Mapping Patents and Research Publications of Higher Education Institutes and National R&D Laboratories of India

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DIALOGUE
Science, Scientists, and Society

COMMENTARY

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This study will be of help to the academia and national R&D organizations to understand how major academic and R&D organizations of eminence in India have contributed towards the progress in various research and intellectual property rights (IPR) activities around the country.

Comments

The book is divided into eight chapters and one annexure. Of the eight chapters, last two chapters are dedicated to the progress in research publications and patents granted to higher education institutes and national R&D laboratories; and strengthening the patent ecosystem. The book is not intended to be a research thesis, but is designed to be a guide about the achievements of Indian higher education and research, and what needs to be done to improve further.

Chapter I on IPR regime narrates the 'history of IPR regime in India' based on the statistics of Indian Patent Office up to 2016. This chapter, divided into different sections, gives a brief

narrative about the fields of invention, number of patents filed and granted, and the areas in which they are granted with a brief overview of patents filed by Indian and foreign companies in various disciplines. Section (1.1) on Patent Facilitating Centre of TIFAC is well written. TIFAC was set up in 1988 by the Department of Science & Technology (DST) with the objective to foresee technology information in select areas of national importance. It also conducts training and awareness programs, including programs exclusively for women. TIFAC has a database of inventions in the form of Eskawa A, B, C which is available on a website free of cost. Section (1.2) deals with the role of National Research and Development Corporation (NRDC) on 'IP protection and Commercialization.' NRDC has a repository of 2500 technologies, many of which have been licensed to various start-ups in different parts of the country. They also conduct a few awareness workshops and have a portal for the databank. Section (1.3) details another 'technology support system' set up by the World Intellectual Property Organization (WIPO) in India. This organization lays special emphasis on awareness, effective enforcement and IP commercialization. A cell for IP Promotion and Management (CIPAM) under the Department of Industrial Policy & Promotion (DIPP), Ministry of Commerce & Industry (GoI) has been set up as a professional body for the implementation of the National IPR Policy 2016. It also deals with special efforts by the Panjab University to rope in WIPO for guidance in several areas. Section (1.4) on CIPAM-A, Cell for Promotion of IPR in the Department of Industrial Property Management (DIPP), Ministry of Commerce, GoI, primarily deals with the awareness and implementation of patent practices as per the international laws, with centres set up in Punjab, Chennai and Vishakhapatnam. Section (1.4) deals with a very well-written 'Overview of Utility of Models.' Utility models have *low novelty and non-obviousness*, with a short-term right of 6–10 years in several countries. However, in spite of the incremental advantages of the utility models, they are not considered by Indian regulators. The authors have provided a good overview of the use of utility models in several European countries. I think there should be some protection under Indian law to utility models.

Chapter II deals with the 'National IPR Policy 2016' (dipp.nic.in/policies-rule). It lays the future roadmap for IPRs in India. Indian government recognizes the potential of innovative energy by Indians for a better future of India. It is a vision document that creates inter-linkages, and synergizes between all sorts of IP, concerned statutes and agencies. It has a vision and a mission statement, with seven objectives beginning with the generation of IPs to Human Capital Development, and guidance to implement the National IP policy.

Chapter III WIPO was created in 1967 by the United Nations in Geneva for the promotion of uniform IP and practices throughout the world so that effective and uniform trade could be conducted on IP related products. It also conducts an economic analysis of how the government IP and innovative policies affect the economy of nations. WIPO administers this activity through 26 international treaties, which have been briefly described by the authors. The authors have also included a comparative table on the Summary of International Filing and WIPO's Databases. The Global Information Network *WIPOnet* is very useful to this effect.

Chapter IV This chapter shows 'Indian Web Portals' related to patents and technologies. The authors have collated a comparative account of 14 different web portals of use to Indian

innovators. Each web portal has its utility or limitations, because inventors do not like to disclose all details till the patent is granted, or till the technology is licensed. In this way, many a time the patents impede research activity.

Chapter V is on a composite analysis on research publications and patenting profiles of Indian higher education institutes and national R&D organizations (public and private; totalling to 904 organizations). The chapter has been worked out well. The methodology used for such a study, as mentioned on Page 63 of this document, is well worked out in the following manner:-

Publications (i) Retrieving the list of R&D laboratories from the official websites of respective ministries of GoI and the Directory for R&D Institutes, published by National Science and Technology Management Information System (NSTMIS) of DST, GoI (http://nstmisdst.org/PDF/directory- of-r-and-d-institutions-2015.pdf); (ii) Using the National Institutional Ranking Framework (NIRF), launched on 29th September 2015, which outlines a broad methodology to rank institutions across the country based on various parameters (https://www.nirfindia.org/Ranking); (iii) Using INI, a status conferred to a premier government education institute in India by an Act of Parliament. INI 'serves as a pivotal player in developing highly skilled personnel within the specified region of the country/state.' For this study the data was collected from (http://mhrd.gov.in/institutions-national-importance); (iv) A private university was considered when a university was established through a state/central act by a sponsoring body, for which the data was gathered from CAREERS 360 (https://university.careers360.com/colleges/ranking?page=3); (v) For publications, the research article publication data for HEIs and R&D labs was retrieved from Scopus owned by Elsevier (https://www.scopus.com/./span>). Scopus is the largest abstract and citation database of peer-reviewed literature, scientific research articles, books and conference proceedings. For this study, the authors considered only research article publications;

Patents The raw data for patents (published and granted) of INIs was procured from a well-reputed private firm, Talwar & Talwar (TT) Consultants (http://ttconsultants.com/xlpat-patentsearch-tool.php) located in Mohali, Punjab, India. Search tools used for extracting the relevant data were: (i) XLPAT owned by TT Consultants (http://ttconsultants.com/xlpat-patent-searchtool. php); (ii) InPASS of Govt. of India (http://ipindiaservices.gov.in/publicsearch); (iii) Orbit owned by Questel (https://www.questel.com/) (iv) Dervent Innovation owned by Clarivate Analytics (https://clarivate.com/products/derwent-innovation/./span>).

It is encouraging to note that only patents granted have been considered in the study. This study should have incorporated a brief about *Prior Art Search methodology* and the organizations as to where they are conducted for the benefit of users. Also, not much information has been given about publications from fisheries and naval research organizations.

Chapter VI Recommendations about strengthening the patent regime are well-collated (research should be for human good), but it is not always possible to develop products

instantaneously. One needs a much bigger budget than what has been pointed out in the document.

Lastly, the remaining three chapters, including an annexure, provide the details of the classified patents based on international classification; and the recommendations to strengthen the patent regime in India. These are compiled well and provided with future direction. The compilation of this document with the support of DST, GOI, which has been acknowledged, is bound to pave the way for future updates from time to time for the benefit of researchers in the country and provide additional inputs in areas uncovered here, encouraging the scientists and organizations to proactively participate in the process of protecting the intellectual property generated within the nation.