



**SOCIETY FOR TECHNOLOGY MANAGEMENT  
FOSTERING INNOVATION  
AUGUST 19<sup>TH</sup> - 20<sup>TH</sup>, 2014 Hyderabad**

**Annual Summit Proceedings**

**DAY I (19.08.2014)**

**SESSION I**

**Keynote Address:** "Technology Commercialization beyond Silicon Valley" - Jane Muir (President, AUTM) 9.25 - 10.15 am.

The success story of Silicon Valley has spurred other models of commercializing technology. The Bayh-Dole Act of 1980 has helped commercialize innovations through the model of Technology Transfer from academic institutions to companies. This has provided an opportunity to universities to reap financial rewards by licensing patents to industry which is able to generate return over investment and stimulate productivity. There are at times unrealistic expectations in taking innovation from the laboratory to the market and this is reflected in the fact that very few universities have made money from licensing technology. It is this challenge that Technology Transfer Professionals have to address.

The University of Florida has been at the heart of innovations such as the sports energy drink Gatorade, the termite colony elimination system commercialized by Sentricon and Trusopt which is used in the treatment of glaucoma. These new products have been successfully commercialized as a result of which the university has been able to generate revenue of half a billion dollars in the last 20 years through royalties.

The success of Technology Transfer can be measured both by its economic impact and social impacts. The economic impact is in the revenue and tax generation and creation of new jobs and companies. The social impact can be seen in the reduction of health costs and increased food supply. This can be seen in innovations such as Xhale Hygreen technology which is a device to ensure hand hygiene of hospital personnel and Sharklet technology which is a coating used on hospital surfaces to prevent infections from growing and spreading. The above technologies developed by universities can play a significant role in the healthcare industry where every year in the United States alone nearly 100,000 patients die of hospital infections and millions of patients have to spend on an average 5.2 extra days in hospital incurring expenses of nearly 4000 dollars a day for treating hospital infections. Similarly wheat varieties developed by Dr. Norman Borlaug have resulted in high yielding crops which can fight hunger when every year nearly 3.5 million children die from hunger and malnutrition worldwide.

The above mentioned technologies are but a few of the instances of how Technology Transfer has an impact on real people and has changed the world.

## **SESSION II**

**Panel Discussion:** “Value Creation of Innovation – Industry and Academia Perspectives” 10.45 - 11.45 am.

Panel Chair - K. Vijayaraghavan (President, STEM), Panelists: D. Rama Rao (NAARM), Paresh Verma (Bioseed), N. Suresh (BioSpectrum), Immanuel Selvaraj (SABIC), Bidyut Sarmah (Assam Agriculture University).

Value Creation is different from Innovation. While the former does not happen frequently and should satisfy the needs of the customer, the latter keeps happening all the time in research laboratories. Investors in new technologies are interested in return over investments and value creation is crucial to attract these investors. However there is a difference of perspectives between academia and industry. While academia is knowledge driven and science oriented with less revenue generation, industry is business driven and application oriented with much more revenue returns. Industry is also helped by marketing divisions which find segments where the needs are there for particular products and services. The private sector is aware of the risks involved in investing time and money in new products and services while academia generally works in a no-risk environment where public funding is assured irrespective of the results obtained.

Collaboration between academia and industry can be achieved through Open Innovation involving co-creation by industry-industry and industry-academia interfaces which creates value for both industry and academia as new products and processes can be developed in a shorter frame to bring into the market.

Nearly 90 % of the new biotechnology companies have an academic background. The Biotechnology Industry Research Assistance Council (BIRAC) which has been created as a non-profit company under the aegis of the Department of Biotechnology has launched a programme called the Biotechnology Ignition Grant (BIG) for entrepreneurs to innovate in the field of biotechnology. The initial grantees of the funding under BIG scheme include companies such as Achira Labs, Western Range Biopharmaceuticals, Novo Informatics, Nano Sniff etc.

Value creation in the agricultural sector in India is mostly in post-harvest technology and health food areas where private companies are playing a significant role. Public sector agricultural laboratories are focussed in certain areas such as biodiversity, native seeds and crop protection. Public sector laboratories such as those under the Indian Council of Agricultural Research (ICAR) engage in value innovation but the next steps towards value creation such as marketing and production are undertaken by private sector companies. While a private company would take only three crop seasons (18 months) to bring an innovation to the market, a public sector laboratory or company would take nearly five years to do the same process due to the time consuming bureaucratic environment. A priority shift will only occur if the private sector comes forward and engages with the public sector institutions to bring focus on the specific needs of industry.

When it comes to Technology Transfer, criticism is levelled upon the private sector companies which license technology developed by public sector laboratories. This criticism can be overcome if the public sector institutions also obtain the expertise of good Intellectual Property teams in drafting foolproof licensing agreements.

**Panel Discussion:** “Valuation of Technologies vs. Valuation of Business - Are technology valuations becoming a complex business valuation?” 11.45 -12.45 pm

Panel Chair: K. Ragnathan (Sathguru Management Consultants), Panelists: CSN Murthy (Aurigene Technologies), Sanjay Jesrani (Go North Ventures).

In the era of globalization valuation of technologies has an impact on businesses. A recognised brand like Apple is able to leverage market valuation for its products even as its core team remains the same throughout the years because of the emphasis on innovation in technology. Startup companies are beginning to attract valuation due to new technologies that are the core of these companies. A company such as Uber is able to attract investors and buyers because of the technology that allows ridesharing through mobile apps. Similarly Biotechnology companies such as Neurogen, Infinity, IGEN Biotech, Cerulean Pharma are valued at different stages of the life cycle of drug development. Information Technology (IT) and pharmaceutical companies create market valuation by investing in innovation. However the turnaround of valuation of companies in these sectors is different compared to other technologies because of the longer period of regulatory mechanisms.

In India there is no or little valuation of a company unless there is certainty for products reaching the market unlike the developed countries where companies are valued even before the product hits the market due to the market potential of the products. Even though Whatsapp has revenue of around 150 million dollars only it was bought by Facebook for 17 billion dollars due to its market potential. Flipkart which is valued at one billion dollars was able to raise 7 billion dollars because its valuation was based both on its technology and business potential.

Valuation can go to extremes based on investors' appetite for risk. Sometimes the scale of valuation for a single pharmaceutical product may be much higher than the valuation of entire pharmaceutical company. An IT company like Cisco was able to raise billions during the IT boom period of the nineties but suffered heavily when the dotcom bubble burst. Investors and markets are brutal which ensures a high mortality rate for companies which fail to perform in the market despite high valuation. In a globalized world traditional players will have to adopt innovation as the key strategy for increasing their valuation and it will be the combination of technology and innovation that will help business to grow.

### **SESSION III**

**Speaker session:** “The Business Side of Plant Variety Protection” by R R Hanchinal (PPVFRA) 1.30-2.00 pm.

The importance of plant variety protection lies in the economic, health and environmental benefits to society. Four important reasons for protecting plant varieties are:-

- It would increase breeding activities.
- It would improve competitiveness in the market.
- It would benefit farmers, growers, industry, consumers etc.

- It would improve public- private sector partnerships.

As a result of breeding techniques, the productivity and production of crops in India such as Wheat, Maize and even Bt Cotton has increased substantially in the last sixty years. A positive effect is the reduction of total insecticides used in the production of Bt Cotton and the corresponding increase in productivity.

Article 27.3 of the TRIPS Agreement has enabled countries to choose their mode of protection of plant varieties in the form of patents, *sui generis* or a combination of both systems. India has chosen the *sui generis* method of protection and enacted the Protection of Plant Varieties and Farmers' Rights Act in 2001 (PPVFA) which has created an effective system for plant varieties' protection and safeguarding the interests of plant breeders.

After the creation of the National Gene Fund in 2007 the number of applications for registration of plant varieties has increased in India. The positive response from farmers and private sector companies to plant variety protection can be attributed to the effect of capacity building programs and awareness campaigns on the benefits of plant variety protection. However there is still room for improvement.

There are several challenges faced by Plant Variety Protection programmes in India. Spreading of awareness and capacity building, notification of extant varieties, commercial exploitation of other registered varieties are some of the hurdles in plant variety protection. Also the public sector has to be more engaging for the holistic development of the agricultural sector. The farmers, who are the innovators, should be made aware of the various benefits and the rights available to them under the PPVFR Act. The Act if implemented effectively will ensure food security, nutritional security and health security of the country.

### **SESSION III**

**Panel Discussion:** "Bioproperty laws & regulations - How does it impact Innovation and Technology Transfer" 2.00-3.00 pm

Panel Chair: Seetharama Nadoor (ABLE India), Panelists: Malathi Lakshmikumaran (L & S), Shashank Maurya (ICAR), RR Hanchinal (PPVFRA)

The government has a role as a regulator, facilitator and promoter of bioproperty in India where the farmer remains the largest seed producer. There is a serious deficit in institutional capacity in the protection of farmers' rights. The appropriation of bioresources by private companies creates a vocal fear among the people which affect policy making at the governmental level. In a country like India technology transfer would continue to happen even without substantial Intellectual Property Rights protection because of the *sui generis* system.

As a signatory of the TRIPS Agreement the position in India with regard to bioresources is also shaped by the developments in countries such as the United States. Recently, the US Supreme Court held that naturally occurring genetic materials are not inventions but are only discoveries, and hence not patentable. This has a consequence on genes and microbes isolated in research laboratories.

Moreover, the TRIPS Agreement is governed by WTO which is a forum for promoting international trade while bioresources are governed by the Convention on Biological Diversity (CBD) and the Nagoya and Cartagena Protocols under the Convention. The international scenario is complicated by the fact that countries that export food are promoting Genetically Modified food while countries that import food are opposed to the same. What is required in this context is greater degree of harmonization in between these countries. India in this context does not only require international harmonization but also harmonization between states.

Presently the regulation of the biotechnology sector in India has been stalled as the Biotechnology Regulatory Authority Bill lapsed with the previous government. Biotechnology companies which use bioresources and subsequently file patent applications have to disclose the source of the bioresource used and obtain prior approval of the National Biodiversity Authority (NBA). There are lot of prior approval applications pending at the NBA which has not had a chairperson for the last six months.

India has ratified the Nagoya Protocol in 2011 for access and benefit sharing for genetic materials but the current domestic legislation, the Biodiversity Act 2002 and the corresponding Biodiversity Rules 2004 contain no proper guidelines for the same. It is hoped that suitable Rules be implemented to address this issue.

The law and regulations must change to reflect the advances in technology. Issues such as the requirement of the consent of the state government for conducting field trials in that particular state even by academic institutions, labelling, post release monitoring are yet to be addressed properly by the government.

### **SESSION III**

**Panel Discussion:** “Bridging the Valleys of Deaths: Matching Innovators Need to Investor Interest”  
3.00-4.00 pm

Panel Chair: Shirshendu Mukherjee, (Wellcome Trust), Panelists: Abhiram Dukkupati (Magellan Life Sciences), Swapnil Gawade (Battelle India)

Technology Transfer is linked with certain challenges such as Value creation i.e. the technology in question must address the needs of the society so as to be valuable and attract funding and investment. Currently there being no paucity of funds in the market, a well planned program automatically attracts funding. The points that are to be discussed with the investor are USPs of the invention and how it addresses the needs of the society.

While philanthropic funding agencies such as Wellcome Trust are ready to invest in small innovations, Venture Capital Funds are more difficult to convince. So a 360° approach covering a strong science background in research and technology transfer is required to survey the preliminary commercial landscape in place. IP strategy must be sketched out through IP analysts with clear exit strategies before approaching a funding agency.

In commercializing innovations with no fixed end product, such as vaccines with new mechanisms, it is sometimes hard to convince investors. Start up companies should not be required to devote resources in economic survey and market research but focus on developing innovations.

Thus every project must demonstrate the following:-

- A thorough scientific analysis about how it will benefit the society.
- A thorough economic analysis as to what is the business prospects in it. Many discoveries have great scientific value but lack economic value.
- Manufacturing in lab is one thing while market production is another and scaling up challenges includes sourcing raw materials in large quantities which is not easy.
- How introduction of a particular product will add to the existing value.
- An innovation can have multiple applicability in different sectors and therefore greater commercial prospects in the market.

Before making an investment, Venture Capital Funding agencies also generally look into the team composition, passion of the R&D team and why are they doing what they are doing. Other aspects are Market Requirement/Product demand, scalability, accessibility, deployment, complementarities, and relevant expertise. A minimum viable product test is to be made to assess various parameters like target customer database.

Innovators must keep in mind the above considerations while working on an invention, especially when the inventor intends to commercialize the technology.

### **Session III**

**Panel Session:** "Technology access in bio-pharma: bridging gap by academia industry collaboration"-  
4.30-5.30 pm

Panel Chair/ Moderator: Pushpa Vijayaraghavan (Sathguru), Panelists: Ajith Kamath (Pfizer), Jayant Karajgi (Aurobindo Pharma), Rajesh Dubey (Dr Reddy's Labs), Sadhana Srivastava (ICMR)

R & D is the core of any pharmaceutical company and in the era of product patents R & D is needed to such an extent that industry - academia collaboration is necessary. While public funding is not an issue in academic institutions there remains a communication gap between academia and industry.

A governmental agency such as the Indian Council of Medical Research (ICMR) is engaged in facilitating partnerships between the public and private sectors to develop solutions for diseases like kala azar, swine flu, malaria which affect humans predominantly from rural areas. However, the focus of private pharmaceutical companies has been on other diseases. Being a public funded organization, the objective of ICMR is to address public health issues for which industry collaboration can be the solution.

Pfizer has partnered with academic institutions in India and abroad to develop novel drugs in the field of cardiovascular and oncology drugs. Researching on neurons in the amygdala region of the human brain to understand the causes of anxiety, depression and stress are being studied in Indian laboratories. Such knowledge is not available with private biotechnology and pharmaceutical companies currently and Pfizer is able to focus on developing suitable drugs for the market without

wasting time on research. Pfizer also encourages academia to come forward with research proposals into new drugs which are evaluated by the company and then taken forward.

The R & D facilities and the talent pool is good in generic drug companies like Aurobindo Pharma but the primary focus is on bringing drugs onto the market in the shortest possible time as time is of the essence. Aurobindo Pharma is collaborating with the Central Drug Research Institute (CDRI) for Tuberculosis treatment with lung inhalation methods and for reduced dosages to make them affordable for the masses.

On the other hand a company like Dr. Reddy's which produces both novel and generic drugs has relied on external R & D to boost the product pipeline of its drugs in the treatment of diseases that affect the Central Nervous System such as migraine and epilepsy. To meet the escalating R & D costs in the hunt for new products, collaborations between academic institutions and industry will become imperative.

Dr. Reddy's has ventured into tie-ups with small pharmaceutical companies and academic institutions in the West to develop new drugs. This is possible because academic institutions in the United States and the United Kingdom have robust systems of developing products which are Intellectual Property (IP) compatible and taking them to the market. Academic institutions file patents and even conduct prosecutions unlike academic institutions in India where the fear of litigation costs keeps them from engaging in such a mechanism. Also there is a general lack of willingness among Indian academia to share research data with a multinational pharmaceutical company.

#### **Session IV**

##### **Technology Showcasing Session** : 5.30-7.00 pm

Some of the innovative technologies showcased during the session were as follows:-

**Dr. Alka Kumar, Women's Health Centre, Vaishali Nagar, Jaipur:** Hystero-copy Pump

**Dr. Bidyut Sarmah: DBT Centre -Assam Agricultural University, Jorhat:** Transgenic chickpeas resistant to insect pests, Ethanol from lignocellulosic agricultural waste (bagasse), Detection method for toxins in mushrooms

**Dr. Dhinakar Raj, Translational Research Platform for Veterinary Biologicals, Chennai:**  
Probiotic spray for oral and skin hygiene in dogs, Antimicrobial egg trays

**Ms. AV Nagarathna, Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru:** High sensitivity assay for molecular typing of biological samples, intrinsically fluorescent carbon nanospheres, Turboprop aircraft wings, Method for separation of single walled carbon nano-tubes.

**Dr. PK Baruah, Assam Agricultural University, Jorhat:** Biofertilizer with azolla rice straw compost, Zinc solubilising bacterial formulation, Cross bred goats and cattle, Fish feed for carps

**Swapnil Gawade, Batelle India, Pune:** Method for groundwater remediation, Seed viability sensor

**Dr. P Swain, Central Institute of Freshwater Aquaculture, Bhubaneswar, Odisha:**

Method for Fish semen preservation, Cryofreezer (CIFA CRYO), Fish Feed (CIFABROOD), Portable fish hatcheries, DOT-Elisa Kits

**Dhruv Arora, Sathguru, Hyderabad:** Antimicrobial peptide formulation for superficial burn wounds, Improved pegylated liposomal doxorubicin

**Dr. Sanjay Bharadwaj, International Advanced Centre for Powder Metallurgy and New Materials, Hyderabad:** Hydrophobic resistant coatings on carbon epoxy composites, Nanosilver ceramic candle for water purification, Method for laser surface coating for alloying and cladding, Detonating Spray Coating technology, Exfoliated graphite

**Raja Das, Indo-Swiss Collaboration in Biotechnology, Delhi:** Biofertilizer for wheat, Biopesticide against pod borer

**Dr. PM Singh, Indian Institute of Vegetable Research, Varanasi:** Green chilli powder, Dried Ivy Gourd chips, Guava cider, Mahua/Bael/Mango wine

**Dr. K Mani, Tamil Nadu Agricultural University, Coimbatore:** Device to remove insect eggs from stored pulse seeds, Anaerobic dissolution of lead and production of organic leads

**Dr. AK Chauhan, Benaras Hindu University, Varanasi:** Guava pulp enriched dahi/shrikand, Aloe Vera beverage

**Dr.R.P. Singh, Benaras Hindu University, Varanasi:** Malaviya Dhan hybrid rice (HUR 3022), Malaviya Basmati-1 hybrid rice (HUBR 2-1), Malviya Sugandh 105 hybrid rice (HUR 105), Malviya Basmati Dhan 10-9 hybrid rice (HUBR 10-9)

## **DAY II (20.08.2014)**

### **SESSION I**

**Interactive Session: "International Technology Transfer/ Cross-border Opportunities and Intricacies"**  
9.00-10.00 am

K Vijayaraghavan (President, STEM) and Jane Muir (President, AUTM)

Technology Transfer has acquired a lot of visibility in the United States unlike the past as people have realized its impact. The economic environment is a mixed challenge where it is hoped that Technology Transfer Professionals make a difference. As the opportunities in Technology Transfer continues to grow in the fields of business plant simulation, real life application and sponsored research, the expectations from Technology Transfer also continue to grow. Many countries around the world have looked to the Technology Transfer environment in the United States and especially

the impact of the Bayh-Dole Act and have incorporated similar legislations in their respective jurisdictions.

Technology Transfer Professionals have a substantial engagement in taking an invention to the market. In some universities the Technology Transfer and sponsored research offices are one and the same which can help educate the external and internal constituents of the Technology Transfer ecosystem. At the University of Florida the Office of Technology Licensing emphasises on the importance of Intellectual Property to sponsored research. The University of Florida organizes a Celebration of Innovation programme to honour faculty members and appreciate the efforts of start-up entrepreneurs. Some colleges within the University have started filing patent applications and not just engaging in peer-reviewed academic publications. This can serve as a good model for universities in India to shape its own Technology Transfer policy. As start-ups, who are the beneficiaries of Technology Transfer, start to compete in the global markets it is imperative that they also communicate on a global level. The University of Florida has started a video-conferencing facility at the Florida Innovation Hub to meet this need.

The challenge to most Technology Transfer offices in the United States and North America is revenue generation from licensing as nearly 90 % of the offices do not make enough revenue to cover even office expenditure. To meet this challenge Technology Transfer offices need to look transnationally in the licensing business. The main challenges with such a global outlook are export, prosecution, liability and monetary issues.

Being cognizant of the post-Technology Transfer challenges, such as prosecution and other non-Intellectual Property issues is very important for Technology Transfer Professionals. There is a huge push by technology companies to reform the current patent system. The implications of such proposals are that both the Technology Transfer office and the investors can be made liable for patent infringements. Technology Transfer Professionals need to become aware of the possible consequences of such proposals.

Industry scouts are seeking technology developed in academic institutions and AUTM has increased the number of industry representatives at its annual meetings to facilitate interactions. AUTM has also created the Global Technology Portal where more than 20,000 new technologies have been uploaded for free on its website and also the Connect Forum where industry scouts can schedule one to one meetings with Technology Transfer Professionals at the AUTM annual meetings.

As Technology Transfer is a contact "sport" based on professional relationships to make things happen AUTM and four other Technology Transfer Organizations have created an alliance to engage in creative brainstorming for a global relationship. This is important as the resources at the local/national level are constrained. Asian countries such as Taiwan, Singapore and Malaysia have been very proactive in entering into a global alliance and currently there is an Asian chapter of AUTM which has conducted its fifth annual meeting.

After more than three decades of the Bayh-Dole Act the Technology Transfer ecosystem in the United States has developed to what it is today. Other countries can learn from this experience. In

this regard the Alliance of Technology Transfer Professionals (ATTP) can help Technology Managers in emerging markets such as the BRICS countries.

The challenge for Technology Transfer is the huge technology gap for research components between developed and developing countries. A country like India is at the top end of technology in the field of material sciences, pharmaceuticals, chemicals and automobiles and it is important that the public system has smart Technology Managers to address the technology gaps in other sectors.

## **SESSION I**

**Speaker Session: “The Art of Drafting Licensing Agreements”** 10.00-10.45 am

Richard Cahoon (BioProperty Strategic Group) (Via Videoconferencing) and R.K Gupta (LLS)

The drafting of a licensing agreement of an innovative technology is the crown jewel in the art of drafting. Each licensing agreement is unique as the technology involved is unique. Such an agreement embodies the desires of the parties quietly and efficiently and lays down a clear set of obligations and rights for both parties. A licensing agreement is the final stage of dialogue between the parties. The stages involved prior to the final licensing agreement are: Discussions, Term sheet, First Draft and Iteration.

The first stage discussions are informal like taking notes preferably done face to face. The term sheet lays out the key terms or basic elements. The elements in a licensing agreement include Definitions, Grant of rights, Fees and royalties, IP Management (Prosecution and enforcement), Reporting and Audit, Liabilities and indemnifications. The definitions are the working part of the agreement where the terms like technology, scope of rights etc. are usually defined.

There is a great deal of controversy centred on the unclear elements of definitions and licensing agreements are complicated with several working parts. Relying on a standard license template as a starting point will be of immense help. The following are some of the tips to be followed while drafting a license agreement:

- Every clause in the license template has to be understood clearly.
- Using a license template provides the comfort level necessary to be creative and to think outside the box.
- The tendency of drafting the agreement from other agreements by cut, copy and paste ought to be avoided.
- Begin with a clean copy of your template.
- Have a term sheet and other necessary documents close at hand.
- Start from the first word and progress through the document.
- In case of any doubt, ask any knowledgeable person within the organization.

There has to be an internal review mechanism while drafting the licensing agreement and the accounting people need to be consulted to read the financial terms for clarification and if necessary

review and approval from higher-ups is done. After the drafting is done, the draft copy of the agreement has to be send to the other party.

The different types of common license agreement are technology transfer agreements, know-how license agreements, franchise licensing agreements, collaborative/sponsored research license, private public partnership, joint venture, industry specific/ cross licensing agreements. In every licensing agreement, there are several mandatory clauses. The nature and terms of license has to be taken into consideration like Sole license, Exclusive license, Limited exclusive license, Non-exclusive license depending the duration of license, territory in which license has to operate as well as the field of use.

IP ownership and cost clause is one of the most important clauses in a licensing agreement. It covers the background knowledge necessary to prosecute a technology, background IP, ownership of background/ Foreground IP, as to who would bear the cost of prosecution/maintenance depending on the kind of license. It also includes the right to generate, use and exploit IP resources. In the royalties and other compensatory clause in the agreement, the upfront payments, milestones and royalties, licensing and technology transfer fees and variable royalties are included. The financial clause contains the payment terms, currency, accountancy, audit and inspection, identification of assets and liabilities, product life and market share, fair value provision etc. In tax and indemnification clauses, a minimum performance to maintain license and/or exclusivity is added.

Other important clauses include bankruptcy, exit clauses/termination/survival disputes, governing law, arbitration or renegotiation or restrictive clauses. It is always better to keep a clause for renegotiation/amendment/ flexibility in the market in order to create a win-win situation for both licensor and licensees.

## **SESSION II**

**Panel Session:** “Overcoming Infringement Landmines with Compliance to Contemporary IP Enactments” 11.15-12.15 pm

Panel Chair: Arvind Chinchure (Symbiosis International University), Panelists: Prof. Vivekanandan (MHRD IP Chair Professor, NALSAR University of Law), Ravi Bhola (K&S Partners) and Dr Ajit Kamath (Pfizer)

In the post-liberalisation era Indian companies have recognized the importance of Intellectual Property and with its emergence two important concerns have surfaced:-

- How to value intellectual property?
- How to reduce the risk of infringement during the engagement of Indian industry in cross border collaboration?

The difference between real property and intellectual property and the different roles of lawyers in both areas is that in the cases of real property litigation seems to be a plausible and lucrative path due to the ever increasing value of the property whereas in intellectual property, litigation should be undertaken as a last resort due to the short lived value of the intellectual property (a maximum of 20

years in the case of patents). Speed is a major element in the field of intellectual property for getting maximum returns in the shortest possible timeframe.

Infringement suits should be avoided in the field of IP due to the high costs, long time periods, possibility of injunctive orders, and the loss of relationships with customers who may be get dragged into the litigation. Even though the two concepts of infringement and validity are different, more often than not, in a suit for infringement the question of validity of the patent arises and if the patentee is proven to have indulged in inequitable conduct or without the duty of candour then the court may impose huge penalties. On the other hand if the invalidity claim of the alleged infringer is lost then the infringer has to pay treble damages. There is also a public interest in invalidating bad patents which can undermine policies of patent law. This public interest overrides contractual interests between the licensor and licensees of patents.

Therefore an IP lawyer has to be a good IP manager and 5 key issues to be remembered in the strategic management of IP-tech delivery are:-

- Law to be used as a tool of management v. litigation in protecting innovation
- IP is a culture and not an iron curtain
- IP is not a fixed framework
- IP is about rights and money just being one aspect of it
- IP is proprietary yet co-operation and collaboration is the key

In the industry the first step towards avoiding infringement issues is approaching the legal team and obtaining a clean chit at the stage of ideation itself as the element of containment i.e. pertaining to the receiving of confidential information having relevance to one's own product undergoing invention is always a risk. Having a proper strategy for IP Mapping will also help in reducing the risks of infringement.

The degree of sensitivity of different companies towards IP issues varies considerably. While start up companies are primarily focused on developing IP portfolios and obtaining patents as soon as possible thereby not being concerned with the Freedom To Operate (FTO) aspects, developed companies are more aware and sensitive towards the risk of infringement and also have a fair idea of the products of their contemporaries. Academic institutions are mainly focused on developing the IP and then licensing it to industry.

## **SESSION II**

**Speaker Session:** "Intellectual Property in Information Technology- Cross Sectoral Implications"  
12.15 to 1.15 pm

Ravi Bhola (K&S Partners)

The legal position in India with regard to patenting software has been derived from European law. Patenting in India is only allowed when the software has been incorporated into hardware and has a 'Technical Effect'. Technical Effect is defined as a solution to a technical problem which the invention, *as a whole*, can overcome. For instance, reducing data-access times or increasing data

processing speeds are beneficial technical effects and software incorporating these elements can be patented.

Recent cases in the United States, such as, *Alice Corp. v. CLS Bank International*, also show a general inclination to the above view. In the *Alice* case, it was held that an abstract idea for software cannot be patented and that there must be a general reference to hardware, i.e., a “transformation test” applied to show conversion of the idea towards an effective execution. A similar element of convergence can be seen in other key geographical territories as well, such as Canada and New Zealand. This convergence of Patent Law is of significance in light of the latest developments in Information Technology, which will require new understanding of the law in addressing future challenges.

One of the upcoming trends in the field of IT is the evolution of “The Internet of Things” (IOT), an eco-system that provides connectivity to all devices so that they may ‘talk’ to one another. This concept has massive applications in fields such as healthcare, industry, energy, mobility and entertainment, to name a few. A notable example is the Nest Thermostat, a creation of Nest Labs which is a smart device that can regulate temperatures at home, vis-a-vis the outside weather and thereby conserve upto 35% energy. This was recently acquired by Google for 3.1 billion dollars. Another example of the IOT is the Zip-Car, a shared car service, in which a consumer can reserve the nearest Zipcar and unlock it via his/her ‘smartphone’ or an access card. Recently it was bought by Avis for 500 million dollars.

For the IOT to work in an interoperable interface, the essential requirement is that we possess standardised technology. Consequently, this requires Standard Essential Patents (SEP). SEP implies that we agree to and set new technological standards, and technology that fulfils these criteria is patented and designated as a Standard Essential. Therefore, this technology should be available at Fair, Reasonable and Non-discriminatory (FRAND) terms to all licensees. The challenges to IOT are mainly protracted negotiations for FRAND terms, unreasonable royalty rates and issues in determining what is reasonable.

FRAND terms encourage interoperability of similar products from different machines by enabling different licensees to possess the SEP at a reasonable rate of royalty, giving due regard to their individual capacities. The movement towards FRAND terms in SEP is becoming part of IP jurisprudence, as can be seen in the recent European Union case of *Motorola Mobility v. Apple* wherein Motorola filed a civil suit for injunctive relief in relation to Apple’s use of certain patents. Apple argued that these patents were deemed SEP and it had willingly tried to purchase the same from Motorola but was unable to do so due to the exorbitant royalty rate demanded by Motorola. The Court held that abuse of dominant rights and wilfully preventing a licensee to buy an SEP had been committed on the part of Motorola and ordered the company to pay damages to Apple.

Another upcoming area of IT is Cloud Computing wherein privately owned data is stored virtually in common data-storage facilities or common infrastructure facilities. Cloud computing has become a key attribute in IT systems as it enables small-scale companies to make use of technology that ordinarily requires huge amounts of capital to own and operate.

The key issues in Cloud computing are Ownership of IP that may be generated as a result of using private data in conjunction with another entity's technology, privacy and security of data and cross-border issues.

Problems of transnational jurisdiction were highlighted in the American case of *NTP inc. v. RIM*, wherein NTP alleged that RIM infringed its systems in its Blackberry devices, including handsets, wireless technology, desktop interfaces and ISP redirectors. RIM argued that the relevant provisions of law could deal with infringement only with the United States, whereas the RIM servers were located in Canada. The Court rejected this argument by saying that the location of the 'beneficial use and function' as well as the assembly of the products was in the United States and thus, the relevant sections of US Patent law dealing with patent infringement were applicable.

A convergence of patent laws globally, as well as a coordinated effort to standardise technology and associated processes should help bring some certainty to the issues yet to resolved in the domain of IT and IP.

### **SESSION III**

**Panel Discussion: "Bioparks: Way to enhance enterprise value"** 2.00-3.00 pm

Panel Chair: Deepanwita Chattopadhyay (IKP), Panelists: Taslimarif Saiyed (C-CAMP), Jane Muir (President, AUTM), Radha Rangarajan (Vitas Pharma) and Kiran Sharma (PTTC)

Business Incubators are one of the greatest innovations of the 20<sup>th</sup> century to support fledging entrepreneurs. The key factors for incubators are knowledge, infrastructure, people and technology. In India incubators are a relatively new concept with little private funding for incubators. As the success of incubators depends on the managers who run them incubator managers have to meet the challenge of encouraging persons from diverse backgrounds such as academia to come to incubators to work with entrepreneurs.

Funding is a big challenge for the incubators and creating a portfolio fund may help in meeting this challenge to a certain extent. Start ups which have been nurtured in incubators for 18-24 months need post-incubator management to meet the challenges of the market thereafter. For example the upcoming Biotech Park in South Bangalore will help start ups to evolve out of the incubators. Mentoring from experienced entrepreneurs will also help in this transitional process.

Platform for Translational Research on Transgenic Crops (PTTC), launched under the aegis of The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the Department of Biotechnology (DBT), is involved in agricultural and natural resources management and have studied the advantages of business incubators. Agribusiness incubators which were started around 12 years by PTTC are distinct from other incubator models as they are more risky, low profile and do not involve comparatively high end technology. PTTC has shifted its focus from capitalising on existing big private companies investing in Science Parks to Agribusiness Innovation Platform with four focus areas- agribusiness, incubators, innovations and partnerships, and knowledge. Currently there are 23 business incubators in the agricultural sector in India. In the current Five Year Plan it is proposed to start another 50 incubators in the agricultural sector dealing with all aspects of agriculture, thereby enabling technology and human resources to move from one incubator to another incubator.

In the Biotechnology sector, bioclusters have been formed in association with NCBS (National Centre for Biological Sciences), the Institute for Stem Cell Biology and Regenerative Medicine (INSTEM) and Centre for Cellular and Molecular Platforms (C-CAMP). Even though there has been little funding more than a 1000 scientific studies, 60 publications and 800 trained personnel have come out of these bioclusters in the last three years.

To cite other examples from the industry Bioseed India Pvt. Ltd. with no prior experience in the field of biotechnology has become on par with other competitors due to guidance from PTTC in infrastructural aspects. Cellworks which work on cell signalling pathways has created a spinoff to re-engineer bacteria for healthcare while Sea6 is working on biofuels sourced from sea algae in collaboration with C-CAMP.

Vitas Pharma is involved in manufacturing novel drugs to combat multi-drug resistance. There is a challenge of translating discoveries in academia to viable products due to lack of adequate laboratories and other components in the ecosystem. For an entrepreneur the crucial factors are therefore capital, location and professional support. Vitas Pharma has focussed on Hyderabad due to the presence of excellent laboratory facilities and library resources at the University of Hyderabad and the IKP Knowledge Park. As a result research takes place at a faster pace through the incubators which have played a huge role in formulating 4 pre-clinical programmes, 2 academic collaborations, 1 basic science and 1 diagnostic programme.

There is a real platform gap between academia and industry with little or no physical connectivity. Incubator programmes such as the Biotechnology Innovation Grant (BIG) focus on mentoring on the business and science aspects of incubators so that entrepreneurs go to the next level in their life cycles.

The Florida Innovation Hub has observed that 80-90 % of start-ups fail eventually due to lack of funding and other challenges but 87 % of start-ups from business incubators are still surviving. Failure is a process which every entrepreneur has to learn. It is therefore important that entrepreneurial companies develop an exit strategy at the very beginning of their work plans for the projects undertaken by them.

The University of Florida has attached the Office of Technology Licensing with the Florida Innovation Hub to bridge invaluable interactions between faculty, entrepreneurs and investors. There are also service providers such as Intellectual Property Firms, Attorney Firms and Investment Firms who contribute pro bono advice to the Innovation Hub for 8 hours every month. Since the Innovation Hub receives Federal funding to the tune of approximately 8.2 million dollars its success is measured by two criteria- job creation and private sector investments.

Technology has a long gestation period to reach the market and incubators help reduce this period substantially. When all associations in an ecosystem are leveraged scientists and entrepreneurs benefit mutually. To ensure the same Technology Licensing and Intellectual Property Offices and incubators should work together.

An association of incubators in India is urgently needed to meet the challenges of the evolving industry. A network of 6 incubators in Hyderabad has helped in meeting these challenges in the agricultural sector.