

# Study and Comparative Analysis of the Patenting System and Culture in Context of Educational Institutions in India

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**Abstract**—Emergence of India as economic power can be attributed to the sustained efforts in the field of capacity building, technological focus and innovation. Though these initiatives are being implemented in the best possible manner, they are unable to deliver the same impact as seen in other developing countries in the Asia Pacific region which accounted similar conditions as India a few decades earlier. This paper studies the present condition of patenting in India in comparison to other countries in Asia Pacific region. One of the possible reasons for this can be the prioritization of Intellectual property as a facilitating tool in Innovation and technological advances. Intellectual Property Rights has established itself as a key enabler in promoting, protecting and nurturing the technological and research initiatives which are mandatory for the economic growth.

**Keywords**—Intellectual Property, Patents, India, Comparative Analysis, University contribution

## I. INTRODUCTION

Through the ages of inventors, innovators, artists and authors have been working constantly to contribute to the society through means of their Intellectual creations i.e. technological inventions, artistic & literary works, scientific principles and methodologies. These intellectual properties were considered to be owned by the creators or investors of these Intellectual properties. Intellectual Property Rights give the owners of Intellectual property IP power to protect their creation and constructs rules on how the property can be utilized by others.

In this paper, the concept of Intellectual property especially patenting is considered and the trend of patenting is studied. The focus of the study is towards the contribution of educational institutions/universities in the Indian patenting scene. Similar studies in the Asia-Pacific are then compared to identify the key differences or shortcomings in the Indian patenting system which restricts universities from contributing in the Indian patenting trend. This is a part of the holistic work being carried out about instituting IP orientation in a technical Institution.

## II. LITERATURE REVIEW

In today's world, the industrial countries have identified and understood the importance of Intellectual property rights in facilitating technological and economic growth for the economies. The inclusion of IPR as part of the institutional Infrastructure that encourages private investments in Research and Development and other inventive and creative activities has been highly valued. [1]

The Role of Intellectual property rights (IPR) though defined in the TRIPS agreement varies significantly in the mannerism in which the IPR are considered. During the past decade itself this shift has been clearly observed in

the global scenario. The two major causes are change in the global economic trend and New Technology emergence. TRIPS aim to narrow the gaps in the way that IPRs are protected around the world, and to bring them under common international rules. It establishes minimum levels of protection that each WTO Member State must provide. The following rapid propagation of regional and bilateral free trade agreements include elements of IPR building on and raising minimum standards defined by TRIPS. These agreements indeed integrate TRIPS-plus norms, including undertakings by developing countries not to use specific TRIPS flexibilities. Developing countries are under increasing pressure to strengthen their national intellectual property (IP) regimes, in order to harmonize them with those of developed countries.

The movement towards strengthening IPR in the laws of developing countries was initiated by developed countries under the belief that this would generate additional profits leading to more research and development (R&D), and it would be necessary to fuel economic growth in those countries. However, such belief attracted many critics, particularly researchers, who stressed that this movement was initiated against developing countries, underscoring the absence of empirical evidence to justify the socio-economic benefits for developing countries from strengthening IPR [2]. Due to this conflict of understanding few countries like India, Bangladesh and Vietnam have not taken the initiatives to strengthen the IPR regime and exploit its true functionalities.

The importance of IPR can be contributed to its mechanisms to reward the researchers and inventors to continue producing better and more efficient products for consumers. The consumers are provided with trust and reassurance that the product or services which are being promised are genuine. It also discourages counterfeiting and piracy of the invention. Without the enforcement of IPR, large multibillion dollar firms, multinational companies and studios would not exist with IPR.

## III. PATENTING

Patents are legal titles granting the owner the exclusive right to make commercial use of inventions. To qualify for patent protection, inventions must be new, non-obvious, and commercially applicable. The novelty of the invention defines the contribution of the product or invention in the present knowledge body. By non-obviousness it means the invention/product must not be such that anyone with average knowledge deduce and reproduce the same product/technology.

The product to be patented must have some functionality which holds practical meaning and/or value to the customer. The term of protection is usually limited to 20

years, after which the invention moves into public domain. The patent system is one of the oldest and most traditional forms of IPR. Almost all manufacturing industries make use of the patent system to protect inventions from being copied by competing firms. Since the early 1980s, patents have also been granted for agricultural, biotechnology products and processes and also for certain aspects of computer software. [3]

As an adjunct to the patent system, some countries have introduced *utility models* (or petty patents). The novelty criteria for utility models are less stringent and are typically granted for small, incremental innovations. Their term of protection is far shorter than for “regular” invention patents. The concept of utility models is prevalent in China and not relevant to Indian context. [4]

#### IV. PATENTING IN INDIA

The patenting system is geographical divided into 4 offices i.e. Delhi, Chennai, Mumbai and the head office being the Kolkata.

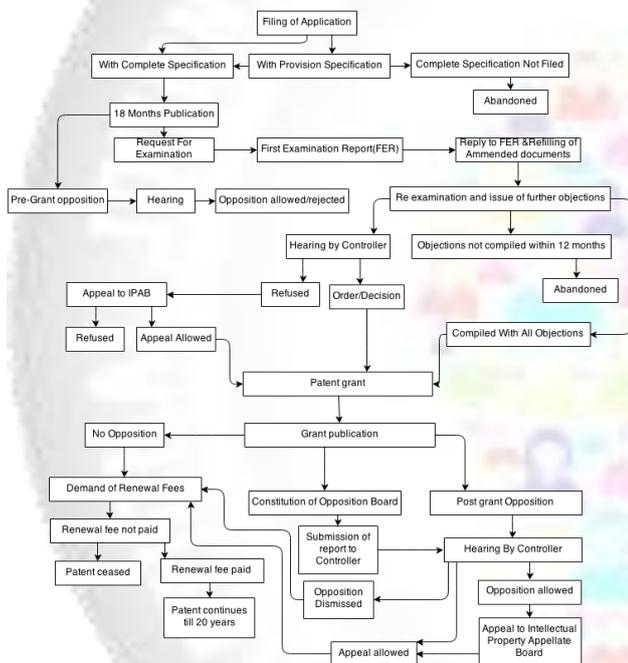


Fig.1: Concept map for Patent Filing (constructed based on information from: Intellectual Property Laws) [5]

The patent office administers the law concerning the protection of inventions in the country by way of grant of limited monopoly rights to the inventors, in accordance to The Patents Act 1970. The patent offices are responsible for documentation, storage and retrieval of all patent relevant data and provide extensive consultancy and application valuation. [5].

A detailed concept map describing the Patent filling and finalization model constructed is shown in figure 1.

##### A. Patent Filling

The number of applications for patents filled in 2012-2013 was 43674 while in 2011-12 the figure was 43197, which is an increase of about 1.10%. The total number of applications filled by Indians is 9911, which shows 11%

growth when compared to previous year. This making the percentage of Indian individual filling to be 22.69%.

The state wise break up of patent filing is shown in figure 2. We can see that Maharashtra is the highest contributor among the states. This state has IIT Bombay which files maximum number of patents yearly from their own research and also from promotion of IPR in the MSME sectors in the state of Maharashtra and Union Territory Goa.

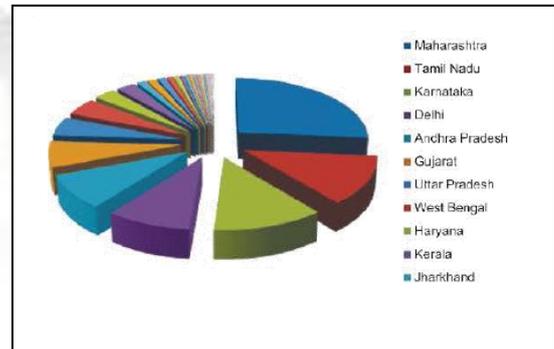


Fig.2: State wise breakup for IP filling 2012-2013 [6]

The role of educational institutes in facilitation of IP awareness has been well established [1] [7] [8]. Based on the analysis done as illustrated in table 1 the contribution of universities and educational institutes is miniscule in comparison to total number of patents filed yearly. Table 1 show there is increase in contribution from universities in 2012-2013 to previous years. It is only when there is a reinforcement of research activities in universities, research centers and cooperate labs that the true potential of IP can be enhanced.

TABLE: 1

Comparison of ranking of universities in number of patents Filling

Name of the Institute	12-13	11-12	10-11
Indian Institute Of Technology (Collective)	205	152	155
Amity University	140	114	-
Indian Institute of Science	31	14	38
Tamil Nadu Agricultural University	16	15	-
National Institute of Pharmacheutical Education and Research	15	21	11
M S Ramaiah School of Advanced studies	13	-	-
National Institute of Immunology	12	-	-
Parul Institute of Engineering and Technology	12	-	-
The Energy and resource institute	12	17	-
Central Power Research Institture	11	-	8
National Institute of Technology (Collectiove)	10	-	2

##### B. Patent Granting

The Total number of patents granted during the year was 4126 out of which 716 were granted to Indian applicants. The number of patents in force was 43920 as on 31st March 2013, out of which 8308 patents belonged to

Indians. Out of the total granted patents, 749 patents were granted on applications relating to Mechanical, 1289 to Chemicals, 344 to Drugs or Medicines, 228 to Electrical and 37 to Food.

C. Patenting Trend

The patenting trends based on the data, the 5 year trend for patenting in India are represented in Table 2.

TABLE 2

5 year trend for Patent in India

Year	2008-2009	2009-2010	2010-2011	2011-2012	2012-20013
Filled	36812	34287	39400	43197	43674
Examined	10296	6069	11208	11031	12268
Granted	16061	6166	7500	4381	4126
Dispose of request for examination	17136	11339	12851	8488	9027

(Source: various Annual Reports of Indian IP Office [9])

V. ASIA PACIFIC PATENT TREND

The countries in Asia Pacific region considered are Japan, China, Korea, Taiwan and India. The trends of patenting of these countries inclusive of companies, universities and various research institutes is shown in figure 3 and figure 4.

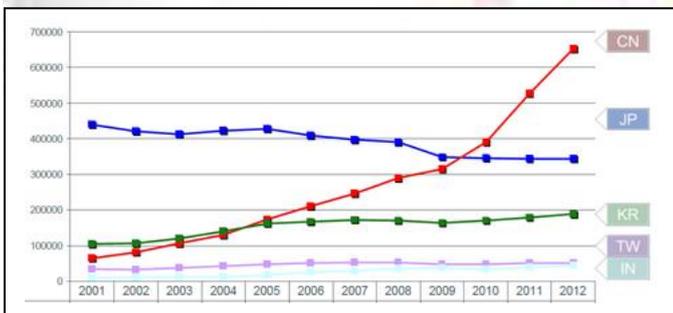


Fig.3:Evolution of Filing figures 2001-2012. (source:epo.org [9])

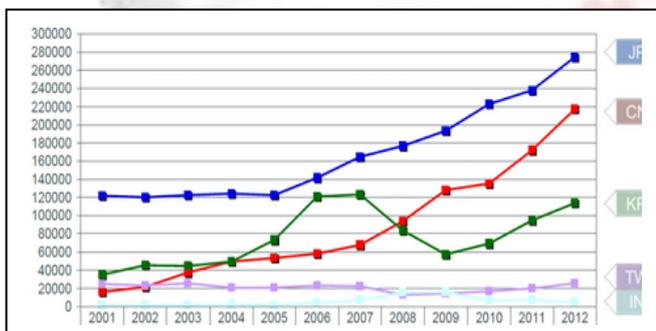


Fig.4: Evolution of grant 2001-2012 (source:epo.org [9])

Evolution of filing is shown in figure 3 and evolution of grant of patents is in figure 4. It is clearly visible from the two figures that though there are many inputs or patent filling happening in India, there is a huge gap in the Indian Scenario and the scenario in the Asia Pacific region. There are numerous shortcomings in the

Indian Patent system which requires modification and change to accelerate the pace for patent filling and grant.

VI. ISSUES AND RECOMENDATIONS WITH INDIAN PATENT SYSTEM

A. Slow speed of patent examination

The present methodology for patent filling and scheduling of the examination is a very slow and tedious process. The key concern in the present system is that there is no fixed limit for neither the examination process or in the objection stage. This wait could take from a few months to few decades.

Recommendation: The system implemented by the Korean Intellectual Property Office (KIPO) which is focused towards reducing the examination pendency time by outsourcing the prior image search to reduce the overall lead time in the patent examination process. [10]

The Japanese system to provide regional assistance in planning and designing the research and objectives can also be crucial in India to streamline the research and IP initiatives.

B. Law of Human resource for examination, consulting and outreach programs.

The present human resource available for examination and consultancy purposes is 201 whereas Japan IPO has 1713 [11] and Korean IPO has 726 dedicated Patent examiners.

Recommendation: Increase strength of human resource in Patent. The increased strength in manpower not just reduced the pendency period but can also be used as a leveraging mechanism for developed of systems and tool to improve the overall effectiveness and efficiency of the IPO programs.

C. Increase University awareness towards IP and University –Industry Interaction.

The utilization of universities and research institutes to transform Research and development initiatives into useful Intellectual property is of key importance to exploit the ongoing and sustained drive towards achieving excellence in both technological and economic domain.

The data from other countries suggest that about 10% of the total Patents and utility models developed are in collaboration with universities and technical research institutions. Indian R&D and universities had filled 953, which is about 2% of the total patent contribution.

VII. CONCLUSION

The data from other countries suggest that about 10% of the total Patents and utility models developed is in collaboration with MSME’s and educational institutions. The contribution of universities in India is found to be less than 2%, which can be greatly improved. Based on present study we have realized there is an immense need for change in the manner in which intellectual property is considered in the country. The awareness and outreach of intellectual property is a key factor which must be stressed upon. Incorporating the issues and recommendations found might create a positive impact

for IP development with universities and technical institutions as a key stakeholder.

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