

CORRESPONDENCE

gement process is both heartening and disquieting. For India, the core areas of economic resolve that would machinate with IPR, *inter alia*, will be: (a) Transfer of technology, (b) Licensing agreements, (c) Drug development, (d) Research and development in universities and educational institutions, (e) Foreign direct investment (FDI) and technology absorption.

The present epoch is one that values knowledge and its usable variants. A Knowledge Economy is one in which information will be the raw material, and functional design of work, its upshot. This would engender 'brainpower' industries like biotechnology, genetic engineering and real time communications to flourish. It is in such an economy that knowledge workers – those who use information to comprehend the rationale for their actions – will dominate, and Indians are fast becoming so. It is high time colleges and

universities comprehended the significance of IP.

In this regard, the document 'Guidelines for Awareness, Protection and Management of Intellectual Property Rights (IPRs) in the University System in India' by the University Grants Commission (UGC) is highly commendable. The report is so designed as to maximize the benefits that the educational institutions and the researcher(s) would get from their intellectual capital, by (i) stimulating higher levels of innovation through a comprehensive system of rewards, (ii) ensuring timely and effective legal protection for their IP and (iii) leveraging and forging strategic alliances for enhancing the value of their IP.

This scheme has been conceived with the objectives: (a) To create awareness and develop a culture for protection and management of IPRs in the universities.

(b) To facilitate protection and management of IPR created in the University system in the country by creation of an enabling environment that fosters innovation. (c) To assist researchers and faculty members to have access to the best practices for identification, protection and management of IPRs in order to maximise the benefits and returns from investments in research.

As the UGC has rightly put it, 'Innovation is the key to sustained economic development and source of competitive advantage for nations. Indian research and development has to be globally competitive to fuel this innovation'.

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NEWS

MEETING REPORT

Genes, life and empire*

The domains of intellectual property have been vastly expanded in recent years with an increasing range of discoveries and inventions coming under the scope of patentable entities. The promise of gene as determinant of disease and health, especially, has resulted in what has been termed as a 'genome gold rush' and pushed the boundaries of intellectual property in this realm in unforeseen ways. Broad scope patents are being granted to all biological entities including genes, proteins, cells, modified animals and plants. Tragically, though the patent system is intended as a provision (by the state) to reward innovation, current patenting practices have led to private enclosure of what was regarded as common heritage, whether plant and animal varieties, genomes, or information/knowledge. Is the expanding 'anticommons' created by extensive patenting conducive to further innovation? What is its impact on the freedom of scientific research? What about the consequences of patenting for

the promise of the Human Genome Project, which was to provide solutions to health care for all of humanity? Are current interpretations of criteria of patentability, namely novelty, non-obviousness and utility for a scientific discovery, adequate to the changing times or should they be redefined? How does one protect indigenous knowledge from 'bio-piracy'? Is there/should there be a moral or ethical dimension in patenting? These questions loom large against a trend of the rising anticommons, in which intellectual property rights have been greatly strengthened.

Some of these issues were elaborated and discussed at a session (panel) entitled 'Genes, Life and the Empire' organized at the Critical Legal Conference. Papers presented by three panelists provided diverse spotlights on the landscape of IPR and biology.

The session chairperson (Chitra Kanabiran) in her opening remarks laid the background for the current era of patenting of life forms, referring to the landmark judgement by the US Supreme Court in 1980, *Diamond vs Chakravarty*, as the watershed for patents in biology. This

judgement ruled that the 'oil-eating bug' was patentable and was subsequently extended to allow patenting to virtually all life forms. A 'patenting boom' that ensued post-1980 accompanied the 'biotech boom' of the 1980s. Both of these developments were seen as manifestations of the commercialization of biology.

Dwijen Rangnekar (Centre for the Study of Globalization & School of Law, University of Warwick, UK), in his paper (A shrinking of the public domain in agriculture: A cartography of contemporary developments in intellectual property rights in plant material) discussed developments in intellectual property laws in relation to plant material. The paper examined the different ways in which the concept of public domain was framed in the literature in law and in economics and brought up the notion of the 'anticommons', a realm in which multiple users possess effective rights of exclusion from a scarce resource. Applying the concept of the public domain to knowledge, it put forth the premise that knowledge is not always completely 'free' and accessible, since the economy of knowledge renders

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some parts of the world severely disadvantaged, in that these nations do not have resources to use or integrate the knowledge (this is readily apparent if one considers the investments and resources required for present-day scientific research).

Profound changes in the nature of agricultural research were accompanied by concomitant changes in intellectual property law. Rangnekar provided a cartography of different IP laws pertinent to plant material. The development of these laws was framed in terms of the social and political context that contributed to the shrinking of the public domain with respect to agriculture. Significantly, one trend that this paper brought up in this regard is the move by the public sector to obtain patents for research; while there may be several justifications and criticisms of this, some of which were discussed, what it reveals could also possibly be the shrinking of the public sector itself, and the need to generate funds and 'deliverables' to justify its existence. Going further into this aspect of transformations in the practice of agriculture research, other prominent developments dealt with were the all-evident corporate globalization of the private sector, and technological changes in plant breeding that controlled the spread of a particular innovation. The paper outlined three 'waves of consolidation' as part of corporate globalization, in which mergers between several smaller companies were part of a drive to acquire the IP of small firms. A well-known example of the last mentioned development is the terminator technology that renders seeds biologically sterile. Through acquisition of IP, the corporate sector attained monopoly over seed networks and control of genetic technologies.

Another dimension to the context in which science and scientific deliberations occur, was provided by Usha Raman (Communications Dept., LVPEI) and P. Thirumal (Sarojini Naidu School of Communications, University of Hyderabad) in their paper 'Mediating scientific debate: talking about human tissue engineering' (presented by UR) in which they looked at the role of mass media in shaping public debates on science. The premise of the paper was that while scientific debate occurs within disciplinary and interdisciplinary forums, professionals and policy makers who participate in these

debates are conditioned by their exposure to mass media so that the nature and content of these debates is shaped by the media. Raman and Thirumal outlined the changing trends in debates on and around science over the ages from colonial India until post-colonial times. They argued that there was a plurality of debates in science in colonial times and during the nationalist movements, with attempts to draw on modern science as well as indigenous knowledge and practices. In post-independence India, science in the Nehruvian era became an instrument of development and an additional reason for state and there were no voices outside the state in the debates. In the post-Nehruvian period, science became de-linked with the state and directed increasingly by market forces. This analysis points to the changing status of science and its relation to the structures of power over different periods. One could add that just as science made a transition from being the business of state to that of corporations, so did development, including the present day building of the knowledge society. Locating one of the major spaces for debate in the present period as the mass media, this paper drew on the content and language of news items relating to stem cells and tissue engineering in *The Hindu*. This analysis suggested that the news stories rarely discussed larger social or ethical implications of the developments they portrayed. A further point was that scientific controversy or uncertainty in relation to the uses of a nascent technology was not adequately presented; rather the tone of the media reports tended to play upon its benefits for humanity, even if these are implied and far from being realized. Very aptly, the paper also drew attention to the commercial intent of the language used to describe the body or parts thereof citing terms such as 'prospecting' for genes, 'harvesting cord blood' and 'banking tissues' that are ingrained in all vocabulary!

Indigenous knowledge systems are the target of increasing attention and investment and pose complex issues in the drive towards enclosure. Sagari Ramdas (Anthra, Hyderabad) presented a paper (Protecting indigenous knowledge through IPRs—patently paradoxical) on the issues that arise with regard to private enclosure of traditional knowledge, based on her experience in working with communities

relying on livestock breeding as a livelihood. In the context of the move to 'protect' indigenous knowledge through IPRs by governments and professional bodies, Ramdas challenged the notion of IPRs as adequate or appropriate as a protection of peoples' knowledge and raised crucial questions regarding the applicability of IPRs to indigenous knowledge. The paper elaborated on the modes of sharing and transfer of knowledge among rural communities and argued that the indigenous knowledge systems though not unconditionally open, were transmitted according to definite patterns and hierarchies within the community. However, there was a space for sharing and transfer within the community and these were always negotiable. This stood in contrast with the monopolistic and individualized ownership within the framework of IPRs. Arguing against the validity of the patent system, the paper brought up complexities inherent in the generation and use of traditional knowledge systems – they could not be traced to one or few inventors but evolved and integrated over time and geographic boundaries. It would therefore be impossible to identify the community or location where 'ownership' could be assigned, who had the rights to benefits, etc. The paper critiqued the role of patent legislations and the Biodiversity Act of 2002 in protecting rights of communities. The effective counter-strategy proposed by Ramdas against the IPR regimes was that of knowledge-sharing through mass, open systems; specific methods being adopted towards this goal include reassertion of the sovereignty of the traditional systems, reviving practices of indigenous methods including seed saving, use of local breeds of crop and livestock, creation of local seed-banks, and active dissemination of this knowledge through training and local publications.

The very diverse realms of experience of the participants and several other dimensions on this subject, brought up by the audience during vibrant discussions that followed, considerably enriched the debate.

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