

Technology Transfer and Scientific Collaboration

RIS, 22 Feb 2019
 Dr. Bhaskar Balakrishnan
 Science Diplomacy Fellow and former
 Ambassador of India

Technology Transfer concepts

- The process of transferring scientific knowledge for development and commercialization. The process involves:
- Identifying new technologies
- Protecting technologies (patents and copyrights or trade secrets/know how)
- Development and commercialization strategies such as marketing and licensing (to existing companies or creating new companies) based on the technology

Scientific Collaboration

- Collaborating under framework agreements, bilateral or multilateral (India-US, Horizon 2030, etc)- institutional level collaboration. Calls for R & D proposals.
- Collaboration through large, multinational science projects – CERN, ITER, ISS, LIGO, ICGEB, ISA, etc.
- Cost and benefit sharing arrangements, IPR benefits, capacity building aspects.
- Mobility of researchers across borders – visa, taxation, etc.
- Security aspects – countries and technology areas.

Framework agreements

- Bilateral S & T cooperation agreements – basic structure – Joint Committee, work programme, duration and extension.
- Institutional level arrangements for R & D
- Cost sharing
- IPR and benefit sharing, NDAs
- Horizon 2030 and Horizon Europe (2021-27) – role of non-EU countries, priority areas, rules for collaborative projects- funding levels – Brexit impact
- Large multilateral projects – CERN, ISS, ISA, etc. – agreements, membership and governance.

India- S & T cooperation

- Bilateral agreements with 83 countries, 44 active .
- Strong cooperation with Australia, Canada, EU, France, Germany, Israel, Japan, Russia, UK, USA.
- Cooperation with Africa through India-Africa S & T initiative.
- Bilateral centres with France, Germany, USA

India-ASEAN S & T cooperation

- ASEAN-India Working Group (1996) , AI Science and Technology Fund (2008, of \$ 5 mn).
- NRDC(India) to develop ASEAN-India Technology Bank (2018) to promote Technology Transfer and business.
- ASEAN-India Research and Training Fellowships
- ASEAN-India Research and Development Programme
- ASEAN-India Innovation Platform (2015) covers social, research, product and industry innovation.

BRICS S&T cooperation

- Leaders agreed to use experiences and complementarities in STI and co-generate new knowledge and innovative products, services and processes.
- MOU on STI Cooperation (2015) covers cooperation in diverse S & T areas.
- STI Framework Programme aims to support excellent research on priority areas.
- The Young Scientist Forum Secretariat is a platform to network young creative talent. It holds an annual BRICS Young Scientists Conclave.

ToT ecosystem

- Part of the larger ecosystem for knowledge, social and economic activities.
- Universities and research institutions which generate knowledge.
- Businesses, large and small.
- Governments and public institutions.
- Regulatory agencies
- Across borders – entities in other ecosystems
- Formal and informal arrangements.
- Open and/or covert activities.
- Financing entities.
- Civil society.

R & D commercialization factors

- Generation of knowledge in R & D institutions.
- Conditions attached by funding agencies.
- Commercial assessment and development.
- IPR protection
- Licensing of technology
- Business agreements
- Financing agencies
- Regulatory aspects
- Market development.
- Civil society and consumers.

TT mechanisms

- Joint ventures and partnerships to share both the risks and rewards of bringing new technologies to market.
- R & D spin-offs, may be used where the host organization does not have the necessary will, resources or skills to develop a new technology.
- Raising of venture capital (VC) as a means of funding the development in return for equity stake.
- Website based promotion of offered technologies and related projects

SDGs and TT

- Technology is vital for many of the SDGs
- Technology Facilitation Mechanism (TFM) set up to help achieve SDGs as a three layer system.
- UN Interagency Task Force
- Multi-stakeholder Forum meets each year (May-June)
- Online Technology sharing platform – implemented so far only as a pilot project for LDCs/
- Good scope for S-S cooperation in sharing of Technology for SDGs

Supporting mechanisms

- Support from government and other agencies
- Business incubators – provide a wide variety of services and facilitate business startup.
- Available for a limited duration – around 3 years, depends on type of business and product lifecycles.
- Networks of incubators to share information and best practices.

Some Common BI services

- Help with business basics
- Networking activities
- Marketing assistance
- Market Research
- High-speed Internet access
- Help with accounting/financial management
- Access to bank loans, loan funds and guarantee programs
- Help with presentation skills
- Links to higher education resources
- Links to strategic partners
- Access to angel investors or venture capital
- Comprehensive business training programs
- Advisory boards and mentors
- Management team identification
- Help with business etiquette
- Technology commercialization assistance
- Help with regulatory compliance
- Intellectual property management

Technology Transfer agreements

- Critical role in Technology Transfer
- Contract between a transferor and a transferee, with the transferor selling, assigning, licensing, or otherwise transferring a particular process or product, often patented, or know how, to the transferee.
- Governed by applicable contract and patent law.
- May be licensing, sale(assignment), or joint venture.
- Transfer may be of IPR (patent, copyright, trade mark) or know how or trade secrets

TT - Key aspects

- Access to some IP rights
- Nature of rights – scope, duration, territory
- Protection of IPRs –confidentiality, penalties, etc.
- Compensation – royalty, equity, product share, etc. – takes into account taxation issues.
- Restrictions – markets, product modifications, etc.
- Compulsory licensing in the public interest.
- Dispute resolution – applicable law, forum, process, etc
- Relative bargaining power of parties in negotiations.

Restrictions associated with TT

- Imposed by the transferor on the transferee, may be in conflict with competition law in either territory.
- Examples of Restrictive Business Practices (RBPs) -obliging a licensee to accept certain products or services in addition to the proprietary technology (tie-in, bundling), prohibiting the licensee from dealing with certain enterprises, attempting to fix the prices of products incorporating the licensed technology, territorial restrictions, cross licensing and patent pooling
- Restrictions due to national security, public health, consumer protection, etc. Registration or approval processes, or regulations that restrict the dealing with certain technologies for security or other reasons.

Technology Controls by governments

- Dual use technology controls- NSG, Australia Group, Wassenaar Arrangement, MTCR. – some are connected with Treaties such as NPT, CWC , some are informal
- National export controls – US technology exports may require government approvals
- US/China dispute over alleged theft of technology.
- Concern over leakage of WMD related technology to non state actors

Motives for licencing

- Licencing-in(receiving) and licencing-out(transferring) technology
- Use or adapt a technological solution already developed rather than invest in R & D
- Get income from licencing technology rather than invest in product development in a specific market. Open up new markets.
- Transferor may wish to exercise controls over use of technology.
- Transferee wants assurance of performance and product guarantees , access to improvements, technical services, etc.
- Long term relationship between the firms involved.

Motives for sale(assignment)

- Transferor does not want to invest effort in development activities
- Wants early and maximum up front revenues.
- Does not want to assume further obligations on products, processes, guarantees, etc.
- One time transaction between firms, no continuing relationship.
- Used when the technology is relatively simple to apply and is stable, eg software (B2C)

TT agreements

- Subject matter should be clear and precise
- Define confidential information, protection measures, liability for accidental disclosure, duration of confidentiality, and exceptions
- Licenced rights – exclusivity, duration, territory, improvements, field of use, sub-licencing, etc.
- Commercial and financial terms- royalties, lump sums, events, performance or time specific, inflation adjustment, financial administration, infringements, product liability, etc.
- General terms -warranties, specific licensor and licensee obligations, waiver, force majeure, dispute resolution, expiration/renewal/termination, conformity with government policies, etc.

TT and Indian competition policxy

- TT agreements which lead to an abuse of a market position by imposing unreasonable conditions are considered as anticompetitive. Examples –
- Patent Pooling wherein two or more companies come together and cross license the technology relating to a particular technology to each other so as to restrict others to acquire it.
- Tie in arrangements to tie a product with other product which is patented so that the acquirer has to get the other product also from the patentee.
- Prohibiting licensee to use technology from rival company.
- Prohibiting licensee from challenging validity of intellectual property rights.
- Price-fixation for the licensee to sell the licensed product, etc.
- Some of arrangements described above may be held as anti competitive by the Competition Commission of India and may be voided.

References

- WIPO: Exchanging Value – Negotiating Technology Licensing Arrangements- a training manual, WIPO, 2010,
http://www.wipo.int/edocs/pubdocs/en/licensing/906/wipo_pub_906.pdf

Thank you