From polarization to convergence: need to mend the broken patent system

*Mary Mathew**

For more than two hundred years, the world has discussed the issue of whether to continue the process of patenting or whether to do away with it. Developed countries remain polarized for various reasons but nevertheless the pro patent regime continued. The result was a huge volume of patents. The present article explains the implications of excessive volume of patents and conditions under which prior art search fails. This article highlights the importance and necessity of standardization efforts so as to bring about convergence of views on patenting.

Keywords: Patents, patenting ideology, patenting practices, patent prosecution highway, prior art search.

MANY things have changed since monarchs initiated a protection system for inventors, six centuries ago in Europe. The protection system has now grown into the current formal system, namely the 'patent system'. With the growth of the system, patent-worthy inventions grew in numbers voluminously. It is difficult to say whether the formal system is the reason for the increase in patent numbers, or whether it is just that the world has become more inventive. As early as 1791, the US Patents and Trademarks Office (USPTO) recorded only 33 awarded utility patents. Between 1891 and 1991, the same office recorded an increase from 22,310 awarded utility patents to 96,511. Much later by 2010, the USPTO alone recorded about 219,614 awarded utility patents[1]. Unfortunately, these numbers have implications on the management of the patent system from various perspectives. One extreme view is to stop the patent system completely. Writers find themselves in combat arguing with locked horns, about why it should stop or why it should continue[2–4]. Interestingly, the significant actors in combat are from the developed countries. The developing countries remain observers trying to make sense of the situation. This article traces the reasons why the developed countries remain polarized about the patent system over the last 150 years. Critics of the system, or writers who are against the patent system, appear to spend more time articulating reasons why the system should be stopped, rather than suggesting ways of improving the currently complex system. Perspectives from history are meant to teach and impart insight. However, at times, learning ceases to take place and insight remains elusive, failing to impart progression. When learning does not happen, and thoughts are cyclic, lack of clarity results in a repetitive polarized ideology. It is regressive if the world cannot find a way to come out of this confused state and move on in a unified direction. This regressive state of oscillation is not without reason, and some of these are elaborated with the hope to provide direction. The role and position that a developing country like India can take given the current status of patent systems is also discussed.

Early history

Since 1474, when the Republic of Venice initiated a protection promise to inventors, many European monarchs felt the need to formalize such a protection in the regions under their control. This protection gave inventors a claim over their intellectual efforts. Examples of 'intellectual efforts' are the know-how to make barges that carry goods through waterways, and to stain glass used for the windows of churches. Protection was given so as to dissuade others from copying these technologies without due acknowledgement to the original inventors. If businessmen had a need to copy and make use of such intellectual efforts, they did so with the permission of the inventor and with a fee. The fee depended on how popular/useful the know-how was, and how well the inventor negotiated the fee with the businessmen who wanted the technology. The monarchs, it appears, initiated such a protection with the good intention of recognizing intellectual activities of citizens within a geographic boundary. Protection practice continued to spread to many colonies. German princes promoted it actively in Germany. By 1603, Britain laid out the Statute of Monopolies for inventors, Massachusetts followed suit in 1641, and next in line was South Carolina in 1661. However, since the protection was practised within a monarch's 'boundary' and not beyond, polarized views about the protection began to emerge. Problems started in Europe, when one kingdom began to import 'protected' goods of another

Mary Mathew is in the Department of Management Studies, Indian Institute of Science, Bangalore 560 012, India.
*e-mail: mmathew@mgmt.iisc.ernet.in

kingdom. Trade between and amongst kingdoms across boundaries hastened the need to have a unified patent system. The German Zollverein agreement called for this in 1842, where only patented goods were allowed to be traded. The difficulty of bringing about a unified protection system amongst the German states gave rise to the anti-patent movement by 1842. The varied acceptance of protection practice made it difficult for smooth trade. Even as developed countries evolved their practice over the last 150 years, they oscillated between polarized schools of thought that were for and against patent practice. At times, the abolitionists gained force and other times the pro-patents groups sustained their ground.

Starting from 1851, British Parliamentary committees and royal commissions investigated patent systems. In his paper, 'An economic review of the patent system' (1958), economist Fritz Machlup mentions: 'Some of the testimony (from these investigation committees in 1851) was so damaging to the repute of the patent system that leading statesmen urged its abolition. A patent reform bill providing for stricter examination of applications, reduction of the term of protection to 7 years and compulsory licensing of all patents was passed by the House of Lords'. By 1863, economists in Switzerland thought patents were 'pernicious and indefensible', and hence, refused to have a patent legislation. In 1869 The Netherlands was convinced that a good law for patenting was impossible to have. Machlup[5] observed that, strangely, soon after, 'all of a sudden the tide turned', and 'the anti patent movement collapsed rather suddenly … following many reasons including the great depression, rise of protectionism, rise of nationalism, willingness of advocates to compromise, …and the acceptance of compulsory licensing …where all patentees had to license to others the use of their invention at a reasonable compensation…'.

Recent times

As time passed, pro-patent behaviour continued and inventors became aware of filing patents, as it was made a mandatory procedure. The necessity of intellectual property rights was discussed and debated; nevertheless, the practice continued to exist. In the last 10 years, the same refrain of 'to stop or not to stop the patent system', is being voiced once again. The reason now is not about cross border trade, but that some authors are coming out with the belief that intellectual property is bad for innovation. Boldrin and Levine[2] articulate many reasons why intellectual property practice must be stopped. They attempt to state that strengthening patent protection will not enhance innovations. They are of the view that the badly broken intellectual property system of today's world needs deregulation. They mention that deregulation is an intermediate position between abolition and the current system of intellectual property practice, although they prefer it fully shut down. They prefer keeping government control out, and retaining a system of private contracts. They use the popular real-estate metaphor to advocate that patents need outright sales and not rental styles of control as in licensing. Boldrin articulates the definition of protection, as he sees it, with the analogy of a cup of coffee. He says 'If I produce a cup of coffee, I have the right to choose whether or not to sell it to you or drink it myself. But my property right, is not an automatic right both, to sell you the cup of coffee, and to tell you how to drink it', implying that inventors in an intellectual property regime have more control than they should. Such writing is receiving the support of Nobel laureates, and should be discussed and debated at WIPO and WTO levels. Social scientist and Nobel laureate Eric Stark Maskin (Institute for Advanced Study at Princeton), writes: 'For centuries, intellectual property rights (IPR) have been viewed as essential to innovation. Now Boldrin and Levine, two top-flight economists, propose that the entire IPR system be scrapped. Their arguments will generate controversy but deserve serious examination.'

Even today, many who have tried to address the question of whether 'to keep or not to keep' the patent system, take refuge in the words of Machlup[5], 'If one does not know whether a system "as a whole" (in contrast to certain features of it) is good or bad, the safest "policy conclusion" is to "muddle through" – either with it, if one has long lived with it, or without it, if one has lived without it. If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it. This last statement refers to a country such as the United States of America – not to a small country and not a predominantly non industrial country, where a different weight of argument might well suggest another conclusion.'

Since the 'for intellectual property' ideology still lives on despite the size of many countries, their varied industrialization intensity, and that it is clearly difficult to abolish it given the way the world is entrenched in its practice, there is however a need to modify the current system that is best described as chaotic.

The volumes of patents

The volumes of patents generated all over the world, were mainly from the developed countries. The only developing country close in the race with the developed countries in recent times is China. The Patent Technology Monitoring Team at USPTO reports that the US origin utility patent applications rose from 66,715 in the year 1963 to 231,588 and 224,912 in 2008 and 2009 respectively. Foreign origin utility patent applications filed in

USA increased from 19,154 in 1963 to 224,733 and 231,194 in 2008 and 2009 respectively[6]. According to the English version of the Chinese Patent Office website (SIPO English), China on an average filed approximately 10,193 domestic 'invention' applications per month in 2006 and 24,420 in 2010 (ref. 7). There is enough evidence that the volumes of patent filings are growing. Four factors can be seen fueling them; these are increased R&D investments, increased corporate support and competition, the operations of the Patent Office, and the role of trainers, lawyers and consultants that help with writing patent specifications. The first one refers to the amount spent on R&D, implying that more the R&D investments, more the number of patents obtained. The National Center for Scientific and Engineering Statistics at the National Science Foundation, USA, reports that in 1953 universities and colleges in USA received USD 255 million in R&D investments. This consisted of two main investments: USD 110 million for basic R&D and USD 145 million for applied R&D. The industry contribution was about USD 19 million in the same year. Much later in 2006, R&D investments in universities and colleges were about USD 47,760 million. This consisted of two main investments: USD 36,044 million for basic R&D and USD 11,717 million for applied R&D. The industry contribution was about USD 2,428 million in the same year[8]. The second factor is the corporate role, motivated by the view that patents provide leadership and power in global markets. Markets learnt to react to patents, and stock market prices were seen positively influenced by patent filing disclosures. Reward systems were instituted in corporate companies to socially recognize patent holders in 'halls of fame'. These rewards were with or without financial incentives. Over decades, this stamped in a patent culture amongst corporate companies. It was seen mainly in the developed countries, paranoid about their market leadership. Yet another reason for the increase in numbers, other than R&D and enhanced patent filing cultures in corporate companies was the art of comprehending patent office operations. Third, the ease of filing, depended on how well the Patent Office could be influenced about the invention. Frank Prager[9] in his paper 'Standards of patentable invention' describes Justices Douglas and Black as stating that 'the Patent Office (USA) uses too low a standard of patentable invention, thereby aiding and abetting the creation of harmful and illegal monopolies'. They also said that the Patent Office was 'spawning incredible patents' to mean that standards were less exacting. He adds that the judges and patent examiners of USA disagree on what the meaning of 'invention' is. Whilst this 'meaning' may be later settled in a court, nevertheless, it is the patent examiner who first makes the decision of whether to award a patent. To cope with the first hurdle of passing a patent document through a patent examiner, professionals schooled in the art, trained inventors in skills one needed to write a patent specification. This ensured its success in the Patent Office (and to an extent in the market place). Whether it is in the writing of the claims, their breadth or narrowness, or the description of prior art, this writing style became an agenda of trainers training lawyers and inventors to write winning patent specifications. This accelerated the number of patents.

Today, the volumes of patents that have been filed have created practical problems that need attention and correction. While on the one hand, these volumes may be an index of how inventive the world is, on the other, such volumes can also become dysfunctional denying comprehension of the levels of inventiveness, and it appears that they have. If interventions are not made to change the way the patent systems are now being managed, the polarization is going to get louder. The practical problems are elaborated below.

Implications of the volumes

First, it requires information technology database designers to design and manage such patent databases. A hundred years ago, when the number of awarded patents were lower, patent information was circulated for other inventors to know what was happening in various science and engineering areas. Naomi Lamoreaux and Kenneth Sokoloff[10] in their paper titled 'Market trade in patents and the rise of a class of specialized inventors in the 19th C United States', wrote that during the 1840s, dissemination of knowledge on new patents and developments in technology was spread to public through national patent agencies. These agencies published periodicals that listed patents. The *Scientific American* was one such periodical that was initiated to disseminate information on emerging patents to help inventors know what was out there. Today, patent data statistics is not easy to access and compute.

Prior art analysis, among many things, refers to the activity of searching the patent database of one or more countries. Such a search will help in the following objectives: the hope of understanding if one's patent is old or new, whether a specific technical area is crowded with patents, what competitors have filed in which country, how R&D objectives must be tweaked to avoid infringement and future litigation, whether a technical area is dying out (decline in the number of patents), where the key inventors reside, etc. There are two types of individuals who will be interested in prior art. They are the inventor or R&D scientist/engineer (assisted by an attorney), and the patent examiner (who has to verify if the invention at hand is without prior art in order to classify it as being new). The attorney will engage in a patent prior art search also to verify litigation potential. The patent volumes pose a prior art search challenge to R&D and Patent Office efficiency. Searching for them, and gleaning meaning out of the search is a complex, labour-intensive task because the patent volumes are now so large.

Country-wise searches that are free are limited. These free databases require intense and tedious data re-entry, data cleaning and analysis for meaning to be obtained out of them. The privately existing cross-country databases are closely guarded, proprietary and highly priced. In short, the volume of patents is difficult to comprehend, and easily available only to large corporations who have the budget for prior art analysis tools, processed search databases and their licenses.

The PCT search database is aimed at reducing this problem. However, for those who have practised such searches, it is easy to understand that a true prior art search consists of both patent databases and non-patent databases. Non-patent prior art databases are journal/conference articles, reports, theses, presentations, websites and white papers. Some of these can be Googled for free, whereas others need paid licenses. Accessing this entire pool of literature on a science or technology area opens out a Pandora's box. Enormous qualitative data on a given science or technology area must be understood and distilled for meaning, business implications and trends. Thus, an inventor who needs to accomplish a search for prior art on a 'sensor-based rat trap' looks for prior patent data in USPTO, EPO and JPO, and then looks into journals, reports and white papers. Fortunately, the sensor-based rat trap problem may be less important than will be a prior art search for a neuro-chemical drug that does not have side effects on a child, like making her eat too much, or a drug for the treatment of glucagon inefficiency, or a near-field communications (NFC)-based solution for mobile-based electronic payments, or a chair that is designed to assist geriatric patients to get off it, or alternative solutions to a bionic eye that makes it affordable to rural India, or drugs for life-threatening epidemics, or a method of braking on a slippery surface in automobiles, or material that stops a migraine when applied to the forehead, or a medical device that detects onset of a heart attack well before it occurs. Prior art searches on such topics is a complicated task. A scientist has to actually read and comprehend all patent documents (once they are found) and their supporting/related literature (something a robot can help, but only up to a certain point). When the patent numbers get unwieldy and run in thousands, prior art analysis becomes a challenge, and thus is often avoided as an R&D task in developing countries. Sophisticated data search tools that are intelligent can help up to a point, after which, only trained manpower can do the job. Patent landscaping tools that are easy to use, flexible and freely available are hard to come by. Currently, a class-wise or keyword search fails to bring out all relevant patents from these databases.

When prior art searches fail

There are several reasons for failures in prior art search. These are: differences in the definition of patents across trading countries, varying nature of science/engineering, the geographic boundedness of the patent, and the difficulty in understanding the value of the patent. Leading countries follow moderately varying laws in their definition of a patent. Patent examiners vary in competency and training across countries. Different languages of countries make translation a nightmare and it is said that the translation of a single claim into Japanese can cost up to USD 100. With patent definition variations, translation issues and variations in descriptions of the same technology across countries (semantics), the patent data worldwide cannot be easily understood through prior art searches. Hence, wise estimates of technology trends and R&D investments will always remain elusive for those who try to comprehend it. In other words, prior art analysis is an activity of great importance for countries that are followers compared to countries who are leaders. While leaders need to know what other countries have filed in their area, followers have a tougher job understanding everything that exists about that given technical area.

Science, engineering and technology vary in terms of their capability to productize. Scientific outcomes are insightful; however, they bear a high risk when it comes to applicability. Engineers need to work on these outcomes and risks to bring out a technology that is marketable. Further, science, engineering and technology of pharmacology are different from that of telecommunications, or software that runs a bank. This is one of the reasons for a lack of clarity about a reference point regarding what an invention is. The definition of inventions in software varies from that of inventions leading to a drug. Mention of *sui generis* laws was made on many occasions, but apparently not much progress has been made in this direction. The exceptions are possibly in the definitions and process of protection, in case of industrial designs, computer programs, integrated circuits, plants, genes, data, etc. Further, while the difference between a discovery and invention is clear to most in the intellectual property field, some developed countries prefer to engage in patenting discoveries such as plants, genes, DNA, molecules, etc. whereas other developed countries do not patent these. It also gets complicated when the discovery is modified or engineered in the laboratory, and then called a patentable invention. There are a large number of modified discoveries patented in the developed countries. Public choice theorists Craig Allen Nard and Andrew Morriss[11] articulate an interesting point in their paper 'Constitutionalizing patents: From Venice to Philadelphia'. They state that 'there exists a set of innovations for which allowing the grant of monopoly rights produces a net increase in a society's wealth. The size of this set increases as the cost to the society of the monopoly granted decreases. Granting monopoly rights for things and processes outside this set produces a net decrease in wealth for society as a whole'. It is clear that some science, engineering and technology areas must be patented and this should not be so otherwise.

Since its inception, the Patent Act was limited to the geography of an inventor. This created a sense of regional boundedness when a patent examiner looked at newness and prior art in a Patent Office. Although there is no statistics to prove it, it is obvious that inventors will file patents that are similar in their respective countries. This will lead to a situation where similar patents are filed in multiple countries by multiple inventors. This is inevitable. Consider this scenario: a patent examiner of a developed country *A*, say USA, has not much of an idea if another developed country *B*, say Japan, has a patent already filed for the same technology, unless the patent database of the country *B* is analysed for prior art. Novelty of a patent is defined within the boundaries of country *A*, and not the world (although in actuality it should be the world). This gives rise to a mountainous volume of duplicated patents within developed countries *A* and *B*. The duplication does not always mean verbatim/identical patents; however, it refers to patents describing numerous ways and almost similar ways to solve the same problem at hand.

Developed countries are seeing the need to get returns from patents filed rather than just use them for defensive purposes. In the recent decades it is being noticed that their patents are sold out, licensed exclusively or non-exclusively, with or without royalty, donated, cross-licensed, put into equity or auctioned. These patents are traded as singleton patents or as patent portfolios. Commercialization methodologies have evolved in developed countries, but no clarity has emerged on models on how a patent must be priced. Today, the cost of a patent involves R&D costs, prior art search analysis costs, patent office costs, translation costs, lawyer's fees, maintenance costs, proposed litigation budgets and marketing costs. The cost-based model of pricing, commonly used in product pricing, is hardly applicable to patents. Patent pricing adopted by the developed countries is based on ad hoc approaches. Not knowing how to price a patent puts financial planning in disarray. Finance and accounting standards for patenting is a field that is discouraged in corporate companies that prefer to avoid royalty accounting through the years, especially in distributed global R&D contexts. It all depends on the philosophy of the top management and consultation of accounting firms in the case of corporations.

Developing countries

Looking at the above challenges, the position of the developing countries in the global intellectual property management arena is clear. In his paper, 'Indicators of the relative importance of IPRs in developing countries', Sanjaya Lall[12] concludes that countries with better R&D effort show higher patent filings. India and China featured low on the charts for the number of patents per 1000 people, and R&D investments in the paper of year 2003 (ref. 12). The developing countries do not produce volumes of patents. However, they need to understand the mountain of patents already filed and in circulation, if they wish to compete and have an intention of trading with the developed countries. Such countries will tend to focus on research without much prior art analysis. If an Indian scientist is investing in R&D and seeks to know if others all over the world have already protected the area the scientist is proposing to invest in, then, this becomes an unimaginably difficult task. Further, not all developing countries have their databases in a manner that is easily portable to the PCT database for comparative search amongst countries. Cases of 'reinventing the wheel' are thus highly probable in the developing countries.

The problem gets compounded when the developing countries, with low R&D investments and intellectual property practice, sell globally. They tend to get service-oriented and their GDP will be service-heavy. If an inventor does not file a patent (Indian or US or via PCT), but tries to trade the know-how in a developed country which has already patented the technology, then, it is clear that the inventor from the developing country cannot trade in those developed countries where the technology is already patented.

Globalization has not yet become the vehicle for increased R&D productivity in the developing countries, as it has been the vehicle for outsourcing and service revenue inflow. Globalization has brought in an increased number of foreign patent filings in the developing countries, filed by foreign MNCs doing business in them. The developing countries that trade globally must also be conscious of intellectual property management practices of those developed and developing countries they trade with. The developing countries with a weak intellectual property practice will always fall behind in trade in comparison to other developing countries with a stronger practice. Nothing much needs to be said about the stronger developed country. The developed countries often expect the developing countries to put in place their intellectual property regime prior to trade negotiations. Deli Yang[13] writes in her paper 'The development of intellectual property in China' that the development of an intellectual property protection (IPP) system in China can be traced to 1979, when the Chinese government negotiated the Sino-US Trade Agreement with USA. Negotiations reached a stalemate when the US argued that the 'IPP should be an integral part of their bilateral agreement on science, technology and trade'[13]. The US clearly stated that it will not sign the agreement in the absence of the IPP.

Developing countries play a weak role in intellectual property negotiation and management practice the world over because they lack R&D intensity and have a distractingly large service export orientation. The initiatives of WTO and WIPO work to support the policy of harmonizing and standardizing intellectual property across the

developed and developing countries. However, policy and law makers may benefit from noting that the activity that creates intellectual property (namely R&D) within a country differs across these contracting countries, especially between ones with differential incomes. There is a view that TRIPS did not solve the problem of harmonization. Peter Drahos[14] in his paper on 'Developing countries and international intellectual property standard-setting' states that the developing countries hardly had a role to play in the TRIPS negotiation. This implies that, if the momentum of standardization is centred on the known decision-makers (the developed countries), the IPR policy will remain as it is, essentially a monopoly of the developed countries. Thus, while harmonization is complicated and apparently biased towards the goals of the developed countries, the way to step up the negotiation powers of the developing countries is by having better intellectual property management practice, because of greater R&D intensity. In other words, as R&D intensity of the developing countries increases, so will the intellectual property practice, and vice versa. Harmonization will also mean appropriate standardization; nevertheless, what to standardize requires careful examination.

Given the current situation, authors writing 'anti-patent' essays are not justified making cases to abolish the patent system, but will make the right contributions instead, by giving insights for a shake-up via standardization. Standardized global ways to manage intellectual property practice are evolving, implying that the world is learning over time. In 1993, Robert Sherwood[15] reported the need for a globally uniform intellectual property system. He described a quasi numerical approach to scale the intellectual property system of countries from 1 to 100. It was found that Germany rated the highest, with the rating being in the 90s, and USA and other parts of Europe rated at 80, while Argentina and Brazil at 30 and 40 respectively. Sherwood claims that only when an intellectual property system is rated above 70 will it produce positive results for any country. As a result, private venture capital firms will invest in technology-based start-ups in that country, valuable knowledge will flow from university to the market and local firms will become willing to invest in R&D. Sherwood hints that good intellectual property practice becomes a magnet for foreign investments in a country… and that it is technology and not ideology that drives the world's economy. With internationalization of research, across countries, IPP becomes easier for all the participating countries if it follows one global standardized practice. In 1993 Claudio Frischtak[16] pursued the same line of thought and elaborated that countries such as India and China (rated in 1988), have productive potential for research but their research is weak, and so they tend to copy, reverse-engineer and adapt foreign innovations domestically. A weaker protection has no impact on research, since the extent of research is low in the first place. Thus Frischtak says, 'when the research competence is insignificant whether to protect or not is immaterial'.

Conclusion

Standardization efforts are underway since the last decade. By the year 2000, the developed countries came together helped by WIPO to form a global patent system, and a road map was drawn. In the WIPO report of year 2000, Arai[17] wrote that the 'global patent' had a four-stage approach. First, to initiate mutual recognition of search results (Paris Convention), mutual recognition of a patent, trilateral patents (among JPO, USPTO and EPO), and finally, global patents (among all countries)[17]. So far, the first stage of mutual search results is yet to be completed. With this effort, patent search standardization has begun, and the developing countries will stand to gain when they access a single-point free global database.

To further take care of standardization, an interesting pilot effort has already taken off with the mutual recognition of a patent, via the 'patent prosecution highway' (PPH). With the increase in global consciousness, inventors of various technology areas are filing duplicate patent applications in multiple countries. Today, it is not uncommon for companies to file patents in more than 120 countries. They hope to fully protect their invention in markets of relevance. Thus, patent examiners of various national patent offices have to deal with a growing workload. The growing application rate worldwide motivated Japan and USA to take a lead in solving the problem. According to the Japanese Patent office website, the PPH aims '*To move forward with international work-sharing for addressing this problem, Japan has been working with other offices to push ahead with the Patent Prosecution Highway (PPH) program. In the PPH program, if a patent application is regarded as patentable by a patent office of first filing (OFF), a patent office of second filing (OSF) may, by making use of the patent examination results of the patent office of first filing, provide a quicker examination process for such patent application through simpler procedures*'[18]. Standardization by avoidance of duplication, quicker examination processes, quicker decisions of patentability, reduced numbers of claims, claims with narrower focus, and reduced costs are their goals. In the recent Plurilateral Patent Prosecution Highway (Plurilateral PPH) Working-Level Meeting, the countries that participated were Japan, Canada, Denmark, Finland, Germany, Korea, Russia, Singapore, UK, USA, and the European Patent Office (EPO). China and Brazil were observers. In May 2011, China began the pre-pilot phase of PPH with the Japanese Patent Office[18].

The PPH may help reduce polarization and draw closer to a convergence of views. As a summary, Figure 1 traces the movement from polarization to potential convergence. India will gain by participating in PPH. It is difficult to

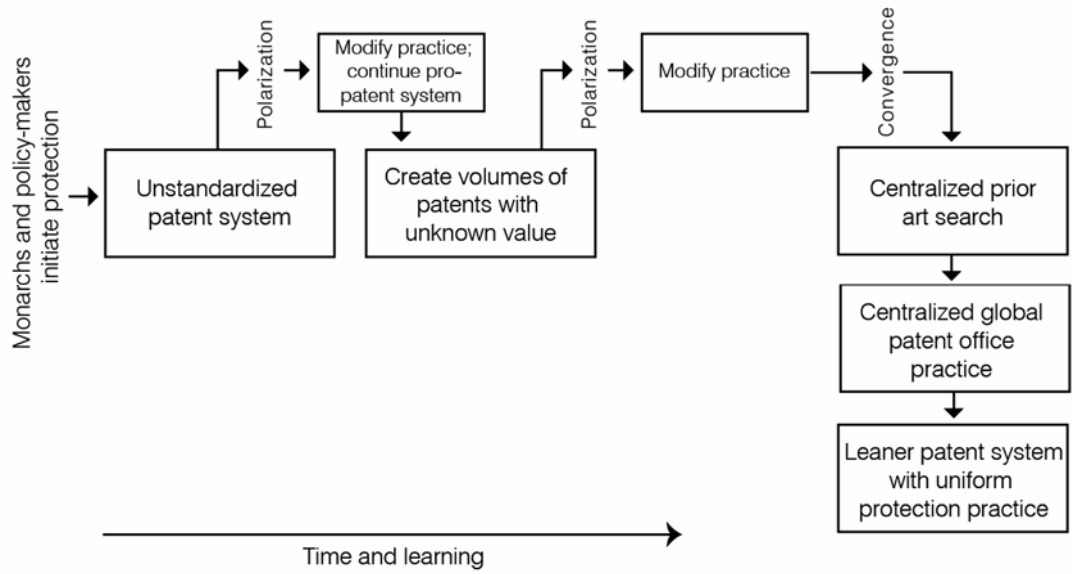

Figure 1. Tracing the history of polarization to potential convergence.

tell if good R&D will enhance the Indian patent system, or a good patent system will enhance R&D investments and industrial productivity in India. However, standardization of patents in accordance with a globally evolved practice will boost R&D practice.

If R&D outcomes do not have a valued use, the role of patent systems will cease to exist. If R&D outcomes are aimed at improving society, then it is clear that the market is the only conduit through which one can extend the outcomes of R&D to society. This extension cannot be done for free (free as in money), as the R&D outcome must be valued and also be competitive. A competitive R&D approach in India will need supportive systems that standardize the patent examiner's clarity about the definition of a patent. That is, there must exist a globally standardized, centralized prosecution system in addition to a centralized patent search system. Such standardized patent systems will also help improve standards of R&D and reduce illogically growing patent volumes. It will also lessen the influence of political boundaries in determining patent worthiness, a practice that has limited the patent system for centuries. While it is best to centralize searching and prosecution systems, marketing a patent can be achieved in a decentralized manner based on trading principles and trade agreements of the country of the inventor.

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Received 4 January 2010; revised accepted 24 June 2011