

Lessons from Japan in intellectual property reforms

Dileep K. Paturu, Abhilasha Aswal and H. Mohd. Imaduddin

It is well known that patents play a major role in the economies of developed countries. The gradual transition of Japan's economy from relying solely on manufactured goods to exploiting intellectual property (IP) is a classic example. Measures, such as the Bayh–Dole Act¹ to promote patenting of federally funded inventions in the US, and the imitation of that Act, at least in practice, by other countries, have given new meaning to university–industry partnerships for industries heavily dependent on R&D. Due to the pressures of economic globalization, India too has begun to pay greater attention to patent protection. This is evident in the recent amendments made to India's Patents Act to make it TRIPS (Agreement on Trade Related Aspects of Intellectual Property Rights) compliant, and the fact that, in spirit, the Indian Government too follows the Bayh–Dole Act in relation to the R&D projects it funds².

In addition, the emerging phenomenon of patent trolls and grant of a large number of frivolous patents by the USPTO (United States Patents and Trademarks Office) in particular have, *inter alia*, brought into focus in all countries, the need for a revamped patent system to check the imbalance they cause between social welfare and inventors' interests, not to mention the disruptions in business. In the Indian context, three recent IP cases have aroused interest.

- In *Dimminaco AG vs Controller of Patents*³ (2002), the Calcutta High Court held that the mere fact that the end-product of a process is a living thing does not preclude its patentability. This mirrors the 1980 US Supreme Court decision, which allowed patenting of living matter in the *Diamond vs Chakrabarty*⁴ case. Indirectly, it indicates that India's biotechnology industry is in a nascent stage, while it is thriving in countries like South Korea and Singapore.
- In *Novartis AG vs Controller General of Patents*⁵, Novartis challenged Section 3(d) of the Indian Patents Act, claiming that it was non-compliant with TRIPS [Novartis filed two writ

petitions in the Madras High Court. In one, it challenged the constitutional validity of section 3(d) and in the other it challenged the order of the controller. The latter was then referred to the Intellectual Property Appellate Board (IPAB)]⁶. In support of the claim, Novartis cited Mashelkar's report⁷, which too had drawn a similar conclusion. The Madras High Court declined to rule stating that the case was outside its jurisdiction. The issue remains unresolved as Novartis has not appealed to the Supreme Court.

- In *Lintech Electronics (P) Ltd and Anr. vs Marvel Engineering Co and Anr*⁸, the Delhi High Court mistook a patent case as a copyright case.

A few comments are in order. Patent filing and patent litigation in India occur at low numerical levels compared to, say, the US and Japan. Now that India has emerged as an important player in the global economy, it is time to think in terms of proactively revamping our judicial system with respect to protecting IP rights. The Government has already taken some basic steps such as the 1999, 2002 and 2005 amendments to the Patents Act (1970) to make the Act TRIPS-compliant. However, much more needs to be done, especially with respect to our judicial system. Here we may draw some useful lessons from Japan's recent efforts in revamping their judicial system in protecting IP rights.

Japan's IP High Court

The IP judicial system in Japan dates back to 1950, when the 'Intellectual Property Division' was first established in the Tokyo High Court. It specialized in suits against the decisions taken by the Appeal/Trial Board of the Japan Patent Office (JPO) and appeals from district courts on IP actions. On 1 April 2005, the 'Intellectual Property Division' of the Tokyo High Court was transformed into the IP High Court with four divisions and one Special Division known as the Grand Panel. This important restructuring took place due to lessons learnt in the past two

decades on the economic front. Japan's dominance as an industrial power in the 1980s was followed by a recession which forced the government to re-examine its economic policies. The result was a radical change in policy aimed at converting Japan from an industrial nation to an IP-based nation. The government pursued various measures for the creation, protection and exploitation of IP as a national strategy, so that the economy could regain its strength and compete in the global market. It decreed that Japan should transform itself from an 'advance control and regulation' based society into a 'post review and remedy'-oriented society.

In July 2003, the idea of an IP High Court was mooted in the 'Promotional Plans for Intellectual Properties of 2003'. The IP High Court Law which was enacted on 11 June 2004 was promulgated on 18 June and made effective from 1 April 2005. The IP High Court was formally established in the Tokyo High Court as a 'special branch' with highly independent authority⁹. The alacrity and determination with which the IP High Court was established is rarely displayed by governments in bringing about reforms and has surprised many.

Interestingly, unlike the other courts in Japan, the IP High Court was not established under the Court Organization Law, but by a new legislation. This Court has a Chief Judge, an Administrative Office, and has autonomy over its administrative matters which are decided by its own judicial conference. Unlike the other High Courts which have regional jurisdiction, the IP High Court has national jurisdiction. However, its decisions may be appealed in the Supreme Court, which also supervises its judicial administration (Figure 1). While some countries do have courts specializing in IP matters with nation-wide jurisdiction, such as the US Court of Appeals for the Federal Circuit, the Federal Patent Court of Germany, and the Patent Court of Korea, the Japanese initiative is much more sophisticated with potentially far-reaching consequences. For example, the IP High Court personnel include judicial research officials and expert commissioners. Judicial research

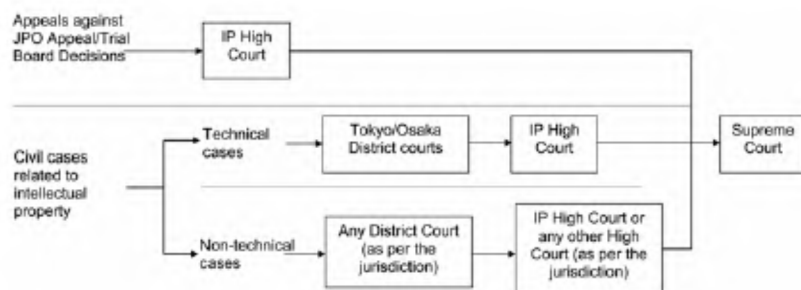


Figure 1. Hierarchy of the Japanese judicial system.

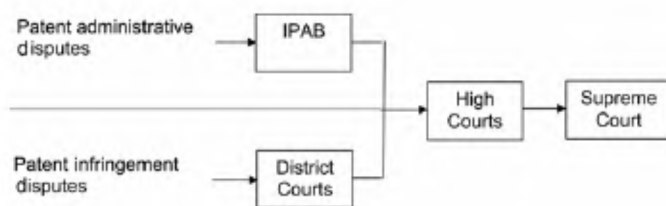


Figure 2. Hierarchy of the Indian judicial system.

officials conduct research on technical matters required to conduct proceedings and render judgments. Expert commissioners, who are part-time officials, are appointed by the Supreme Court to assist judges by providing explanation of technical knowledge in cases where their expertise is needed to clarify issues or to facilitate progress of the proceedings. The commissioners are selected from among experts such as university professors and researchers from public research institutes, who have expertise in various scientific fields. The fact that the judges, expert commissioners and research officials attend seminars, workshops, symposia, etc., shows that the judicial system truly wishes to gain the confidence of contesting parties and provide quality judicial service.

Generally, the judicial bench consists of three judges. But, a Grand Panel of five judges (one judge from each of the four divisions and an assistant judge) is set up when a case involves important issues and it is appropriate to provide unified opinions of the Court on those issues without delay. In summary:

- The daily support provided by the research officials and the case-by-case assistance provided by the expert commissioners have made the IP High Court well equipped to resolve highly technical cases.

- The establishment of the IP High Court has been a deterrent to the illegal flow of pirated goods. Such activities had been threatening the sound development of IP in Japan.
- The IP High Court helps in educating people about the value of IP and in nurturing an IP culture.
- Being the first of its kind, it has a challenging task ahead in fulfilling the high expectations of the people it serves.

The Indian system in comparison

Figure 2 shows the Indian judicial system. Patent disputes in India are classified either as patent administrative cases or as patent infringement cases. In the former, the Patent Office is the defendant and the cases relate to disputes on grant of patents, patent invalidation and upholding, and compulsory licensing. In the latter, the patentee or relevant parties pursue damages against infringement. In such cases, the court may appoint an independent scientific adviser, who plays a role similar to that of an expert commissioner in Japan. The Indian judicial system does not have the equivalent of the research officials as in the case of Japan. Despite the hierarchical similarities seen in Figures 1 and 2 between the Indian and the Japanese systems, there are significant operational differences.

- The most important difference is in access to and means of assimilating technology-related knowledge by the judges. Japan is more advanced in this respect.
- The Novartis case was referred to IPAB by the Madras High Court. However, since the technical member of IPAB was the former controller of the Patent Office who had rejected their patent application, Novartis objected. The objection was overruled¹⁰ by IPAB invoking the ‘doctrine of necessity’ for lack of a substitute technical member. Novartis has since appealed this decision of IPAB to the Madras High Court. Leaving aside this issue, there is no clear provision for appeals against the IPAB rulings on the validity or otherwise of patents in the current Patents Act. However, experts believe that ‘even if the IPAB pronounces a judgment, the case could be further pursued in the High Court and the Supreme Court, paving way for a long legal battle...’¹¹.
- Until 2003, there was no board of appeals against decisions of the controller of patents in India. The IPAB was constituted under the Trademarks Act (1999) and the Geographical Indications of Goods Act (1999), but it could be brought into force only in 2003. The Patent Amendment Acts 2002 and 2005 brought cases related to patents under the jurisdiction of the IPAB. But, as a technical member was not appointed, it could not handle cases related to patents until 2007. In contrast, the IP High Court of Japan was functional within a span of 2 years from the time of conception, with excellent technical and judicial staff.

The wisdom and speed with which the Japanese government has sought to reform its IP system to compete in the new world tied together in a global economy, is worthy of emulation. If India is to take its rightful place in this global economy, it too must revamp its IP system. This necessarily includes modernization of its judicial system. Japan has shown that this can be done without undue delays.

1. Bayh–Dole Act: 35 USC §§ 200–212, The US Patent Act, 1952; http://www.uspto.gov/web/offices/pac/mpep/documents/appxl_35_U_S_C_200.htm

2. Patwardhan, A., UC-India Summit, University of California, San Diego, May 2006; www.tifac.org.in/abt/patwardhan-talk.ppt
3. Lakshmikumaran, M. and Bhattacharya, S., NIPO Souvenir, 2003; <http://www.nipoonline.org/img2003/souvenir/TheDimminacoCase.html>
4. Diamond V. Chakrabarty, 447 U.S. 303(1980); <http://digital-law-online.info/cases/206PQ193.htm>
5. Novartis loses plea; HC upholds Patent Act provision, *The Hindu Business Line*, 7 August 2007; <http://www.blonnet.com/2007/08/07/stories/2007080751920100.htm>
6. *The Hindu*, 9 August 2007; <http://www.hindu.com/seta/2007/08/09/stories/2007080950161500.htm>
7. Report, Mashelkar's Committee, December 2006; http://www.patentoffice.nic.in/ipr/patent/mashelkar_committee_report.doc
8. Mathur, T., Patent litigation trend in India, 22 June 2007; http://papers.ssrn.com/sol3/papers.cfm?abstract_id=995994
9. Katsumi, S., *AIPPI J.*, September 2006; <http://www.ip.courts.go.jp/eng/documents/pdf/conference/200609.pdf>
10. Novartis AG vs Union of India, ORDER No. 97/2007, Intellectual Property Appellate Board, 20 July 2007; www.patentmatics.org/pub2007/pub9b.pdf
11. *Business Standard*, 19 June 2007; http://www.businessstandard.com/common/storypage_c.php?leftnm=10&autono=288175

*Dileep K. Paturu**, *Abhilasha Aswal* and *H. Mohd. Imaduddin* are in the International Institute of Information Technology, 26/C, Electronics City, Hosur Road, Bangalore 560 100, India.
*e-mail: dileep.kumar.p@iiitb.ac.in

OPINION

Mathematics phobia: Are the mathematical sciences a pothole in the road of life?

Pavlov Rameau and Clifford Louime

The anxiety feeling that leaves some of us defenceless at the thought of solving a mathematics problem has been dubbed mathematics phobia. It has also been described as an 'irreversible psychological pathology' interfering with one's ability to address mathematical issues¹. Symptoms of mathematics phobia could include excessive sweating, shortness of breath, heart palpitations, inability to speak or think clearly, or a full-blown anxiety attack². Most people directly affected are astounded to discover that they are far from alone in this shockingly widespread, although often unspoken, phobia. While mathematics phobia sufferers recognize that these worries are irrational, they are still overwhelmed by panic emotions when facing or at the contemplation of confronting the feared situation.

To better understand this condition, one should draw a big picture and analyse it from a societal perspective. First of all, what is mathematics? Mathematics is a language, a mode of communication, where universally accepted codes or symbols are used to replace longer statements and draw conclusions³. As in religion, mathematics as its core, has conventional concepts which are yet to be confirmed. A Christian, for example, does not require any proof regarding the birth of Jesus, neither does a mathematician, when it

comes to define a point, a line or an angle. Christianity indeed has a set of rules that Christians recognize as true, without questioning, such as the ten commandments. The mathematical sciences also have sets of viewpoints that mathematicians do not argue about. These are called axioms; for example, 'two right angles are equal' is an axiom. Many lines of faith follow the rules of the ten commandments. Forgiveness has replaced 'an eye for an eye'. In mathematics, many theorems follow the axioms. We have all heard of the Pythagorean theorem. As much as Christians believe in the *Bible*, there are reported inconsistencies in the *Bible*; for example, there are neither three days nor three nights between Good Friday and Easter Sunday, nor was Joshua able to stop the sun for 40 days, as the sun is fixed. Similarly, there have been some discrepancies in the theorems over the years. For example, L'Hopital's rule, named after mathematician L'Hopital, had originally some errors and was corrected later on by other mathematicians who have kept the name of the original author. Mathematics just like a religion is based on common accepted beliefs.

Knowledge and application of basic mathematics have always been an inherent and integral part of individual and collec-

tive life. Today, mathematics is used throughout the world in many fields, including the natural sciences, engineering, medicine and the social sciences⁴. Therefore, one should wonder how mathematics phobia sufferers go by without dealing with the subject. Simply put, mathematics is necessary, though not indispensable to individual achievement. As it has been shown in many cases, success in life can be achieved without being mathematics savvy. Knowledge and understanding of basic mathematical concepts can undoubtedly simplify your life, but do not preclude living a quality life. In addition, mathematics has several limitations when it comes to explaining some basic life theories. Although mathematics has been able to elucidate observations and discoveries in physics, astronomy, etc. it cannot be used to explain beauty, love or popularity. Mathematics is the only plausible working system at our current disposal. Therefore, it appears to be more than crucial in certain situations.

Mathematics is not a recipe for success. One is not guaranteed a successful life by being good in mathematics, and vice-versa. We are constantly being bombarded with great success stories, such as Bill Gates, one of the richest men in the world, who mastered mathematics at an earlier age. What these stories failed to