaty and other regional conventions, the study seeks to limit its reference to the Paris Convention and its revision conferences. This has been necessitated by the fact that the basic principles which constitute the framework of the international patent system were incorporated for the first time in the Paris Convention in 1883. Subsequently, both developed and developing countries have utilized the forum of Paris Union to introduce changes in the law of patents at the international level.

While examining the factors which shape the GATT's negotiating agenda concerning IPRs, in particular the patents, the scope of this study is limited to identifying certain main issues which have a direct bearing on the developing countries, such as, trade policy issues and the impact of new and high technologies. However, while considering the substantive aspects of the law of patents, namely, novelty, inventiveness and industrial applicability, references have been made to the British, American and European case laws. With the available material on the case laws, references have also been made to China, Japan and other developing countries.
The term "Intellectual Property Rights" (IPRs) in this study, unless specified, refers to patents only. In certain instances this term is used in the broader sense to also include the following: Copyright and related rights, Trademarks, Geographical Indications, Industrial Designs, Layout-Designs of Integrated Circuits, Protection of Undisclosed Information and Control of Anti-Competitive Practices. Some of these rights are considered along with patents and the examination, particularly of copyrights, trademarks and undisclosed information is undertaken in the context of patents only.

Certain aspects relating to the criteria of patentability enter the discussions in more than one chapter. The historical evolution of these aspects constitute one major component and subsequently, these criteria also constitute along with other recent developments an important part of the discussion on the substantive aspects. Without being repetitive, these topics have been treated carefully in these chapters.

The chapter immediately following this begins with the various justifications of the patent system. The broad categories of justifications conceptually fall into desert based and utility based justifications. Further, this chapter seeks to find out whether justifications in favour of a strong patent regime could be supported with the perusal of varied concepts such as invention, innovation, disclosure, and transfer of technology. And it concludes that such justifications lack support considering the developing countries' existing priorities and expectations. It also points out that although patent
norms create a monopoly situation they have a specific social responsibility to promote and encourage the unhindered process of inventive activity.

Having considered these basic justifications, Chapter Three examines the law of Patents in its historical context. Accordingly, it seeks to outline the evolution of international patent system beginning from the earliest times. It also shows that imperial interests were dominant in shaping the conceptual framework of patent laws as evolved in the various revision conferences of the Paris Convention. There is also a gradual shift, as this Chapter seeks to outline, in the focus from the wider diffusion of inventive activity to the creation of strong monopolistic exclusive rights.

Chapter Four examines the proceedings of the various sessions of the Diplomatic Conference to revise the Paris Convention. This was the first significant effort to evolve a more equitable and viable international patent regime. This chapter also examines the approaches adopted by various groups of countries at the sessions of the Diplomatic Conference. The first half of the proceedings of this Conference was spent in resolving the procedural issues such as voting and the mode of adopting the final provisions. The latter part of the Conference, reflected wide divergencies, particularly concerning the provision relating to "non-exclusive non-voluntary licensing". As shown in this Chapter, in the course of negotiations, the stance of developed countries refuses to accommodate any compromises. Developing countries, on the other hand, are prepared to scale down the "Basic Proposals" so that the Conference could have achieved some success.
One of the primary reasons for the failure of the Diplomatic Conference can be attributed to the beginning of the Uruguay Round negotiations under the auspices of GATT. These negotiations, as noted in the fourth chapter, seek to "clarify and elaborate new rules and disciplines" concerning IPRs. This mandate, as argued by the developed countries, is shaped on account of the features of high technology which necessitate the creation of a strong international patent regime. Meanwhile, developing countries lead by India and Brazil, at the Uruguay Round negotiations resisted this mandate by providing an alternative negotiating mandate and they also argue that the elaboration of new rules and disciplines concerning IPRs should be undertaken in the WIPO fora. However, the bilateral coercive approach adopted by the US in determining the IPR standards brought about a significant shift in the nature of negotiations.

Evaluating these developments, this Chapter also seeks to consider in greater detail various proposals submitted to the TRIPs negotiations. This chapter analyses some of the implications flowing from the TRIPs provisions relating to "transitional arrangements" and the "exclusive marketing rights" (EMRs). While examining the provisions relating to EMRs, the chapter also makes a reference to the The Indian Patents (Amendment) Ordinance, 1994. By way of contrast, the Chapter demonstrates, albeit briefly, the salient stringent provisions relating to patents in the North American Free Trade Agreement (NAFTA).

Having considered the evolution of international patent system in its historical context, the fifth chapter seeks to consider the conceptual framework of the criteria of
patentability, namely, novelty, inventiveness and industrial applicability. With the evolution of new technology these criteria present new challenges calling forth new interpretations. In other words, as this chapter attempts to show these criteria are not pure legal concepts as their interpretative matrix are defined by such factors as technological development, innovation, skilled manpower and so on.

The reference in the Seventh Chapter is to the issue of definition and regulation of the patentability criteria vis-a-vis biotechnology and genetic engineering. The provision in the TRIPs Agreement that an effective sui generis system can be put in place to accord protection to plant varieties has also been examined. The latter part of the Chapter deals with the ongoing efforts in India to draft a legislation relating to plant varieties. It also outlines a critique of the proposed Indian legislation and also provides the viewpoints of experts in this field. This chapter also deals with the issue of patenting of seeds and genes.

Chapter Eight specifically deals with the issues of working the patents, its abuses and the available legal safeguards to control these abuses. Its focus is on the issues such as importation, lack of use, insufficient disclosures and abusive practices such as non-working and practices which can be termed anti-competitive. While dealing with these aspects, the chapter seeks to examine whether or not the provisions in the Agreement on TRIPs provide sufficient safeguards against such practices.

Chapter Nine examines the limits which are placed on the states by the provisions of TRIPS Agreement. It also examines as to whether these limits could be interpreted in
a favourable way as to accord sufficient space for the States to preserve their national interests.

The final chapter contains the conclusions of the study.