Chapter 1

INTRODUCTION

CHAPTER 1

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1.1: Introduction

Across tables, relevance of Intellectual Property Protection as a tool to incentivize innovation has been debated for as long as the concept of protection of Intellectual Property started gaining recognition. Further, it has been argued whether monopoly rights create a climate of secrecy which unduly hampers progress of science and technology.[1] For the progress of science and technology free flow of information is desirable. Which ecosystem will help facilitate this, is a matter of understanding. It has been understood that the deprivation of any incentive for a researcher encourages him to keep it secret rather than freely letting public know about it for the threat of it getting copied without any reaping recognition in return. Can creation of monopoly rights for specified time offer adequate incentive? Further, it is matter of interest to understand the right balance which is to be struck to ensure that the free flow of information, public interest, progress of science and technology, availability of useful innovations are all available by making these as the objectives of any piece of legislation. This chapter particularly focuses on three mostly used intellectual property rights, viz. Patents, copyrights and trade-marks to build on an understanding of their inclusion in the national regimes.

1.2: Theories Justifying the Grant of Intellectual Property Rights

There exist various theories behind intellectual property protection. Legal luminaries like Lyssander spooner (1855)[2] and Ayn Rand[3] have argued that a man has both natural and absolute rights for the ideas and the protection of Intellectual Property is a moral issue, respectively. Spooner argues "that a man has a natural and absolute right - and if natural and absolute, then necessarily a perpetual - right of property, in the ideas, of which he is the discoverer or creator; that his right of property, in ideas, is intrinsically the same as, and stands on identically the same grounds with, his right of property in material things; that no distinction, of principle, exists between the two cases". Rand argued in his book Capitalism: The unknown Ideal, "that the protection of Intellectual Property is essentially a moral issue. The belief is that the human mind itself is the source of wealth and survival and that all

[1]Keeping science open: the effects of intellectual property policy on the conduct of science, By the Royal Society, 2003: *"The evidence received during our study indicates that patenting rarely delays publication significantly, but that it can encourage a climate of secrecy that does limit the free flow of ideas and information that are vital for successful science".*

[2]*The Law of Intellectual Property, Part 1 Chapter 1 Section 9 – Lysander Spooner*

[3]*Rand, Ayn (1967) [1966].*Capitalism: The Unknown Ideal *(paperback 2nd ed.). New York: Signet.*

property at its base is Intellectual Property. To violate intellectual property is therefore no different morally than violating other property rights which compromises the very processes of survival and therefore constitutes an immoral act".

Of all the theories pertaining to protection of Intellectual Property, the Utilitarian theorists Bentham and Mill have argued that Intellectual Property protection works for greater good of all. Jeremy Bentham[4] stated: "That which one man has invented, all the world can imitate. Without the assistance of the laws, the inventor would almost always be driven out of the market by his rival, who finding himself, without any expense, in possession of a discovery which has costed the inventor much time and expense, would be able to deprive him of all his deserved advantages, by selling at a lower price". Mill argued that individual rights can be justified as long as they promote social good. Utilitarian theory over the period of time, with the decoding of genetic structure and development of digital technology has gained much interest. Its significance is based on its ability to perform tasks or satisfy the desires more effectively (for example a better mouse trap) for which society seeks to protect such works within governance regime[5]. The inventions/processes/machines protected under the patent system do not implicate personal interest like that seen in case of copyrights. Trademark law is also amenable to economic analysis since it is principally concerned with ensuring that consumers are not misled.[6] With regard to other utilitarian perspective of other rights granted under intellectual property, trade secret often protects utilitarian works.[7] Copyright law also manifests utilitarian framework so far society seeks production and diffusion of copyrighted work[8], which has been central to copyright law of United States.[9] This is evident from Congressional committee reporting of 1909 copyright Act.[10]

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[4]Jeremy Bentham (1839, p. 71)

[5]*Intellectual Property: General Theories, by Peter S. menell, 1999, page no. 2, Available at http://levine.sscnet.ucla.edu/archive/ittheory.pdf: The social value of utilitarian works lies principally if not exclusively in their ability to perform tasks (for example, a better mousetrap)or satisfy desires more effectively or at lower costs. It is logical, therefore, that society would seek to protect such works within a governance regime that itself is based upon utilitarian precepts. Furthermore, inventions – new processes, machines, manufactures, or compositions of matter – unlike artistic or literary expression do not generally implicate personal interests of the creator.*

[6]Economides,1988.

[7]MMLJ, 1997, pp. 34-36; Scheppele, 1988.

[8]Hadfield (1992), Goldstein (1995, ch. 5) and Plant (1934b).

[9]*Intellectual Property: General Theories, by Peter S. menell, 1999, page no. 2, Available at http://levine.sscnet.ucla.edu/archive/ittheory.pdf: "The utilitarian framework has been particularly central to the development of copyright law in the United States".*

[10](H.R. Rep. No. 2222, 60th Cong., 2nd Sess. 7, 1909. See also *Mazer v. Stein*, 347 U.S. 201, 219, 1954; MMLJ, 1997, pp. 326-328)*: The Congressional Committee reporting on the 1909 Copyright Act stated: 'The enactment of copyright legislation by Congress under the terms of the Constitution is not based upon any natural right that*

Similarly, Adam Smith[11], justified the need for limited monopolies to promote innovation and commerce who was otherwise generally critical of monopoly power as detrimental. Such endorsements have also been made by the analysis done by Demsetz and Coase (in 1960s) pointed out that strong property rights must be granted for intellectual creations.[12]

John Locke's "Two Treaties of Government" deals with labour based justification of property rights.[13] Though according to Locke, no man shall enjoy any property still he argued that the labor of a man's body, the work of his hands are his own.[14]

According to Kant and Hegel, if one's artistic expressions are synonymous with one's personality, then they are deserving of protection. Hegel explicitly wrote about Intellectual Property. He argued that "mental aptitude, erudition, artistic skill even things ecclesiastical, inventions and so forth become subject of contract, brought on to a parity through being brought and sold, with things recognized as things. It may be asked whether the artist, scholar, is from the legal point of view in possession of his art, erudition, ability to preach a sermon, sing a mass, that is whether such attainments are things"[15].

Socio planning theory, the lesser known of all the theories justifying the protection of Intellectual Property "is largely devoted to discussing ways to maintain a strong civic culture that benefits from a reasonably balanced social and institutional Intellectual Property regime"[16]. This theory lies in the proposition that "property rights should be shaped so as to help foster the achievement of a just and attractive culture"[17].

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the author has in his writings, ... but upon the ground that the welfare of the public will be served... by securing to authors for limited periods the exclusive rights to their writings'.

[11] Adam Smith, 1776, pp. 277-278.

[12] Demsetz (1969, 1970), applying insights from the property rights literature(Coase, 1960; Demsetz, 1967), argued that strong property rights for intellectual creations should be provided, with the market available to ensure efficient allocation of resources through Coasean bargaining. *Intellectual Property: General Theories, by Peter S. menell, 1999, page no. 5, Available at http://levine.sscnet.ucla.edu/archive/ittheory.pdf.*

[13] John Locke's, "Two Treaties of Government", December, 1689.

[14] (Whatsoever, then, he removes out of the stat that Nature hath provided and left it in, he hath mixed his labour with it and joined to it something that is his own and thereby makes it his property. It being by him removed from the common state Nature placed it in, it hath by this labour something annexed to it that excludes the common right of other men. For this 'labour' being the unquestionable property of the labourer, no man but he can have a right to what that is once joined to, at least where there is enough and as good left in common for others.") John Locke's, "Two Treaties of Government", December, 1689.

[15] Hegel, "Philosophy of right", 1822.

[16] Lior Zemer, "On the value of copyright theory", 2006.

[17] Fisher, "Property and contract on the internet", 1998.

Each theory justifying the grant of Intellectual Property protection assist in conceptualizing the grant of Intellectual Property rights on the basis of achievement of broad developmental goals. As Intellectual Property protection is territorial in nature, the next part of this chapter focuses on the genesis of such protection in the world. The study of historical chronology is important so as to understand the framework for bringing such kind of protection. During the early mercantilist periods, it is understood that the Intellectual Property has emerged as a means for nations to increase their power and wealth for manufacturing development and establishment of foreign trade monopolies.[18]

1.3: History of Intellectual Property Rights

The concept of Intellectual Property dates back to 500BC, when the Government of Greek state offered one year's patent for discovery of any new refinement in luxury.[19] However, the term Intellectual Property began to be used only in 19th century.[20]

The printing revolution in Venice is attributed to the grant of monopoly rights.[21] Five years of monopoly right was given to the German immigrant in Venice, Johannes of Speyer, who brought the invention of printing to Venice on 18th September 1469 and since then venetians quickly recognized the importance of new craft.[22] As soon as the rights to Speyer

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[18] *Intellectual Property: General Theories, by Peter S. menell, 1999, page no. :* Intellectual property rights emerged during the early mercantilist period as a means for nation-states to unify and increase their power and wealth through the development of manufactures and the establishment of foreign trading monopolies, *Available at http://levine.sscnet.ucla.edu/archive/ittheory.pdf:*

[19] Charles Anthon, A Classical Dictionary: Containing an Account of the Principal Proper Names Mentioned in Ancient Authors, and Intended to Elucidate All the Important Points Connected with the Geography, History, Biography, Mythology, and Fine Arts of the Greek and Romans. Together with an Account of Coins, Weights, and Measures, with Tabular Values of the Same 1273 (Harper & Brothers 1841).

[20] *Property as a common descriptor of the field probably traces to the foundation of the World Intellectual Property Organization (WIPO) by the United Nations." in Mark A. Lemley,* Property, Intellectual Property, and Free Riding, *Texas Law Review, 2005, Vol. 83:1031, page 1033, footnote 4*

[21] *ASV, Collegio, Notatorio, reg. XIX (1467-1473), fol. 55 verso. This document has been transcribed and published in several books; among others in RinaldoFulin, "Documenti per servireallastoriadellatipografiaveneziana",* Archivio Veneto *23 (1882): 84-212, 390-405; Carlo Castellani,* La stampa in Veneziadallasuaorigineallamorte di Aldo ManuzioSeniore, con appendice di documenti in parte inediti *(Trieste: Edizioni LINT, 1973), 69; and Horatio Fortini Brown,* The Venetian Printing Press 1469-1800: An Historical Study Based upon Documents for the Most Part Hitherto Unpublished*(London: John C. Nimmo, 1891), 6-7.*

[22] *http://copy.law.cam.ac.uk/cam/tools/request/showRecord.php?id=commentary_i_1469#_ednref2: "On 18 September 1469, a German inventor master Johannes of Speyer began printing books in Venice, and received a privilege to publish the letters of Tullio [Cicero], and Pliny", Marino Sanudo recorded in his* Vitedeidogi *It seems that the diligent Venetian diarist, leafing through the acts of the register of the Venetian Collegio, thought it important to bring to the attention of his readers the record of a five year monopoly awarded to a German immigrant from Mainz, Johannes of Spyer (d. 1469), for printing in Venice. This document is most famous as the first known record of a printing privilege granted by a European government. The Venetians may not have been the first to introduce printing into Italy but they were quick to recognise the importance of the new craft*

extinguished as a result of his death, the trade in the country in printing started to see success thus making Venice as the fastest growing publishing Industry in whole Europe.[23] Ever since 14th century, they have been granting monopoly rights to those immigrants who have been bringing new skills and techniques. This helped the country to attract new art. The term patent has been derived from the Latin patere (to be open) which refers to an open letter of privilege from the government to practice an art.[24] The first Patent Statute was enacted by Venetian Senate in 1474. The Venetian Statute stated that: "We have among us men of great genius, apt to invent and discover ingenious devices (...). Now, if provisions were made for the works and devices discovered by such persons, so that other who may see them could not build them and take the inventor's honor away, more men would then apply their genius, would discover, and would build devices of great utility to our commonwealth."[25]

In England the statute of Monopolies (patents), 1624 and Statute of Anne (Copyrights), 1710[26] established the concept of Intellectual Property. It was the invention of printing press in the fifteenth century and consequential publication of literary work in multiple copies that lead to the enactment of laws in England first prohibiting importation of foreign books in 1554, then granting seizure and destruction powers to the "stationer's company" over unauthorized copies and finally during the reign of Queen Anne the Copyright Act of 1710 granting "sole right and liberty of printing books" to authors and their assigns for a period of 14 years.[27]

According to Patterson and Lindberg, the Statute of Anne:

"... transformed the stationers' copyright - which had been used as a device of monopoly and an instrument of censorship - into a trade-regulation concept to promote learning and to

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[23]*Haebler speculates that even during the short period it was in effect it must have deterred some printers from moving to Venice. In 1470 about a dozen new printers opened shop in Rome and elsewhere in Italy, while only Nicolas Jenson and Christopher Valdarfer did so in Venice. Brown claims that the monopoly was never intended to be stringently binding but was more in the nature of a diploma of merit. pp. 52-3. Cf. Leonardas V. Gerulaitis,* Printing and Publishing in fifteenth-century Venice *(Chicago: American Library Association, 1976), 21 and 34.*

[24]MMLJ, 1997, p. 122.

[25]Kaufer E., *The Economics of the Patent System,* Fundamentals of Pure and Applied Economics 30, Harwood Academic Publishers, 1989.

[26]*Brad, Sherman; Lionel Bently (1999).The making of modern intellectual property law: the British experience, 1760–1911. Cambridge University Press.p. 207.ISBN 978-0-521-56363-5.*

[27]See Cornish W.R. Intellectual Property, 3rd ed. 1996, pp 297-299

Explanation: While it was easy for the state to control the thoughts by controlling the scribe but later this control was threatened with the invention of printing press. This Queen Marry created stationer's company in 1557 in England and gave all rights in terms of printing of information which could go for public access27. Soon, post expiration of such rights to Stationer's company, publisher's lobbied for an extension. Later in 1710, Statue of Anne of Parliament shifted the rights from publishers to authors which essentially freed their works from the state control.

curtail the monopoly of publishers ... The features of the Statute of Anne that justify the epithet of trade regulation included the limited term of copyright, the availability of copyright to anyone, and the price-control provisions. Copyright, rather than being perpetual, was now limited to a term of fourteen years, with a like renewal term being available only to the author (and only if the author were living at the end of the first term)"[28]. Copyrights are a set of exclusive rights granted by law to the creators and producers of forms of creative expressions such as literary, artistic, musical and cinematographic works. These rights bestow on the copyright owner the control over the use of his works like their reproduction and distribution for a limited duration. While concept of copyright is very ancient, the laws granting these rights are of comparatively recent origin. Their genesis can be traced to the chaotic market conditions in culture industries created by the advancement in technology following the Industrial Revolution. There was a felt need to have proper norms to regulate the new business opportunities in the creative art works.[29] Laws protecting copyright have been introduced as a response to the widespread commercial exploitation of literary works as a result of technological developments in printing methods.

In England, historically, it is understood that the patents were considered to be the royal grants by Queen Elizabeth I (1558–1603) for monopoly privileges obtained by an inventor for exclusive control over the production and sale of his mechanical or scientific invention.[30] Historically, patents have been granted to encourage inventions as is evident by some of the earliest known jurisprudence[31] such as:

a. In October 1845 Massachusetts Circuit Court ruling in the patent case Davoll et al. v. Brown[32], Justice Charles L. Woodbury delivered following ruling: "only in this way can we protect Intellectual Property, the labors of the mind, productions and interests are as much a man's own...as the wheat he cultivates, or the flocks he rears".
b. Further, the French law of 1791 in its section 1 stated that "All new discoveries are the property of the author; to assure the inventor the property and temporary

[28] *Siegrist, Hannes, The History and Current Problems of Intellectual Property (1600–2000), in: Axel Zerdick ... (eds.), E-merging Media. Communication and the Media Economy of the Future, Heidelberg 2004, p. 311–329*
[29] This is true of all intellectual property rights. In a recent book, Ruling the Waves: *Cycle of Discovery, Chaos, and Wealth from the Compass to the Internet*, Debora L Spar identifies the stages of a process from innovation to law. First comes the laboratory stage of a new invention, then the commercialisation when pirates follow the pioneer investors, third, a stage of creative anarchy where lack of rules leads to disputes and finally the stage of norm setting or enactment of laws.
[30] *Mossoff, A. 'Rethinking the Development of Patents: An Intellectual History, 1550–1800,' Hastings Law Journal, Vol. 52, p. 1255, 2001.*
[31] *"Property, Intellectual Property, and Free Riding", Mark A. Lemley,* Texas Law Review *2007.*
[32] *Woodb.& M. 53, 3 West.L.J.151, 7 F.Cas. 197, No. 3662, 2 Robb.Pat.Cas. 303, Merw.Pat.Inv. 414*

enjoyment of his discovery, there shall be delivered to him a patent for five, ten or fifteen years"[33].

c. There is evidence that this practice existed informally in Electoral Saxony, the Austrian Archduchy, England under Edward III and the Republic of the Seven United Netherlands, while France started to use this practice on a regular basis during the middle of the 16th century as a part of its mercantilist policy. Revolutionary France recognized the rights of inventors in 1791 and, outside of Europe, the U.S.A. enacted a patent law in 1790.

With regard to Trade Marks, it has been in existence for almost as long as trade itself. Once human economics progressed to the point where a merchant class specialized in making goods for others, the people who made and sold clothing or pottery began to "mark" their wares with a word or symbol to identify the marker. Such marks, often no more than the name of the maker, have been discovered on goods from China, India, Persia, Egypt, Rome, Greece and elsewhere, and date back as much as 4000 years.[34] Successful trademarks are valuable because of the information that they convey. The consumer sees the mark and knows what the mark represents: a consistent quality, a reputation for service, and any of the other things that when wrapped together is thought of as a business's goodwill.[35]

It was with the establishment of World Intellectual Property Organization (WIPO)[36] in 1967, that the term Intellectual Property started to see the day light in USA[37] which later became popular with the establishment of Bayh Dole Act in USA in 1980.[38] Intellectual property rights in USA are not considered to be the natural rights but rather as a policy tool to boost innovations with utilitarian foundation[39]. Monopoly rights were created with the US

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[33] *A Brief History of the Patent Law of the United States*

[34] William H. Browne, *A Treatise on the Law of Trade Marks* (1885), at P. 14.

[35] I r. Callmann, *Unfair competition, Trademarks and Monopolies* (1981) at P. 36.

[36] *The term IP was adopted by the administrative secretariats established by the Paris Convention (1883) and the Berne Convention (1886) which merged in 1893 and jointly formed United International Bureaux for the Protection of Intellectual Property. The organization subsequently relocated to Geneva in 1960 and led to the establishment of WIPO in 1967*

37property as a common descriptor of the field probably traces to the foundation of the World Intellectual Property Organization (WIPO) by the United Nations." in Mark A. Lemley, Property, Intellectual Property, and Free Riding, *Texas Law Review, 2005, Vol. 83:1031, page 1033, footnote 4*

[38] *Mark A. Lemley, "Property, Intellectual Property, and Free Riding" (Abstract); see Table 1: 4–5.*

[39] The United States Constitution expressly conditions thegrant of power to Congress to create patent and copyright laws upon autilitarian foundation: 'to Promote the Progress of Science and useful Arts'.*(For a discussion of the application of non-utilitarian theories topatent law, see Oddi, 1996, pp. 274-277, discussing reward-based and natural law theories; Becker, 1993, noting intuitive appeal of entitlement based arguments.)*

Constitution, Article 1, section 8, clause 8 with a preamble to promote science and useful arts.[40] It is said that in 19th Century in USA, patent system has helped in spurring innovations.[41]

1.4: History of Intellectual Property Rights in India

The first legislation in India relating to patents was Act VI of 1856. The objective of this legislation was to encourage inventions of new and useful manufactures and to induce inventors to disclose secret of their inventions. The Act was subsequently repealed by Act IX of 1857, since it had been enacted without the approval of the British Crown. Fresh legislation for granting exclusive privileges was introduced in 1859, as Act XV of 1859. The Act of 1859 was consolidated in 1872 to provide protection relating to designs. It was renamed as The Patents and Designs Protection Act under Act XIII of 1872. The Act of 1872 was further amended in 1883 (XVI of 1883), to introduce a provision to protect novelty of an invention, which prior to making application for their protection were disclosed in the Exhibition of India. Thereafter, the Indian Patents and Designs Act, 1911, (Act II of 1911) replaced all the previous Acts. This Act brought patent administration under the management of Controller of Patents for the first time. This Act was further amended in 1920, to enter into reciprocal arrangements with UK and other countries, for securing priority. In 1930, further amendments were made to incorporate, inter-alia, provisions relating to grant of secret patents, patent of addition, use of invention by Government, powers of the Controller to rectify register of patent and increase in the term of the patent from 14 years to 16 years. In 1945, an amendment was made to provide for filing of provisional specification and submission of complete specification within nine months. Another amendment was made in 1950 (Act XXXII of 1950) in relation to working of inventions and compulsory licence / revocation. Other provisions were related to endorsement of the patent with the words 'license of right' on an application by the Government, so that the Controller could grant compulsory licenses. These amendments were brought in the patent law after considering recommendations of Patent Enquiry Committee (1948-1950), headed by Dr. Bakshi Tek Chand. In 1952 (Act LXX of 1952), an amendment was made to provide compulsory license in relation to patents in respect of food and medicines, insecticides,

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[40] *Foundation for Economic Education, "IP hampers free market" by Stephan Kinsella, May 2011*

[41] *Richard T. De George, "14. Intellectual Property Rights," in The Oxford Handbook of Business Ethics, by George G. Brenkert and Tom L. Beauchamp, vol. 1, 1st ed. (Oxford, England: Oxford University Press, n.d.), 416.*

germicides or fungicides and a process for producing substance or any invention relating to surgical or curative devices. A new Act, viz., the Patents Act, 1970 was passed after in-depth consideration by Parliamentary Committee and extensive debate in both Houses of Parliament. This Act was passed after considering recommendations made by Ayyangar Committee. This Act repealed and replaced the 1911 Act, so far as the patents law was concerned. However, the 1911 Act continued to be applicable to designs. Ayyangar Committee on the aspect of why patent system is essential for a country noted that:

"The desire for economic reward is undoubtedly an important factor motivating inventions. The possibility of obtaining an exclusive right to exploit an invention for a given period gives the inventor an assurance that his efforts would be rewarded with financial return. Men who are motivated by the prospect of economic reward might normally not be expected to invent if they could not obtain patents, freeing them from competition, and thus opening the prospect of large financial returns which a grant of a patent might involve. A patent monopoly has much to offer by way of prospect of good profits whenever a useful invention is made and such a prospect would have a tendency to bring forth new ideas at an earlier date than would otherwise have occurred. In short the patent system tends to encourage and maintain a continuous flow of inventions. Invention breeds invention and thus the pace of inventive activity is accelerated. 20. As Michel points out— "* * * patents play the role of the pike in the carp pool; they prevent stagnation and stimulate progress. Industrialists are forced to forge ahead to improve their machines and processes for the further reason that each one fears that if he does nothing some other will do something and exclude him from the field for a considerable number of years. This result produced by the patent systems is sound because it requires, as nothing else would require that industry go forward; it gives primarily the true justification for patent protection."—(Michel on Principal National Patent Systems, Vol. I, page 21). New products and processes are created, industry encouraged to manufacture new and better products and an expansion of the industry based upon the invention takes place. Thus, employment, national wealth and a higher living standard are created".[42]

However, citing that India has failed in managing its patent system because the number of patents granted to foreigners far exceed those granted to Indian's, the Committee reported that:

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[42] http://spicyip.com/wp-content/uploads/2013/10/ayyangar_committee_report.pdf (Last accessed on 26 February, 2015).

"I entirely agree with the views of the Patents Enquiry Committee that "the Indian Patent system has failed in its main purpose, namely, to stimulate invention among Indians and to encourage the development and exploitation of new inventions for industrial purposes in the country so as to secure the benefits thereof to the largest section of the public".

In answering whether patent system in India should be continued, the Ayyangar Committee noted that:

"Having made this appraisal of the effect of the Patent system in India, the next question is whether the system should be continued. With all the handicaps which the system involves in its applications to under-developed countries, there are no alternative methods for achieving better results. At present there is no country in the world that does not adopt the patent system of rewarding inventors', 'whatever differences in detail there might be in the laws of the various countries due to local conditions or historical reasons. Switzerland which for long resisted the adoption of the Patent system adopted it in June 1888 and has continued it ever since. Holland adopted the system in 1817 but as a result of the free-trade ideas which prevailed in the middle of the 19th century the Law was repealed in 1869 and the country was without a patent system. In 1910, however, a Patent Law on nearly the same lines as that which prevailed in Germany was adopted. Though there has been some controversy as to whether the Dutch industry suffered a set-back as a result of the abrogation of the Patent Law in 1869, there is no dispute that the country has achieved a considerable technological advance since the introduction of the Patent system. Even in a country which has adopted a socialistic economic system such as the U.S.S.R. the law makes provision for the grant of patents in the same manner as in the rest of Europe."

Most of the provisions of the 1970 Act were brought into force on 20th April, 1972, with publication of the Patent Rules, 1972. This Act remained in force for about 24 years, without any change, till December 1994. An ordinance effecting certain changes in the Act was issued on 31st December, 1994, to satisfy the transitional period requirements of TRIPS Agreement of WTO which ceased to operate after six months. Subsequently, another ordinance on the exact lines of December ordinance of 1994 was issued in 1999. This ordinance was subsequently replaced by the Patents (Amendment) Act, 1999, that was brought into force retrospectively from 1st January, 1995. The amended Act provided for filing of applications for product patents in the areas of drugs, pharmaceuticals and agrochemicals, though such patents were not allowed under Patents Act, 1970. However, such applications for grant or rejection of patents were to be examined only after

31st December, 2004. Meanwhile, the applicants could be allowed Exclusive Marketing Rights (EMR) for 5 years, to sell or distribute these products in India, subject to fulfillment of certain conditions specified in the Patents (Amendment) Act, 1999.The second amendment to the 1970 Act was made through the Patents (Amendment) Act, 2002 (Act 38 0f 2002) after consideration and report by a Joint Parliamentary Committee. This Act came into force on the 20th May, 2003, with the introduction of new Patent Rules, 2003, by replacing the earlier Patent Rules, 1972. The third amendment to the Patents Act, 1970 was introduced through the Patents (Amendment) Ordinance, 2004, w.e.f. 1stJanuary, 2005. This Ordinance was later replaced by the Patents (Amendment) Act 2005 (Act 15 of 2005) on 4th April, 2005, which was brought into force w.e.f 1st January, 2005.

In India modern copyright law emerged consequent to spread of printing technology. It is true that while the history of printing of books in India goes back to 1557, that of copyright law is only little more than a hundred and fifty years old. This was because the early printing activities were mostly non-commercial and Christian missionary driven. But once commercial publishing picked up, need for a copyright law to protect the interests of authors and publishers were felt. This led to the enactment of the Indian Copyright Act of 1847 on 15 December 1847[43]. This Act made the English law applicable to the areas under the control of the British East India Company. Subsequently, when Britain enacted the Copyright Act, 1911, "the first British legislation to bring the various copyrights within a single text", it was considered appropriate to have a new legislation for India too. Thus, was promulgated the Indian Copyright Act of 1914[44] which was a slightly modified version of the British Copyright Act, 1911, adapting it to the requirements of India. This law remained in force till 1958 when the present Indian Copyright Act of 1957[45] had come into force. The vagaries and compulsions of history dragged India into the legal regime of Great Britain for about a hundred years. This had certain advantages so far as copyright protection was concerned. Great Britain had been one of the founder members of the Berne Convention[46]; its laws on copyright had kept abreast of the international treaties and state of technologies in this area. This naturally ensured that the Indian law was also on par with the same. Thus, at the time of its independence, India had a copyright law which was fully compatible with the international treaties on copyright and the technologies in the cultural industries at that time. It is not only

[43]Act XX of 1847. See Thairani Kala, *How Copyright Works in Practice*, Bombay, 1996, p 2.
[44]Act III of 1914
[45]Act XIV of 1957.
[46]See Stewart S M, *International Copyright and Neighbouring Rights*, 2nd ed, 1989, p100.

the compulsions of a sovereign state to have a law of its own, which is not merely an appendage or an adaptation of the law of another country, but also the felt need resulting from technological developments such as "new and advanced means of communications like broadcasting, lithography, etc.[47]", which made enactment of a new legislation in 1957 inevitable. This focus on the need for copyright law harmonizing itself with the state of technology has never shifted. Whenever need had arisen for suitably arming the law with provisions necessary for tackling new challenges posed by developments in the technological field, necessary amendments had been carried out in the Act. The influence of new technologies is visible in the amendments made in 1983[48] and 1994[49]. For example, the 1983 amendment in law inserted new section 3 and definitions in the Act to take care of broadcasting technology and reprographic technologies. Later in the year 2012, the Act is amended as Copyright (Amendment) Act, 2012.

The registration of trade mark in India is governed by the Trade Marks Act, 1999, which came into force on September 15, 2003. This Act has comprehensively revised the Trade and Merchandise Marks Act, 1958, taking into account the changing trading and commercial practices, increased globalization of trade and industry, with a view to encouraging investment flow and transfer of technology, to simplify and harmonize the trade mark management system, and to give effect to important judicial decisions over the last four decades.

Thus, history of intellectual property protection related laws in India is itself inundated with reasons for their inclusion into the national regime.

1.5: Impact of Intellectual Property Protection

As aforesaid, it is thus understood that Intellectual Property Rights help protect the creative work.[50] Creative work ranging from literary works to technological inventions, all are covered under the umbrella of Intellectual Property rights namely, copyrights, related rights,

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[47] Statement of Objects and Reasons of the Copyright Bill introduced in the Rajya Sabha on 1 October 1955.
[48] Act XXIII of 1983.
[49] Act XXXVIII of 1994.
[50] ("The term intellectual property refers to a category of intangible rights protecting commercially valuable products of human intellect comprising primarily trade mark, copyright and patent right, as also trade secret rights, publicity rights, moral rights and rights against unfair competition.") *ICAI v. Shaunak H. Satya,* (2011) 8 SCC 781.

trademarks, geographical indications, patents, industrial designs, plant breeders rights, trade secrets, integrated circuits layout design. There are two reasons why such laws are necessary. Firstly, these laws try to balance the creator's commercial rights in his creations and the right of the public in accessing those creations. Secondly, they aspire to promote creativity and innovation. Intellectual property is a state mandated monopoly which grants exclusive rights to the inventor for limited time in return of inventions being made public. According to classic economic theory, certain incentives are desired to provide incentive and public good is not considered to be a reward.

The Law related to protection of Intellectual Property has remained territorial in nature. Until 1995, the harmonization of law related to protection of Intellectual Property at international front was governed by voluntary conventions.[51] Since, post globalization, trade in goods and services across borders increased, the world order drew close towards drawing an international agreement. The outcome was the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), a product of the Uruguay Round (1986-94) of trade negotiations. TRIPS is the first comprehensive and global set of rules covering intellectual property rights protection. TRIPS highlighted the importance of protection of intellectual property. Article 7 of the Agreement states that "[T]he protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge in a manner conducive to social and economic welfare, and to a balance of rights and obligations".

Inclusion of new Intellectual Property rights, widening of subject matter of protection and standardization of national intellectual property related norms highlight the importance which intellectual property protection has started gaining in the recent past.

Park and Ginarte studied how intellectual property rights affect development and found no direct correlation between patent strength and growth, but there was a strong and positive impact of patents on physical investment and R&D spending, which in turn raised growth performance.[52] Chen and Puttitanun however show that stronger IPR protection has a positive

[51] See Generally, The Paris Convention, 1883 and the Berne Convention, 1886.
[52] Park, Walter G. and Juan Carlos Ginarte, 1997, "Intellectual Property Rights and Economic Growth," *Contemporary Economic Policy* 15, 51-61.

impact upon innovation, as measured by patent applications in developing countries.[53] Schneider examined the importance of IPR protection, high-tech imports and FDI on innovation and on per capita GDP growth and found that innovation responds positively to Intellectual Property rights protection. Schneider finds that while intellectual property rights have a positive impact on innovation in developed countries, the impact in developing countries is negative, and often significant.[54]

Development of patent rights responds to rising demands for protection, because countries with higher R&D intensities and human capital inputs have higher indexes.[55] A strong system of Intellectual Property protection has been seen as an impetus for attracting inward flows of technology and flourishing of local innovation and cultural industries. Evidence suggests that stronger system for Intellectual Property protection could increase economic growth and foster technical change, thereby improving development prospects.[56]

[53] Chen, Y. and T. Puttitanun, 2005. Intellectual property rights and innovation in developing countries. Journal of Development Economics, 78, 474-493.
[54] Schneider, P., 2005. International trade, economic growth and intellectual property rights: A panel data study of developed and developing countries. Journal of Development Economics, 78, 529-547.
[55] Ginarte, Juan Carlos and Walter G. Park, 1997, "Determinants of Patent Rights: A Cross-National Study," *Research Policy* 26, 283-301.
[56] Anja Breitwieser and Neil Foster, Intellectual Property Rights, Innovation and Technology Transfer: A Survey, The Vienna Institute for International Economic Studies, Working Paper no.88, 2012.

Table 3

Summary of research on IPRs and growth

Study	Sample and method	Dependent variable(s)	IPR index	Results
Gould and Gruben (1996)	95 countries; cross-section with data averaged over the period 1960-1988	Growth of real GDP per capita	Rapp and Rozek Index	IPR protection has a positive impact on growth, which is slightly stronger in more open economies
Thompson and Rushing (1996)	112 countries; cross-section with data averaged over the period 1970-1985	Growth of real GDP per capita	Rapp and Rozek Index	IPR protection has a positive impact on growth only in countries that have reached a certain initial level of GDP per capita
Thompson and Rushing (1999)	55 countries; Seemingly Unrelated Regression techniques on a cross-section of data over the period 1971-1990	Growth of real GDP per capita; Ratio of Total Factor Productivity (TFP)[54] in 1971 to that in 1990; the Rapp and Rozek Index of IPRs	Rapp and Rozek Index	IPR protection has a positive impact on TFP in relatively rich countries, which in turn impacts positively upon output growth
Park (1999)	60 countries; Seemingly Unrelated Regression techniques on a cross-section of data over the period 1960-1990	Growth of real GDP, Fraction of GDP invested in physical capital, fraction of GDP invested in human capital, fraction of GDP invested in R&D	Ginarte and Park Index	IPR protection has no direct impact on growth. IPR protection has an indirect positive impact on growth through physical capital investment and R&D in the most advanced countries
Falvey, Foster and Greenaway (2004)	80 countries; five-year averages over the period 1975-1994.	Growth of real GDP per capita	Ginarte and Park Index	Positive impact of IPR protection on growth in countries with low and high GDP per capita. No impact of IPR protection in middle-income countries

Intellectual Property rights could play a significant role in encouraging developmental change. Maskus and McDaniel considered how the Japanese patent system affected postwar Japanese technical progress, as measured by increases in total factor productivity and found that the Japanese patent system in place over the estimation period 1960-1993 evidently was designed to encourage incremental and adaptive innovation and diffusion of technical knowledge into the economy. It is pertinent to note that as Japan has become a global leader in technology creation, its patent system has shifted away from encouraging diffusion and more toward protecting fundamental technologies.[57]

Studies suggest that innovation through product development and entry of new firms is motivated in part by trademark protection, even in poor nations. A survey of trademark use in Lebanon provided evidence on this point. Lebanon has an extensive set of intellectual-

[57] Maskus, Keith E. and Christine McDaniel, 1999, "Impacts of the Japanese Patent System on Productivity Growth," *Japan and the World Economy*, vol. 11, 557-574.

property laws but they are weakly enforced. Firms in the apparel industry claimed to have a strong interest in designing apparel of high quality and style aimed at Middle Eastern markets. Such efforts have been frustrated by trademark infringement in Lebanon and in neighboring countries. This problem was yet larger in the food products sector, where legitimate firms suffered from rivals passing off goods under their trademarks. The problem has seriously hampered attempts to build markets for Lebanese foods in the Middle East and elsewhere. Related difficulties plagued innovative producers in the cosmetics, pharmaceuticals, and metal products sectors.[58] The survey carried by Maskus for Lebanon also suggested that weak system of copyright protection could hamper domestic cultural and technological development. According to survey carried out in China with respect to infringement of trade mark, it was found that infringement of trade mark had a deterrent effect on enterprise development and effectively prevented interregional marketing.[59]

Intellectual property rights also could stimulate acquisition and dissemination of new information. Patent claims are published and can be used by competing firms to develop further inventions. Knowledge formation is cumulative and as new inventions build on past practices the process of technical change could accelerate.[60] This learning process takes place in 10 to 12 months in the United States.[61]Technological progress is considered to be engine for economic growth.[62] Evidence supports the view that technological progress drives economic growth.[63] Technological progress can be either driven by trade or by innovation. As Kenneth Arrow puts it, the production of new products and processes generates new knowledge. New knowledge carries considerable economic value, but it has features that make it difficult to be handled. Intellectual property rights come as a means to stop misappropriation of knowledge. Dutta and Sharma examined whether intellectual property rights in India have increased innovation by firms. Using panel data on Indian firms from 1989 to 2005, they found strong evidence that Indian firms in more innovation-intensive industries increased their R&D expenditure after TRIPS. The estimated within-firm increase

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[58] Maskus, Keith E., 1997, "Intellectual Property Rights in Lebanon" International Trade Division, World Bank, manuscript.
[59] Maskus, Keith E., Sean M. Dougherty, and Andrew Mertha, "Intellectual Property Rights and Economic Development in China," manuscript prepared for the Southwest China Regional Conference on Intellectual Property Rights and Economic Development, Chongqing, September 1998.
[60] Scotchmer, Suzanne, 1991, "Standing on the Shoulders of Giants: Cumulative Research and the Patent Law," *Journal of Economic Perspectives*, vol. 5, 29-42.
[61] Mansfield, Edwin, 1985, "How Rapidly Does Industrial Technology Leak Out?" *Journal of Industrial Economics*, vol. 34, 217-223.
[62] Aghion, P. and P. Howitt (1997) Endogenous Growth Theory. Cambridge, MA: MIT Press.
[63] Aghion, P. and P. Howitt (2009) The Economics of Growth. Cambridge, MA: MIT Press.

in annual R&D spending after TRIPS was on average 20 percentage points higher in an industry with a one standard-deviation higher value of innovation intensity.[64]

Strong system of Intellectual Property protection is used by countries to encourage international trade in goods[65], foreign direct investment (FDI)[66,67], and licensing of technologies and trademarks to firms[68,69]. Intellectual property rights affect the volume of FDI by enabling foreign firms to compete effectively with indigenous firms.[70] Strength of system of intellectual property protection and the ability to enforce contracts definitely has important effects on decisions by multinational firms on where to invest and whether to transfer advanced technologies. The decisions among the different channels of technology transfer depend on the strength of intellectual property rights and ownership advantage. Smith finds that strong intellectual property rights give incentives to firms in developed countries to license their technologies to other firms in developing countries.[71]

It is evidently clear that intellectual property seeks to maximize social utility by providing inventors with incentive as a return for their time, investment and labour[72]. It is supposed that the grant of monopoly rights promotes pubic welfare by encouraging production, protection and promotion of knowledge.[73] In return of the grant of monopoly rights to the intellectual property holder, Society gets benefited by the goods as a result of its commercialization. Thus, intellectual property is seen as a bargain between the state and the right holder

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[64]Dutta, A. and S. Sharma (2008) 'Intellectual Property Rights in Developing Countries: Evidence from India', unpublished paper.

[65] Maskus, Keith E. and Mohan Penubarti, 1995, "How Trade-Related Are Intellectual Property Rights?" *Journal of International Economics*, vol. 39, 227-248.

[66] Mansfield, Edwin, 1994, *Intellectual Property Protection, Foreign Direct Investment, and Technology Transfer*, International Finance Corporation, Discussion Paper 19; See also, Mansfield, Edwin, 1995, *Intellectual Property Protection, Direct Investment and Technology Transfer: Germany, Japan, and the United States*, International Finance Corporation, Discussion Paper 27.

[67] Correa, C. M. (1995) "Intellectual property rights and foreign direct investment." International Journal of Technology Management 10(2/3): 173-199.

[68] Horstmann, Ignatius and James R. Markusen, 1987, "Licensing Versus Direct Investment: A Model of Internalization by the Multinational Enterprise," *Canadian Journal of Economics*, vol. 20, 464-481.

[69] Maskus, Keith E., 1998b, "The Role of Intellectual Property Rights in Promoting Foreign Direct Investment and Technology Transfer," *Duke Journal of Comparative and International Law*, vol. 9, 109-161.

[70] Smarzynska Javorcik, B. (2004) 'The Composition of Foreign Direct Investment and Protection of Intellectual Property Rights: Evidence from Transition Economies'. European Economic Review 48(1): 39–62.

[71] Smith, P.J. (2001) 'How Do Foreign Patent Rights Affect US Exports, Affiliate Sales and Licenses?' Journal of International Economics 55(2): 411–39.

[72]*Spinello, Richard A. (January 2007). "Intellectual property rights". Library Hi Tech 25 (1): 12–22. doi:10.1108/07378830710735821.*

[73]*Spinello, Richard A. (January 2007). "Intellectual property rights".* Library Hi Tech *25 (1): 12–22. doi:10.1108/07378830710735821.*

1.6. Research Problem

Today, the total number of filings has been increasing post India amended its Patent Law by bringing in product patent regime in year 2005 in order to be compliant with TRIPS. Statistics reveals that the rate of foreign filings has been steadily increasing while that of India's contribution for patent filing has been declining[74]. Today, the ration of Foreign Vs India filing remains at 80:20.

Table below shows the trend[75] of domestic patent filings which also reveals that the trend has not been impressive at all:

YEAR		APPLICATIONS		% growth
1999		2247		-
2000		2206		-1.86
2001		2179		-1.22
2002		2371		8.7
2003		2693		14.6
2004		3218		23.79
2005		3630		18.68
2006		4521		40.39
2007		5314		35.95
2008		5864		24.93
2009		7044		53.49

[74] Hindustan Times, Delhi, Tuesday 1st January 2013, page 15, "China patent office world's biggest, India at 7th Rank" India's contribution declining from 3.5% in 1995-2009 to 2.7% in 2009-2011

[75] The total Indian filings have been taken from ref 1 below and have taken total filings by foreign nationals from reference 2. The difference of both gave the total filings by Indians. This is available till year 2008 from the two references. For subsequent years the filings by domestic applicants has been taken from reference 3

Ref 1: The Impact of Patent Applications Filed on Sustainable Development of Selected Asian Countries by A.K. Saini1 and Surabhi Jain, *Submitted in May 2011; page no. 360, Table 1b Accepted in July 2011,* BIJIT - BVICAM's International Journal of Information Technology Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM), New Delhi, July – December, 2011; Vol. 3 No. 2; ISSN 0973 – 5658 available at http://www.bvicam.ac.in/bijit/downloads/pdf/issue6/06.pdf

Ref 2: http://codeformumbai.org/index.py?page=dataset&fname=Applications_For_Patents_Filed_In_India_From_1980-81_To_2006-07_By_Foreign_Countries.csv

Ref 3: http://ssrana.in/News/2013/10/Statistics%20of%20patent%20filing%20and%20grant%20in%20India.htm

2010		8,312		57.47
2011		8921		28.6
2012		9911		16.13
2013				

In view of what has been said, it is quite evident that the domestic IP filings are not good in India. However, to the contrary, US patenting by Indian inventors has gone up from a modest 16% between 1995 and 1999 to 67% between 2006 and 2010[76].

Various judicial pronouncements are indicative of the fact that mere workshop improvements do not stand the test of patentability as evident from the Supreme Court decision in Radhey Sham v. M/S Hindustan Metal Industries. The Supreme Court laid down the following criteria for accessing the inventive step:

"It is important that in order to be patentable an improvement on something known before or combination of different matters already known, should be more than a mere workshop improvement and must independently satisfy the test of "inventive step".

To be patentable the improvement or combination must produce a new result or a new article or a better or cheaper article than before [AIR 1982, Supreme Court 1444]. Further, in Gillette Industries Ltd. V. Yashwant Bros. AIR, 1938, Bom 347, it was held that *"mere simplicity was not necessarily an objection to the subject matter, though matters of ordinary skilled designing or mere workshop improvements were not inventions".*

The need was felt to carry out research with regard to whether India is following the path of being Knowledge driven economy by giving thrust on the developing innovative ecosystem. It was also felt that research is carried out to understand if the existing IP environment is such leading to low domestic filings. Further, research was carried out to understand whether there is a need to provide effective legislative route to the domestic inventors, who all may not be highly educated or backed by big money or laboratories but are relying on ill equipped or small workshops and prompted by locally available resources, which can ease out the burden of prosecution and legal cost besides umpteenth registration formalities and longer time in awarding the rights which is otherwise witnessed in the patent system.

Research also endeavors to look into the economic impact on the country as a result of existing IP environment.

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[76] Economic Times, Delhi, Monday 7th January 2013, page 4, "Patenting from India for Global, local markets"

1.7. Research Questions

The research has been done basis following research Questions:

A: Whether creation of a limited monopoly for useful innovations would limit the freedom of access to the technology by the public and consequentially erode the progress of science & technology?

B: Whether there exists International experience which has addressed protection of useful innovations under any monopoly rights and its consequential effect on Country's progress?

C: What ecosystem exists in India in term of innovations and whether this ecosystem calls for any monopolistic regime?

D. Whether there exists International experience in terms of best practices implemented to offer balanced monopolistic rights to help spur domestic innovations?

1.8. Objective of the Research

The researcher has identified following as the objective of research:

a. to identify the IP ecosystem in India especially with regard to legislative environment that can spur domestic innovations
b. to examine the working of Utility Model law in foreign countries
c. to undertake the study into how the Utility Model Law has evolved in these countries over a period of time and the key learning
d. to identify the impact of this law on the Country's GDP and the Industrial growth
e. to identify the impact of Utility model on technological development
f. to identify if the utility model law has led to any undue increase in litigation
g. to draft the suitable legislative framework for India

1.9. Hypothesis

Implementation of 2nd Tier patent protection in the form of Utility Innovation Act can promote domestic innovations

1.10: Chapterization

The thesis is divided into five chapters. The researcher in Chapter 2, has carried out sufficient literature exists with respect to the evolution of 2nd Tier Patent Protection in Japan, China, Germany and Australia. These countries have been the early movers in case of adopting 2nd Tier Patent protection and witnessed various amendments in the legislative route in order to

address the needs of emerging times. It was thus felt important to delve more deeply into the historical background of these countries and gain more insight into the impact of such legislation on country's growth besides gauging the overall impact factor. This chapter covers details regarding the filing status by residents and non-residents, legislative history, scope of protection, litigation trends etc. The deeper study into these countries is important in carving out an appropriate framework of proposed legislation for India. Further, this chapter has captured the substantive provisions of 56 countries. While the detailed analysis of four countries (Japan, China, Australia and Germany) has been done to gather best practices adopted and learn from their pitfalls, statistical analysis of substantive provisions of 56 countries has been done to gain insights into the substantive provisions.

The researcher in chapter 3 brings out the existing state of affairs in terms of various kinds of inventions (herein referred to as "innovations") emerging out of India which are though highly useful but cannot stand the test of higher patentability threshold enshrined under the standard Indian Patent System. The research has been done to understand how such Indian innovations are treated in terms of protection or rejections and its resultant effect on promotion of Science & Technology & Entrepreneurship. It introduces the concept of 2nd Tier patent protection and brings out the current status of its implementation by various countries which is known by different names such as Utility Model, Innovation patent, petty patents etc. Further, various parameters which are expected to facilitate India's growth in furthering research & innovations, have also been covered. The chapter introduces the concept of Utility Model Protection. The key objective of this chapter has also been to identify the issues which are being faced by the various stakeholders (such as small and medium enterprises, cottage industries, other local industries, innovators, researchers, students in small universities, farmers etc.), in adequately protecting their innovations under the standard Patent system. Further, various parameters which are expected to facilitate India's growth in furthering research & innovations, were also looked at. This chapter has brings out the need for having 2nd Tier patent protection to spur innovations and entrepreneurship in India. Impact of such legislation internationally on country's economic and technological growth has also been covered.

The researcher in chapter 4 has drawn international perspective which helped in gaining understanding of the best practices adopted that could be emulated by India while drafting the provisions of proposed Utility model law keeping in view its socio-economic needs

The researcher in chapter 5 has summarized the entire research I the form of recommendations and conclusion.

At the end of chapters, annexures have been included as follows:

Annexure 1: Covers the draft legislation on proposed 2nd Tier Patent Protection in India

Annexure 2: Analysis of grass root inventions has been done to understand the status of such patent applications in terms of their filings and grants

Annexure 3 and 3.1: Covers extensive review of Controller General's Decisions basis the decisions granted from 2009-2014 to evaluate the status of patent filings, grants and rejections to domestic innovators basis low inventive threshold

Annexure 4 to Annexure 6.4: covers the review and comparison of substantive provisions with respect to Utility Model law prevalent in more than 57 countries

Annexure 7: Covers examples of some Grass-root innovations emanating from India

Annexure 8, 9 and 10 covers survey of various law firms, Industry associations

Annexure 10: Covers examples of select innovations from electrical and Mechanical industry which have been surveyed to understand the impact of current patent regime of these innovations besides the economic impact on the country.

1.11. Research Methodology

The research is primarily non-doctrinal and analytical. Extensive literature survey has been done on legislations of more than 93 countries that have adopted 2nd Tier Patent Protection legislation besides undergoing through analysis of secondary data such as Periodicals, newsletters, agreements, research articles, Government publications, census, working papers, books and other relevant materials.

The researcher has carried out primary data collection by field study – direct interviews/Telephonic conversations with stakeholders/ Conferences/Sensitization programmes with stakeholders. Questionnaire has been annexed.