



Workshop
on
IPRs in Nanotechnology: Issues, Trends and Challenges for India
January 28th, 2010, Conference Room, TERI, New Delhi

Background

Nanotechnology has emerged, in recent times, as one of the most active fields with respect to intellectual property rights (IPRs), with both universities and companies rushing to the patent office in record numbers to patent nanotechnology inventions (Lemley, 2005). The highest number of nanotechnology patents worldwide is owned by the United States, followed by Japan and Germany (OECD, 2009). According to the Lux Research, Inc., as of April 2005, 3,818 nanotech-related patents were issued by the USPTO alone between 1985- March 2005, with an additional 1,777 patent applications. Developing countries like India have also become quite active in recent times, with the intensity of patenting activity growing exponentially between 2001-2007 (Gupta, 2009).

As with the emergence of any new technology, nanotechnology creates issues, opportunities and concerns in adapting the intellectual property rights (IPR) regime to its particular context. There is some consensus that IPRs in nanotechnology could be more problematic than other technologies and give rise to a number of complex situations. Nanotechnology is a new field and most of its patents are for basic inventions, not for fully developed final products, creating problems because patents on basic inventions are inclined to cover larger areas than final products (Lemley, 2005; ETC Group, 2005). Since nanotechnology is a broad discipline encompassing several others, the granting of very broad patents spanning multiple industry sectors could be problematic. Broad patents granted to inventors can lock up or impede crucial improvements needed to take a new field from interesting lab results to commercial viability. As nanotech research is too expensive and complex for small players, nanotech will accelerate the trend towards corporate concentration of power and monopoly formation. These apart, it is difficult for nanotechnology patents to fulfil the patentability criteria for novelty, non-obviousness and industrial application. This could be aggravated by the lack of capacity of patent examiners to determine 'prior art' owing to the fact it spans across a wide range of scientific areas and disciplines.

IPRs in nanotechnology are likely to prove even more challenging for developing and least developed countries, which irrespective of their state of technological advancement, are obliged to confer IPRs in the new technology. The Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement obligates all WTO (World Trade Organisation) member countries to adopt and enforce minimum standards of intellectual

property, with WTO members having to allow patents in all fields of technology. As international patent trends indicate, multinational corporations, universities and nanotech start-ups have already secured numerous patents on essential nanotech tools, materials and processes. Participation in this proprietary nanotech revolution for developing countries is, thus, likely to be highly restricted by patent tollbooths, obliging payment of royalties and heavy licensing fees to gain access. For many developing countries, the rationale for accepting stronger IP regimes has been the argument that their economies would prosper from increased technology transfers and foreign direct investment. However, the reality is that stronger levels of IP obligate developing countries to make a massive transfer of resources to the developed countries, in order to acquire licenses for proprietary technologies.

For a developing country like India, the challenge will be to tailor an IP regime for nanotechnology, which while offering the mandated protection under TRIPs, is able to explore the flexibilities within TRIPs to serve developing country interests. Capacity building and training of patent examiners and suitable modifications/ amendments in the patent regime would be required in order to enhance its ability to deal with this new technology. While developed countries like U.S.A, European Union and Japan have realized the need to have separate classifications for nanotechnology and impart training to patent examiners, India is yet to take any such steps in this direction.

Another important issue which comes up in the context of nanotechnology patenting is how to ensure the equitable sharing of IP rights arising out of research collaborations, which is inevitable given its multi-disciplinary nature and cross-sectoral application. With nanotechnology patenting activity by the government and academic institutions being considerably high in India (Gupta, 2009), the relevance of the newly drafted legislation to protect IP arising out of publicly funded research is also worth looking into.

Key Questions

In the context of the above background, some of the key questions which IPRs in nanotechnology give rise to, particularly for India are:

(a) What are the broad issues and challenges in adapting the intellectual property rights regime to nanotechnology?

(b) Are these challenges compounded for developing countries, which are obliged under TRIPs to provide IPRs in nanotechnology, irrespective of their level of development and the capacity of the domestic IPR regime to handle nanotechnology? Do developing countries face certain unique challenges?

(c) Is the Indian IPR regime equipped to handle nanotechnology, in terms of both law and infrastructure to implement the law? Does the Indian legislation offer the flexibility to reconcile the need to offer protection to nanotechnology inventions with the imperative to ensure benefits arising out of these inventions to the larger society?

(d) What are the major trends and characteristics of the Indian nanotechnology patent landscape and how does it compare vis-à-vis global patent trends in nanotechnology? Who are the main holders of nanotechnology patents (and publications) in India and what broad inferences can be drawn from this?

(e) Do IPRs in public funded nanotechnology research lead to ‘privatisation’ of ‘public’ goods? What could be the possible implications of the draft Indian legislation on Protection of Public Funded Intellectual Property on nanotechnology developments in India? Would it provide a boost to more public research in the field or end up blocking public access to the fruits of research from public funds?

(e)What could be the possible role of ‘beyond IP’ approaches in addressing some of the problems which IPRs in nanotechnology give rise to? Could patent pools, open source approach be a solution to the problem of access?

Objectives of the workshop

The objective of this workshop is to explore these key questions, which emerge in the context of intellectual property rights (IPRs) in the emergent field of nanotechnology for India. The workshop hopes to provide a platform for diverse stakeholders to deliberate on these questions and arrive at recommendations for the Indian IPR regime, which helps reconcile the dual objectives of incentivising invention and ensuring the public good, which is ideally the goal of the IP system.