

# Regional Workshop on New Paradigm in Technology Transfer and Commercialization

8-10 July 2019 • Ghaziabad, India

## Collaboration and Knowledge Networks for Promoting Technology Transfer and Commercialization

**Satyabrata Sahu, Ph.D.**

Coordinator – Technology Intelligence

Asian and Pacific Centre for Transfer of Technology (APCTT) of the

United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP) in New Delhi, India



---

# Outline

- Technology networking and collaboration – The Global mandate
- University-Industry collaboration and networking
- Knowledge networks for technology cooperation
- APCTT's regional networks and platforms
- Concluding remarks

# The Global Mandate

➤ **Science, Technology and Innovation** are the means to achieve **Sustainable Development Goals**



- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



- Strengthen the means of implementation and revitalize the **global partnership** for sustainable development

# SDG 17 Targets - Technology

**17.6** North-South, South-South and triangular regional and international cooperation; Knowledge sharing on mutually agreed terms; **Global technology facilitation mechanism**

**17.7** Development, transfer, dissemination and diffusion of ESTs to developing countries

**17.8** Technology bank for least developed countries

---

# Technology Facilitation Mechanism

- Support implementation of SDGs
- Facilitate multi-stakeholder collaboration and partnerships
- Sharing of information, experiences, best practices and policy advice among Member States, civil society, the private sector, the scientific community, United Nations entities and other stakeholders
- Global online knowledge platform

# TFM Online Platform

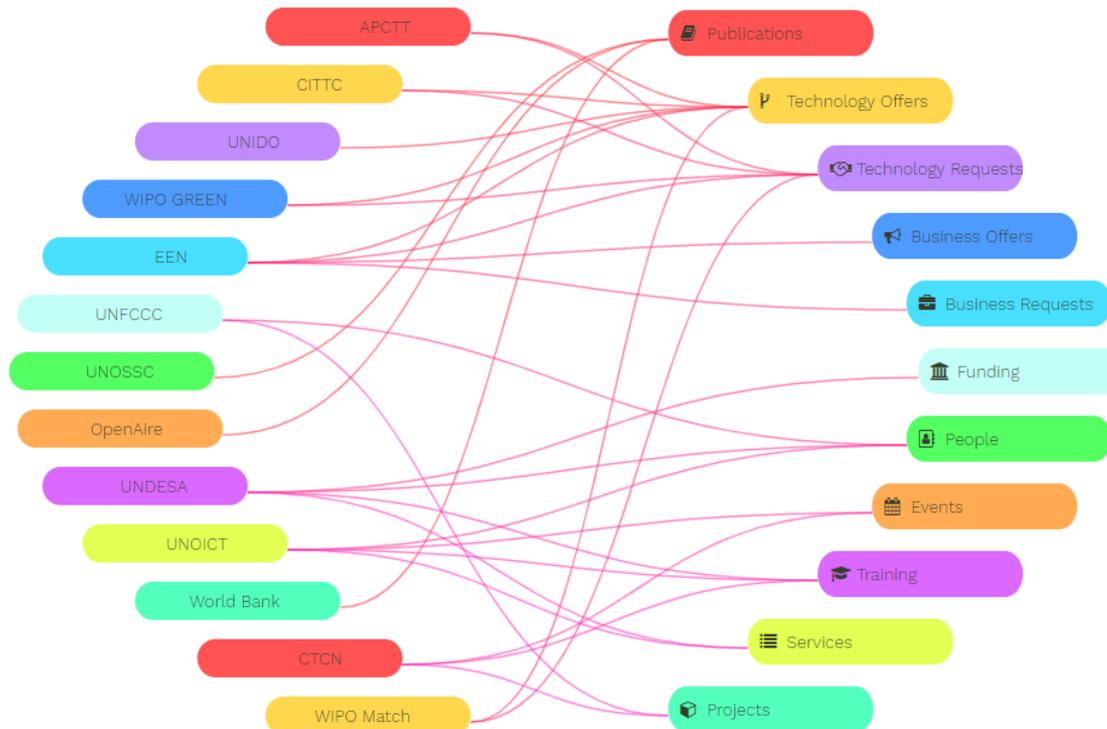
<http://ec2-18-208-31-215.compute-1.amazonaws.com/>



If you would like to request or offer an opportunity, let us know and we will forward it to our network members

Make a request or offer

Demo



# Collaboration is crucial for Sustainable Technologies

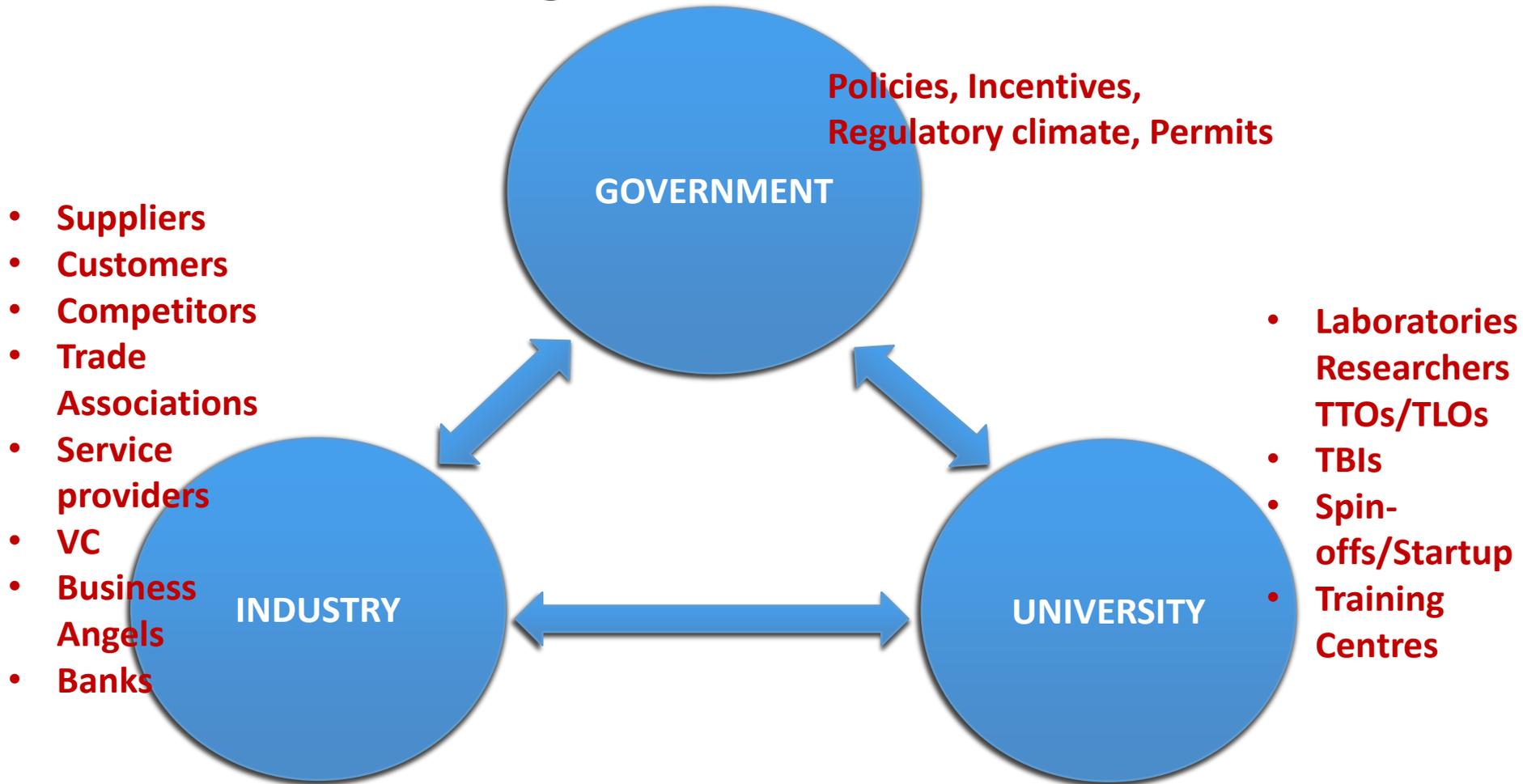
- Technology to meet **economic, social and environmental objectives**
- Sustainable technological **solutions for local problems**
- Emphasis on **green technologies**
- **Affordability and accessibility** of technologies
- **Collaborative** innovation

# Low cost and affordable water purification Nanotech-based solution in the Philippines

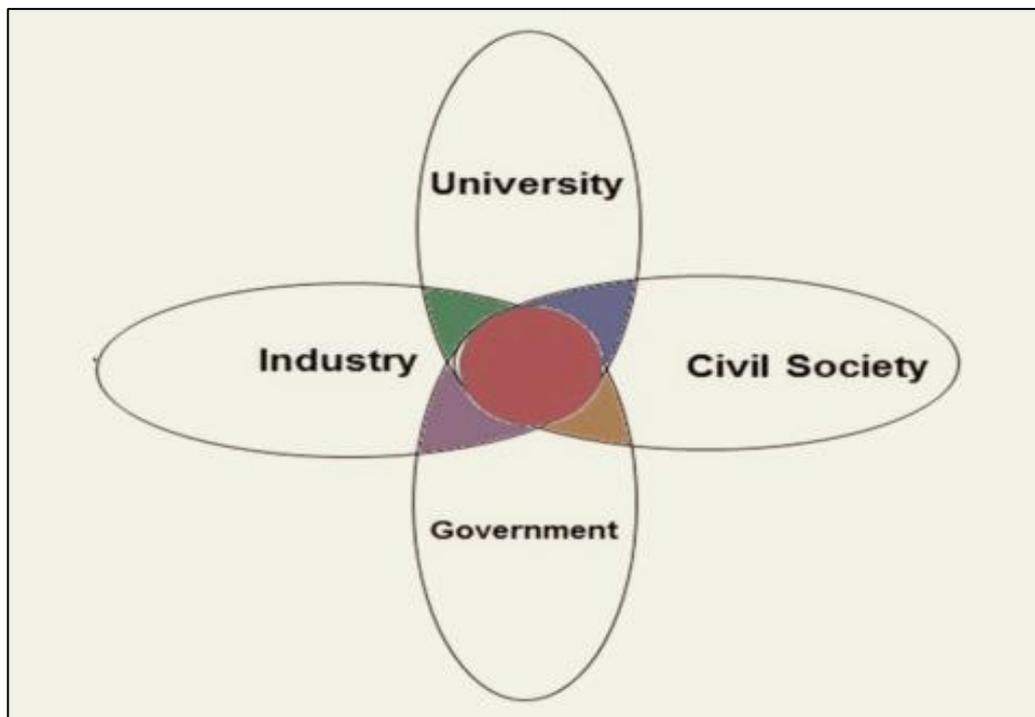


- Developed by Industrial Technology Development Institute (ITDI) of Department of Science and Technology (DOST), Philippines
- Nanotech-based Ceramic water filter coated with an anti-microbial agent that can substitute the chlorination process for purifying water
- Low cost, affordable, widely deployed, especially in the far flung areas

# Networking in the National Context

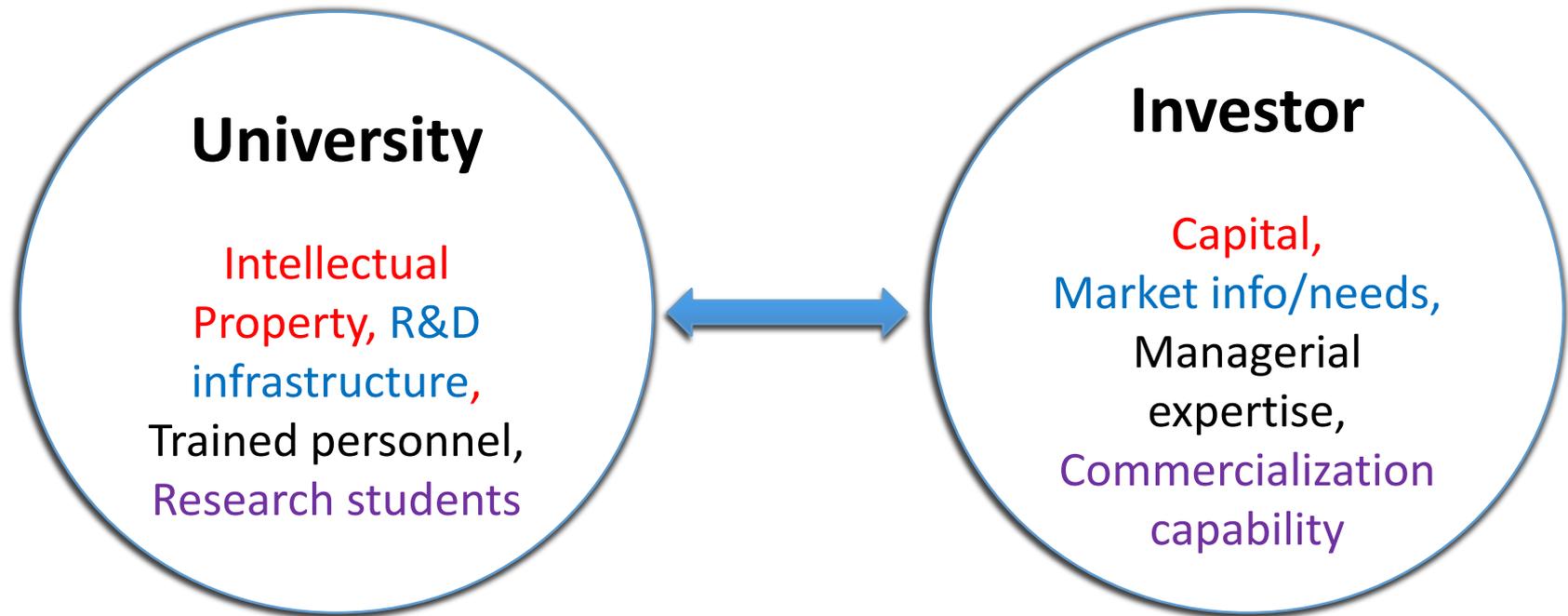


# Collaboration with Civil Society



*Source: Kolehmainen et al., 2016*

# University – Industry Context



**Stanford, Purdue, MIT and Cambridge** have been particularly successful in establishing linkages with industry for commercializing research and nurturing start-ups.

# Understanding Investors' Needs

Ventures with new patents could be **capital-intensive**

Investments may have **long payback period**

**Clear ownership of IP**

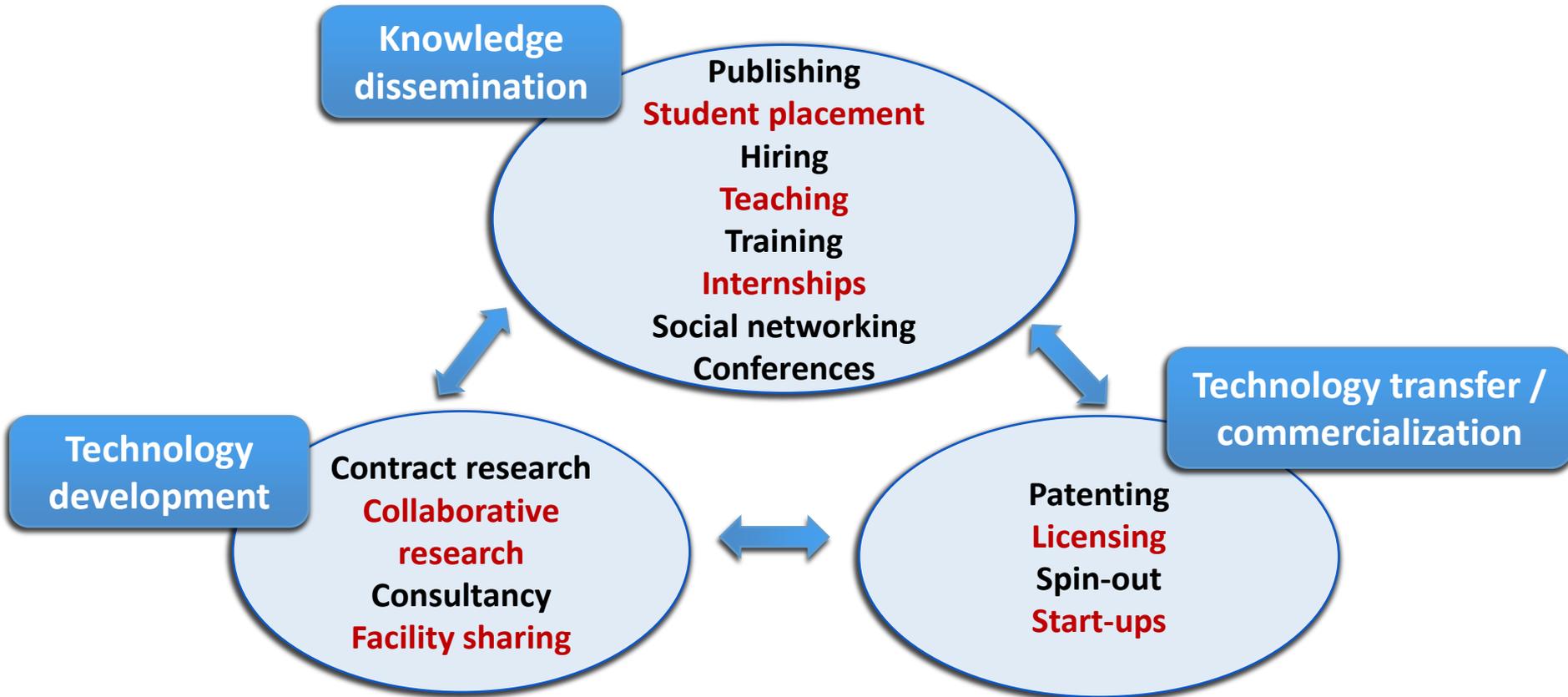
**Centrality of patents** in the industry

**Industrial application or utility**

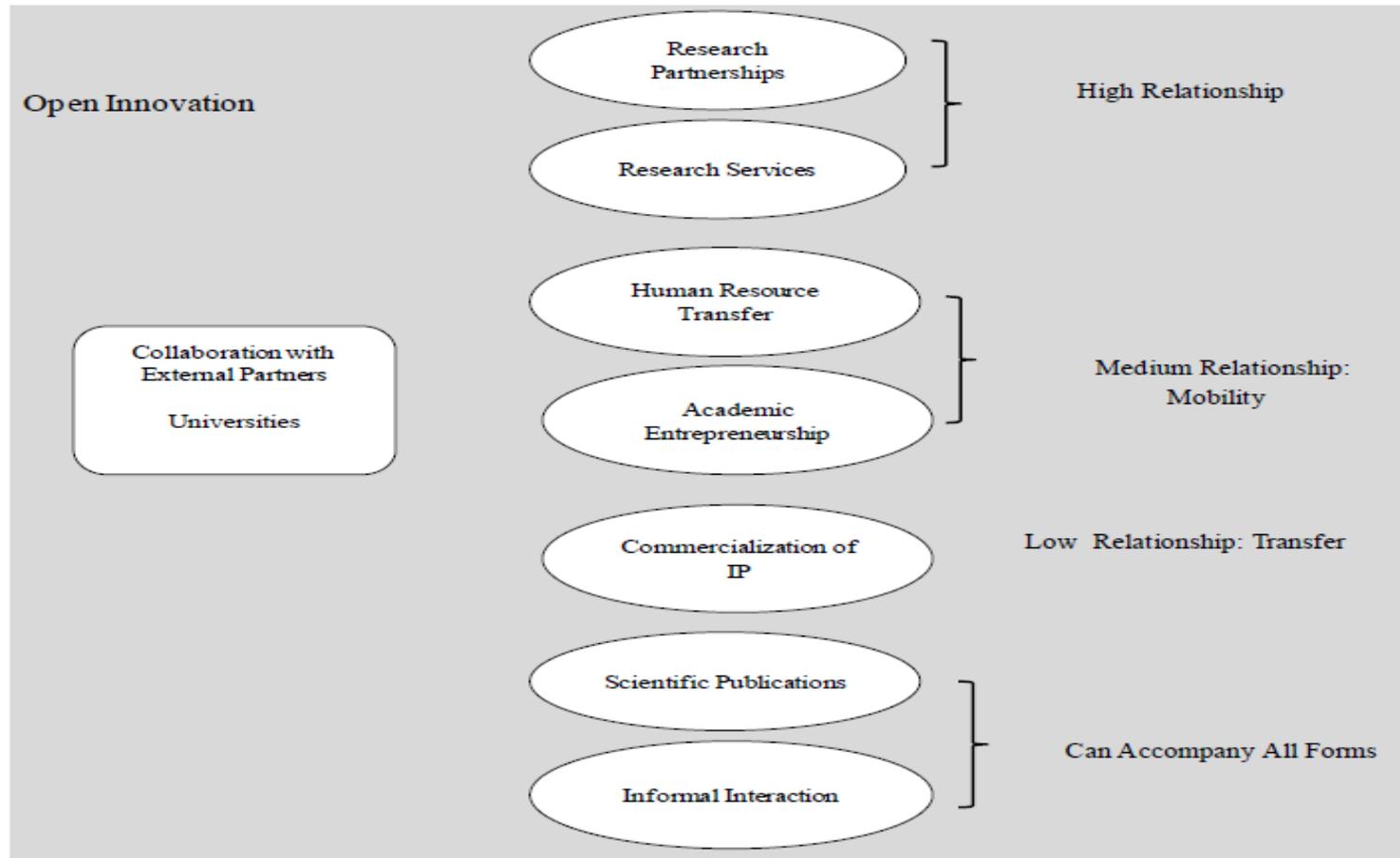
**Freedom to operate** without any IP infringement

Conduct thorough **due diligence** prior to investing

# University-Industry Partnerships



# University-Industry Collaboration - MIT Case Study



CIRRELT, 2015-22

---

# Business Orientated Faculty

Command a position in the university hierarchy

Strong publications and citation records

Engaged beyond research and teaching

Possess business education and experience

Display qualities of a role model

# Knowledge Networks for Technology Transfer and Commercialization

- ❑ **Market place** for technology and business cooperation
- ❑ **ICT-driven** for seamless access to valuable data and technological information
- ❑ **Cost effective** technology sourcing and match-making
- ❑ Facilitate **linking students/faculty with industry** to undertake industry-driven projects
- ❑ **Link multiple institutions**  
Universities, R&D laboratories, industry, technology promotion institutions, policy makers, industry, venture capital agencies, business angels, govt. funding agencies

# Regional Technology Cooperation

## APCTT strategy

- Promote **North – South, South – South, Triangular** regional and international cooperation
- Enhance knowledge sharing, **strengthen National Innovation Systems (NIS) and technology transfer capacity**
- Promote development, transfer, dissemination and diffusion of **environmentally sound technologies (ESTs)** in member countries
- Harness **new and emerging technologies** that have the transformative potential for helping countries to achieve SDGs

# APCTT's Networks and Platforms



Asia-Pacific Online NIS Resource Centre  
<http://apctt.org/nis/>



Technology4SME



Technology Intelligence  
<http://www.techmonitor.net>



Renewable Energy Technology Bank

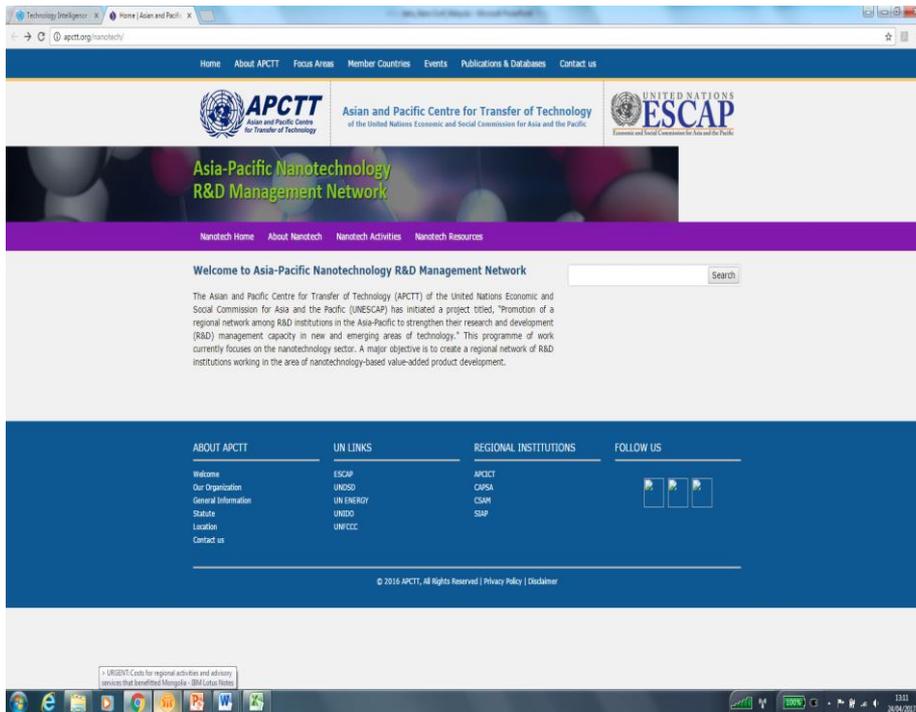


Asia-Pacific Nanotechnology  
R&D Management Network  
<http://apctt.org/nanotech/>



# Asia-Pacific Nanotechnology R&D Management Network

<http://apctt.org/nanotech/>



## Focus:

- Nanotech-based value added products
- Capacity building in R&D management
- Sharing of information, experience and best practices
- IP protection
- Commercialization of R&D results
- Nano-safety
- Manual on nanotech R&D management

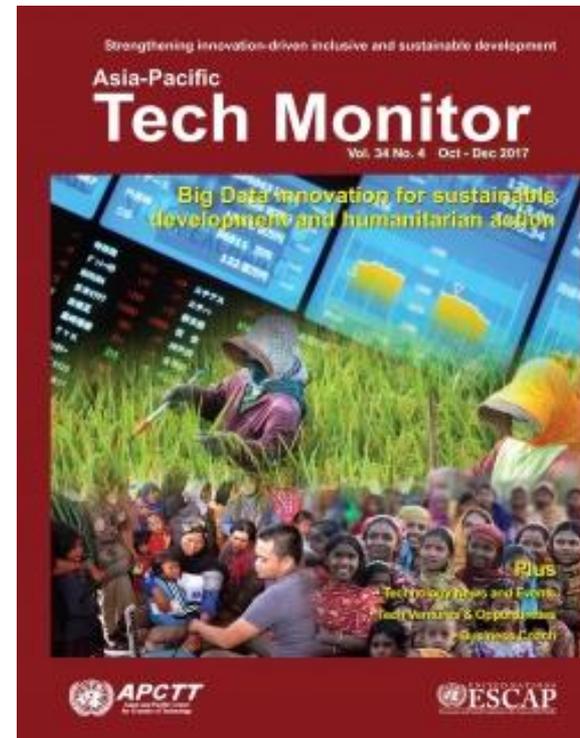
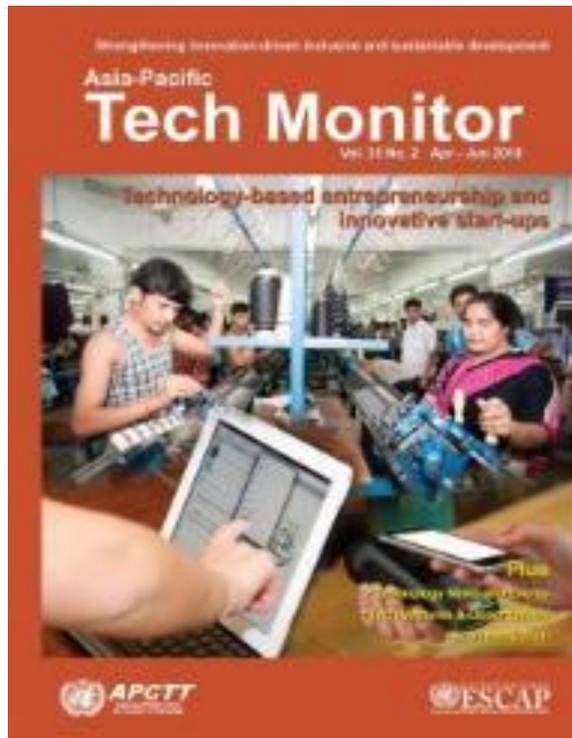
# Nanotech Network – Knowledge Products

## Manual on Critical Issues in Nanotechnology R&D Management: An Asia-Pacific Perspective

- **Nano-safety, Standardization, and Certification**
- **Protection and Valuation of Intellectual Property**
- **Commercialization of R&D Results**
- ***Case Studies on the Development and Commercialization of Nanotechnology-based Value Added Products from the Asia-Pacific region*** – 26 case studies from 11 Asia-Pacific countries; 6 from developed countries
- **Study report** – Innovative Development of Bottom-up Nanotechnology-based Value Added Products for Enhancing Competitiveness in the Asia-Pacific

# Asia-Pacific Tech Monitor

<http://www.techmonitor.net>



# Analytical / Knowledge Outputs

## National Innovation System

- NIS Training Manual - “NIS Diagnosis and STI Strategy Development to Achieve National Sustainable Development Goals”

## Sustainable Agricultural technologies

- Policies, Institutions and Processes (PIPs) to Support Value Chains for Seed Development for Pulses, Legumes and Oil crops in the Dry zone (*Case Study*)
- Supporting Value Chains for Seed Development of Pulses, Legumes and Oil crops in Myanmar’s Dry Zone (*Policy Brief*)

## Sustainable Energy

- National Assessment Framework on Sustainable Energy (Indonesia and Lao PDR)
- National Sustainable Energy Strategy Reports (Indonesia and Lao PDR)

# Concluding Remarks

- Networking and collaboration are **key to access up-to-date information and establish linkages and partnerships** for technology transfer and commercialization.
- The complex **challenges of innovation and technology transfer could be addressed** through wider networking with stakeholders.
- **Web-based platforms and online tools** are effective and faster means to facilitate networking and linkages for technology transfer and commercialization.
- **Participation in international networks** can boost the chances of cross-country collaborative innovation and technology transfer.
- APCTT can assist **technology transfer and utilization capacity** of member States through promoting South-South, North-South and Triangular cooperation.

# Thank you

## For more information, contact

Satyabrata Sahu, Ph.D.

UNESCAP-APCTT

P.O. Box 4575, C-2, Qutab Institutional Area, New Delhi – 110 016, India

Tel : 91-11-30973756 | Fax : 91-11-26856274

Email : [sahus@un.org](mailto:sahus@un.org) | Website : [www.apctt.org](http://www.apctt.org),

[www.techmonitor.net](http://www.techmonitor.net)

