



**INTELLECTUAL PROPERTY, REGULATION AND COMPETITION:
STANDARDS, TECH-LICENSING AND GLOBAL VALUE CHAINS IN THE HI-TECH
INDUSTRIES**

**ITD'S HIGH LEVEL POLICY DIALOGUE ON TECHNOLOGY AND INNOVATION
POLICIES IN THE AGE OF GVC (BANGKOK)- 10TH TO 12TH JUNE, 2019**

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 - ❖ Quality Dimension; Quantity Dimension; Litigation Dimension
- ❖ **The role and limits of Intellectual Property, Regulation and Competition Law and Policy**
- ❖ **Case studies from India: Telecom, Agri-Biotech and Renewable (Solar PV)]**
 - ❖ Licensing of Standard-Essential Patents (SEPs)
 - ❖ Licensing of BT Cotton Technology
- ❖ **Tentative Recommendations**

THE CONTEXT: 4IR

- ❖ **4th industrial revolution-** convergence of physical, digital, and biological spheres.
 - Will be driven by- 5G technologies, internet of things, industrial internet of things, robotics, artificial intelligence, autonomous vehicles, additive manufacturing (3d technologies) etc.
- ❖ Intellectual Property rights will be globally traded more than ever in the form of widespread licensing in certain areas of technology
- ❖ Comparative advantage lies in innovation and IP, more than ever!
- ❖ **World Trade Report (2018)-**
 - “The wide adoption of digital technologiesredefines intellectual property rights in trade. Trade in information technology products has tripled in the past two decades, reaching US\$ 1.6 trillion in 2016”.
 - “Regulation of intellectual property rights, data flows, and privacy as well as the quality of digital infrastructure are likely to emerge as new sources of comparative advantage”.
- ❖ **Current IP landscape provides a lot of flexibility** in the new context of 4th industrial revolution

INTELLECTUAL PROPERTY AND GVCs

- ❖ Progressive rise of trade to GDP output seen over last few decades- rise of GVCs through trade in intellectual capital or technology licensing (WIPO, 2017)
- ❖ Intangible assets shape GVCs in at least , two ways (WIPO, 2017)
 - ❖ Use of IP licensing to transfer knowledge from one location to other thus providing impetus to GVCs
 - ❖ IP (technology, design and branding) determine success in the marketplace and value is distributed within GVCs
- ❖ Some facts on GVCs and IP (Chen, 2017):
 - ❖ The intangibles share averaged 30.4 percent throughout 2004 to 2014), almost double the share for tangibles.
 - ❖ Interestingly, it rose from 27.8 percent in 2000 to 31.9 percent in 2007, but has stagnated since then.
 - ❖ Overall income from intangibles in the 19 manufacturing industries increased by 75 percent during the same period in real terms.
 - ❖ It amounted to **5.9 trillion United States dollars** (USD) in 2014.
 - ❖ The intangible have more value capture when compared to tangibles (labour is still relatively high)
 - ❖ Computer, electronics and optical products- 31.3 (IT) and 18.6 (T)
 - ❖ IT value capture for petroleum products, chemicals and pharmaceuticals still very high

Location of activities in the global value chain of the smartphone industry

Activity	Standard setting	R&D, design, sourcing	Development and engineering	Manufacture of key components	Production/ final assembly
Apple	International standard-setting organizations	U.S.	U.S./Taiwan (Province of China)	U.S./Japan/Republic of Korea/Taiwan (Province of China)/China	China, India (as of 2017)
Samsung	International standard-setting organizations	Republic of Korea	Republic of Korea	Republic of Korea/ Japan/U.S./China	Republic of Korea, Viet Nam, China, India, Brazil, Indonesia
Huawei	International standard-setting organizations	China	China	China/Republic of Korea	China, India

COMPARING CHINA AND INDIA IN GVCS

- ❖ **Smartphones:** India's Phased-Manufacturing Programme (PMP) has been able to induce firms to "Make-in-India" by progressive increase in tariffs
 - ❖ Second largest producer of mobile phones: annual mobile phone production increased from 3 million devices in 2014 to 11 million devices in 2017. India now accounts for 11 percent of global mobile production, which was only 3 percent in 2014.
 - ❖ However, low in value capture- key components imported from China and assembled in India
 - ❖ Value addition in India was 5.6 per cent. Vietnam has a value-addition of 35 per cent, Brazil 17 per cent while China has more than 70 per cent.
 - ❖ Chinese firms sources all its components internally; some firms are also vertically integrated
 - ❖ **Japan launched dispute against India (May 2019) on import tariffs – that it violates India's commitments under GATT's schedule of concessions**

COMPARING CHINA AND INDIA IN GVCS

- ❖ **Solar:** China is now the top supplying economy in all upstream and midstream PV market segments (WIPO, 2017). China largely acquired the position thorough acquisition and scaling up.
- ❖ India's Jawaharlal Nehru National Solar Mission (JNNSM, 2010) - target of grid connected solar power capacity of 20,000 MW by 2022
- ❖ India remains heavily dependent on imported solar PV technology, with almost 84 percent of the solar panels being imported during FY 2016–17
- ❖ In three phases (first phase upto 2012-13, second phase from 2013 to 2017 and the third phase from 2017 to 2022).
- ❖ Domestic Content Requirement (DCR) and Open categories: Solar Power Developers (SPDs) are required to procure solar cells/modules by complying DCR for a part of their installed capacity
- ❖ **India lost the WTO dispute on DCR and has now brought its DCR regulations in compliance after retaliation was threatened**
 - ❖ GATT Art. III:4 and TRIMS Art 2.1 (national treatment)
 - ❖ GATT Art. III:8(a) (government procurement derogation)
 - ❖ GATT Art. XX(d) (general exceptions – necessary to secure compliance with laws)
 - ❖ GATT Art. XX(j) (general exceptions – essential to acquisition or distribution of products in general or local short supply)

IP LICENSING DYNAMICS

❖ Pervasive Technologies

- ❖ Modularity of system innovations: Standardisation leading to General Purpose Technologies and Enabling Technologies (for e.g. 5G)
- ❖ Increase in SEPs and its role in standardisation (SEPs are technologies for which there are no no-infringing alternatives)
- ❖ IP and Business Models diversity in Network Industries
- ❖ Open v. Proprietary (markets select innovation models between commons approach or IP intensive approach)

❖ IP licensing in industries requiring active know-how

- ❖ Difficulty in imitation in certain area of pharma biotech and agri biotech
- ❖ regulatory barriers can make it difficult for imitators to enter

❖ Rise of distributed manufacturing, loss of labour as a comparative advantage

- ❖ “reshoring” in the context of smart manufacturing
- ❖ Liability of infringement by 3D machines itself is suspect under IP laws since actual knowledge of infringement does not exist as these machines may also have non-infringing uses
- ❖ Licensing models will have to change considering widespread infringement

PATENT SYSTEM: CHALLENGES

- **Patent quality debate**

- More patent invalidated when challenged – questionable patents and indeterminacy arguments
- Failure of notice function of the patent system leading to inadvertent infringement (Bessen and Meurer: Patent Failure, Princeton (2008))
- Probabilistic patents (Lemley 2005)

- **Patent quantity debate**

- Anti-commons effects: patent thickets (Heller and Eisenberg 1998)
- Patent holdup (value attributable due to higher switch over costs) (Lemley and Shapiro 2007)
- Royalty stacking (double marginalisation effects) (Lemley and Shapiro 2007)

- **Excessive Litigation debate**

- Role of Non- Practising Entities (NPEs) and Patent Assertion Entities (PAEs) (Lemley, Is Patent Enforcement Efficient, 2018)
- Nuisance Litigation for extracting settlement value (James Bessen & Michael Meurer, The Direct Costs from NPE Disputes, CORNELL L. REV. (2014))

BUT IS THERE EVIDENCE?

- **Patent Quality**

- “category mistake” (Adam Mossoff, *Florida Law Review* 2013)

- **Anti-commons**

- Markets self-correct- lack of systemic evidence on anti-commons (Barnett, Jonathan, *The Anti-Commons Revisited*, *Harvard Journal of Law and Technology*, (2015))

- **Patent holdup and royalty stacking**

- “the theory is based on three sequential fallacies (Alexander Galetovic Stephen Haber *Journal of Competition Law & Economics* 2017)
- No empirical evidence exists in the context of SEPs (2015 Galetovic and Haber)

- **NPEs and PAEs**

- Different kinds of NPEs and PAEs may have different effects and contribution to the market Christopher A. Cotropia, Jay P. Kesan & David L. Schwartz, *Unpacking Patent Assertion Entities (PAEs)* *Minnesota Law Rev.* 2014)
- Arriving at the cost of NPE litigation has been criticised (Schwartz, David L. and Kesan, Jay P., *Analyzing the Role of Non-Practicing Entities in the Patent System*, *Cornell Law Review* (2014);

ROLE AND LIMITS OF IP, REGULATION AND COMPETITION

❖ IP as Private Ordering or Public Ordering?

- ❖ Knowledge which IP laws protect is a public good- non-rivalrous in consumption and non-excludable
- ❖ IP as a private property right with public function?
- ❖ Competitive safety valves within the IP system- Patentability criteria, subject-matter exclusions, limited exceptions, exhaustion of rights etc.)

❖ Role and Limits of Competition Law and Policy

- ❖ IP is treated like any other property subject to its specificities
- ❖ IP is a legal monopoly but not an economic monopoly: NO presumption of market power
- ❖ IP licensing is generally pro-competitive

❖ Certainty and Predictability in Regulation (ex-ante) and (ex-post)

- ❖ Ex-ante restrictions on IP licensing terms and conditions
- ❖ Compulsory licences and other uses without authorisation by paying a compensation
- ❖ Ex-post Price controls on patented inputs and end products or control of royalty flows

❖ Compliance with International IP Regime: TRIPS, TRIPS-Plus and IIAs

- ❖ Remedial regime for IP provides flexibility (Injunctions and Damages)
- ❖ Cases where use without authorisation can be allowed (Compulsory licences, Government use etc.)
- ❖ Measures like Price Controls / Control on royalty flows may be 'non-violation' currently not subject to WTO DS.

CASE STUDY 1: LICENSING OF SEPS

- ❖ The amorphous nature of FRAND commitments
 - ❖ Induces downstream companies to adopt standards
 - ❖ Licensing is not practised at the middle of the supply chain but towards the end where combined value in the final product can be captured
- ❖ SEPs licensing in the shadow of FRAND can be extremely contentious and litigative
 - ❖ NDAs and comparative royalty rates
 - ❖ Royalty base (SSPPU v. EMVR)
 - ❖ Non-price terms and conditions
 - ❖ Widespread infringement
 - ❖ Patent holdout considerations
- ❖ Explosion in FRAND litigation in India during the last decade
 - ❖ Injunctions (Ex-parte, ad-interim)
 - ❖ Interim royalties granted
- ❖ Pending investigations by the Competition Commission of India for abuse of dominance
 - ❖ NDAs (discriminatory royalty rates)
 - ❖ Unfair royalty base
 - ❖ Unfair non-price terms and conditions (arbitration and applicable law)
- ❖ Ministry of Commerce and TRAI: Emphasise the need for a solution (2016) and (2017)

CASE STUDY 2: LICENSING IN AGRI-BIOTECH

- ❖ Nature of BT technology and its use in cotton hybrids (non-vertical integration through wide-spread licensing)
- ❖ Monsanto and MMBL in India- Licensing 40 downstream hybrid companies
- ❖ Patent infringement and revocation
 - ❖ Subject matter scope
 - ❖ Overlap with Plant Variety Legislation
 - ❖ Revoked without trial: Trial ordered by the Supreme Court
 - ❖ currently existing contracts are restored
- ❖ Ministry of Commerce and Industry (DPIIT): Showcase for revocation of patents in public interest.
- ❖ CCI Investigations against Monsanto
 - ❖ The termination conditions are found to be excessively harsh and do not appear to be reasonable as may be necessary for protecting any of the IPR rights
 - ❖ the agreements have the effect of foreclosing competition in the upstream Bt Technology market which is characterised by high entry barriers.
 - ❖ charging of trait value payable on the basis of MRP of the seed packet apparently has no economic justification
 - ❖ whether the group entities are being subject to similar pricing and stringent sub-license agreements
- ❖ Price Controls on patented inputs
 - ❖ State price controls since 2006
 - ❖ Central Price controls since 2015 (royalties slashes by 72% and depreciates every year.)

TENTATIVE RECOMMENDATIONS

- ❖ **Conceptual Distinctions to be clearly made between several instrumentalities**
- ❖ Private ordering – contractual restrictions and limitations
- ❖ Quasi- Private ordering- Patent remedies (injunctions and apportioning damages)
- ❖ Quasi- Public ordering- Competition Law (limitations in the context of IP important- can't be purely used for industrial policy- competitive process v. competitive outcomes)
- ❖ Public ordering- regulatory mechanism – certainty and predictability important.



THANK YOU

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