

Regional Forum on Strategies to Enhance Innovation and Management Capacities of Startups and SMEs

18-19 July 2018 • Manila, The Philippines

Knowledge Networks for Promoting Technology-based Startups and SMEs

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Outline

- Sustainable Development Goals & Technology Facilitation Mechanism
- Networking for Innovation and technology transfer
- University-Industry partnerships
- Networking channels and linkages
- Knowledge networks for innovation and technology transfer
- APCTT networks and platforms for technology cooperation
- Concluding remarks

STI is Key to Achieve SDGs

- **Science, Technology and Innovation (STI)** are the means to achieve SDGs
- **SDG 9 and 17** provide the framework for promoting innovation and regional cooperation



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



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

Key Messages of SDGs for Innovation

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

Technology Facilitation Mechanism

- The "Technology Facilitation Mechanism" (TFM) has been launched to **support the implementation of the Sustainable Development Goals (SDGs)**.
- TFM facilitates **multi-stakeholder collaboration and partnerships** through the 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 and networking platform** is being established.

Knowledge Transfer is Key to Networking

- Knowledge is a **Critical Asset**
- “Knowledge transfer (KT) encompasses a **broad range of activities** to support mutually beneficial collaborations between universities, businesses and the public sector.”
(University of Cambridge)

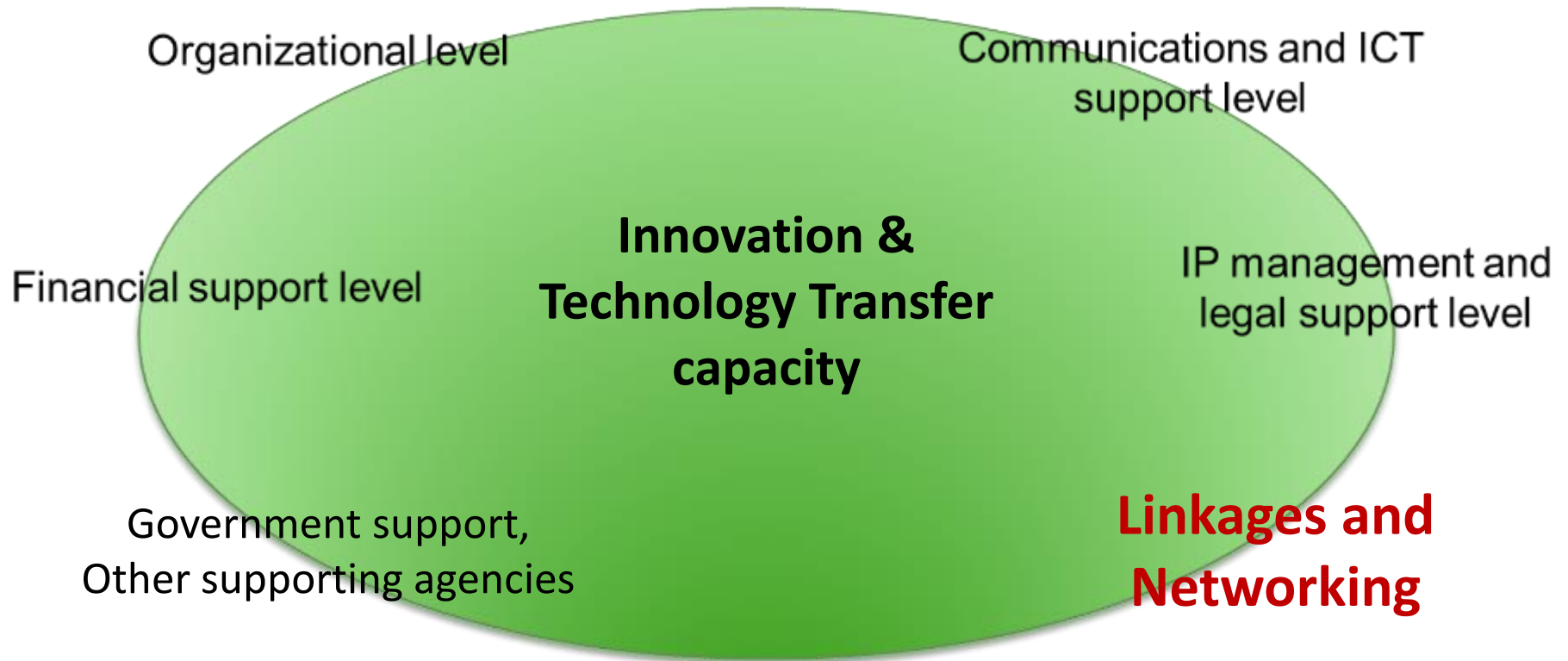
Knowledge Transfer and Rational Decision Making

- Enhances a firm's **technology intelligence** that helps understand its needs of technology to remain competitive in the marketplace
- Helps SMEs in making **rational decisions with regard to technology acquisition, transfer, deployment, adoption and commercialization**

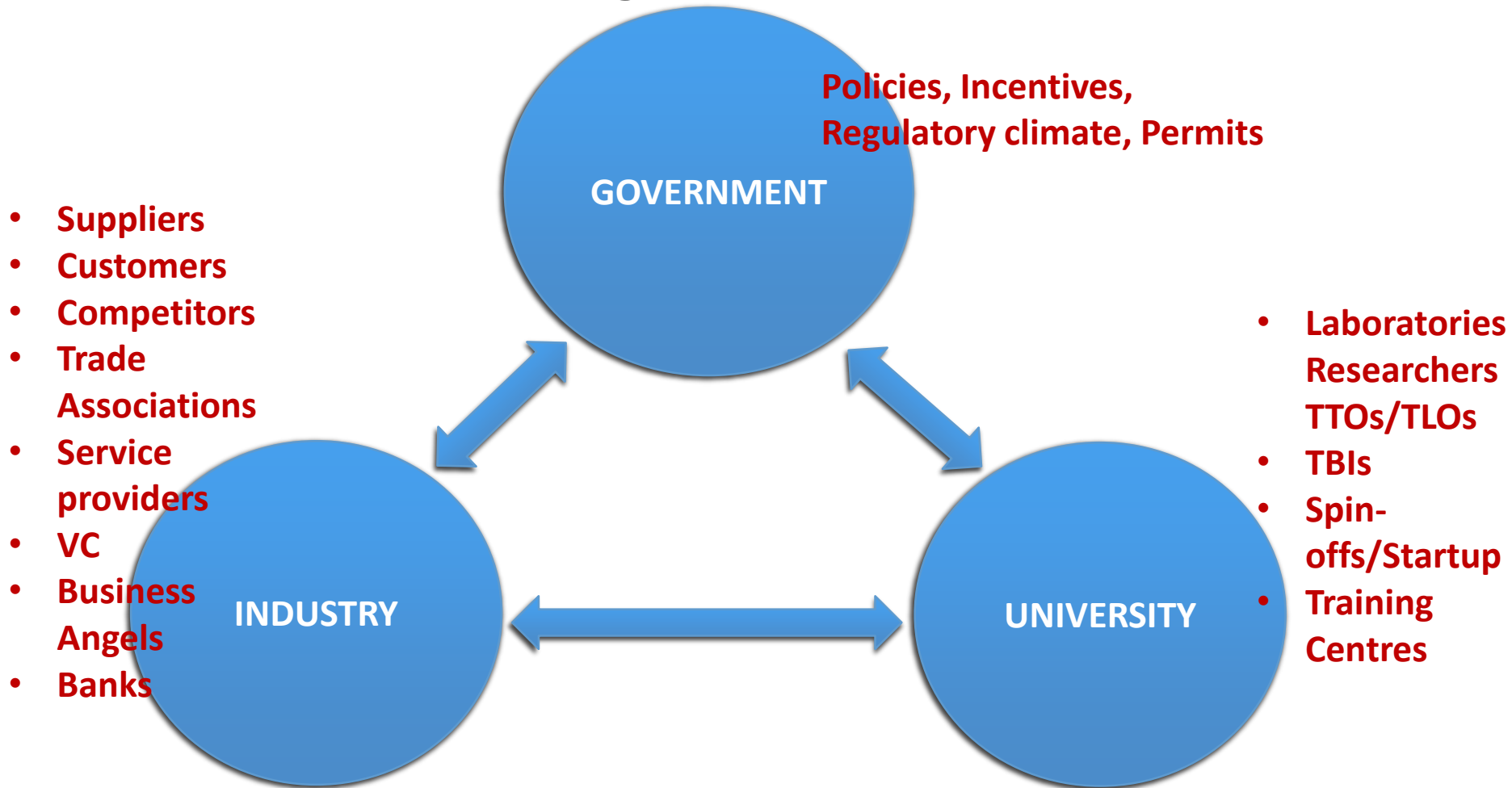
Networking for Innovation and Technology Transfer

- Innovation & Technology Transfer are **complex and long drawn-out processes**
- There are issues related to **administration, planning, management, marketing and implementation**
- The problems are generally attributed to the **lack of systematic planning, control, monitoring, decision-making and Networking.**

Strengthening Innovation & Technology Transfer Capacity



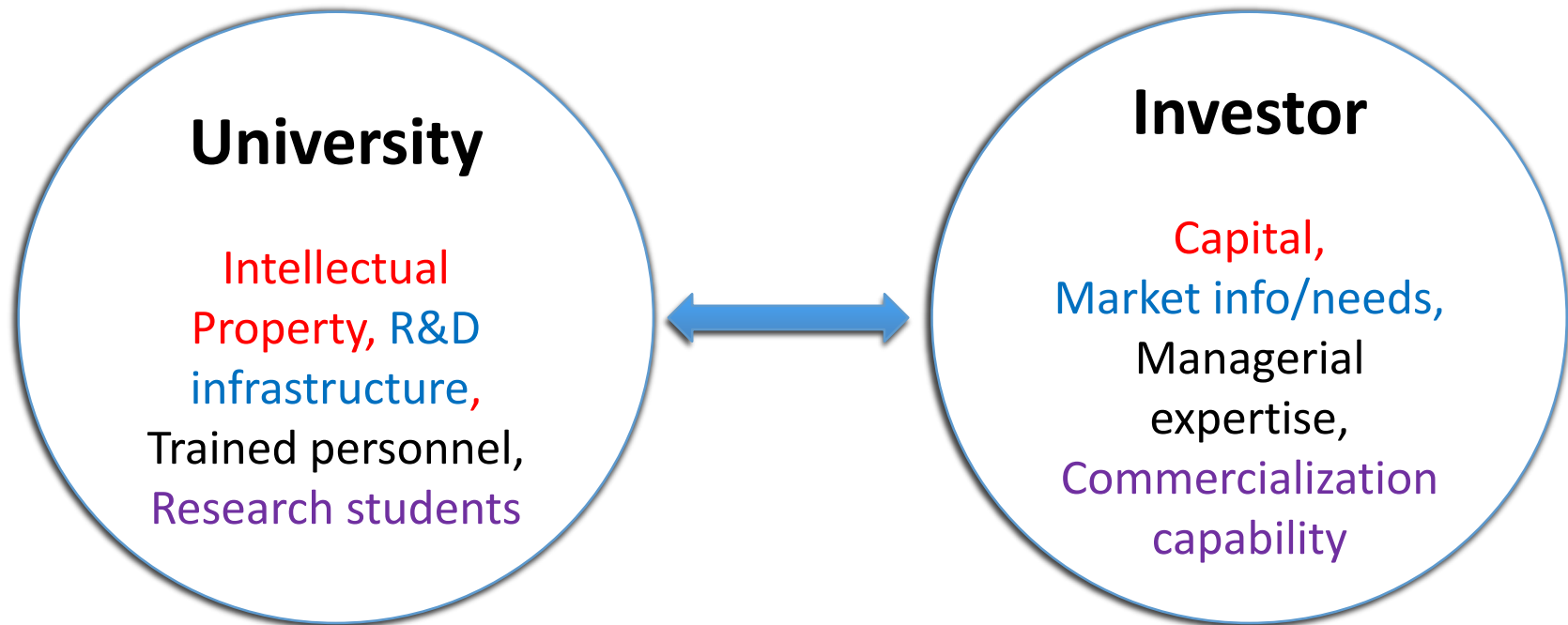
Networking in the Triple Helix



Networking Channels

- Membership of associations, networks (online, offline)
- Technology Business Incubators, Science parks, Innovation centres/clusters
- Technology Transfer / Licensing Offices
- Conferences, Seminars, Workshops, Field visits, Study tours
- Technology data banks, Technology transfer market place
- Strategic alliances at national, regional and international levels
- Availing services of Tech Transfer and Innovation promotion agencies

University – Industry Context



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

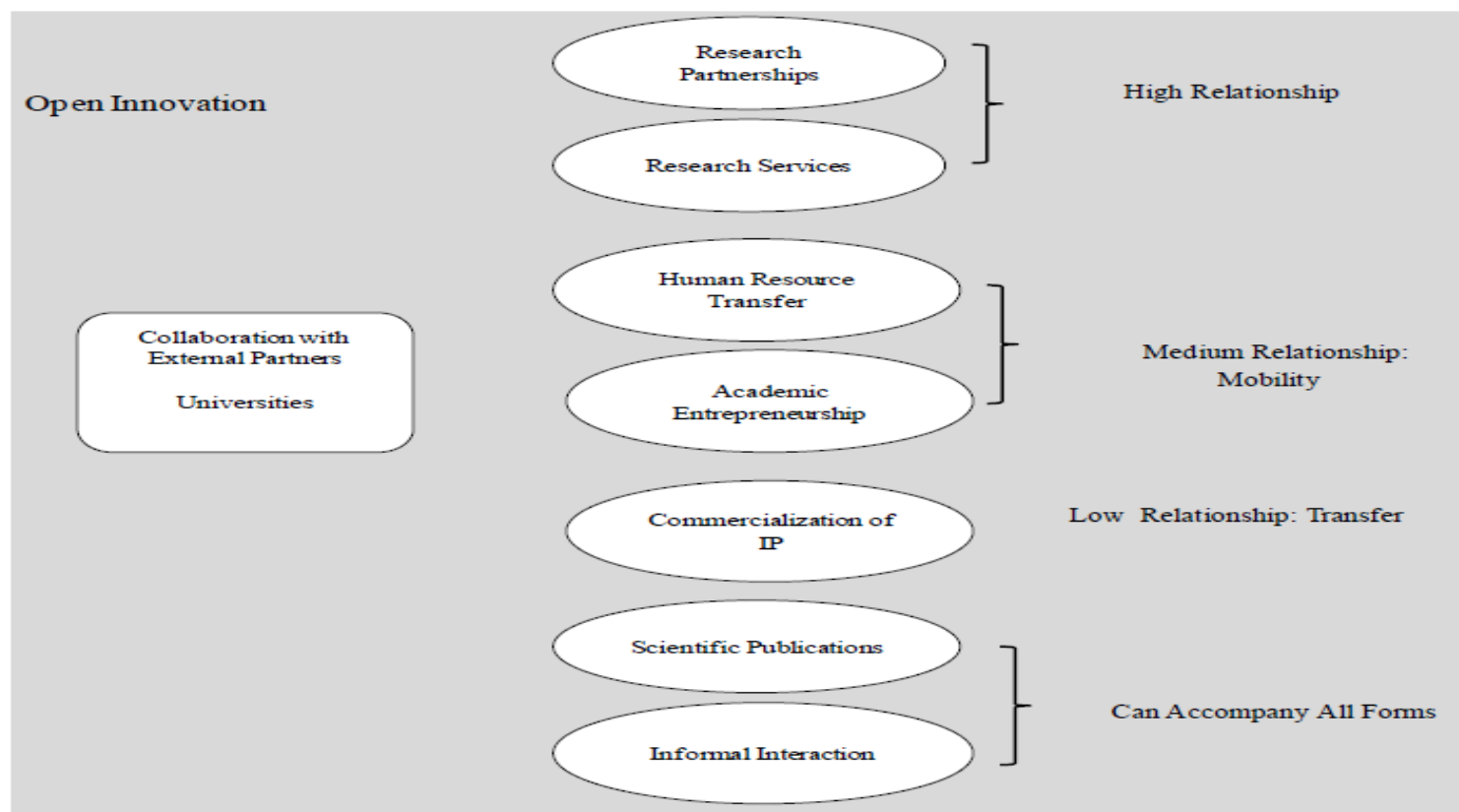
University-Industry Partnerships

- **Research partnership**: performing collaborative R&D
- **Provide research services**: contract research, consulting
- **Human resource transfer**: Personnel requirement of industry, training industry employees, internships
- **Joint training** with industry
- **Academic entrepreneurship**: Development and commercial exploitation of innovations by faculty/students through startups
- **Commercialization of IP**: Patents licensing to the industry
- **Informal interaction**: Social relationship, networking, conferences
- **Joint scientific publications**

Perkman & Walsh, 2007

University-Industry Collaboration

MIT Case Study



CIRRELT, 2015-22

Networking for Entrepreneurial University

Recruit star faculty – (a) Engaged in activities beyond research and teaching; (b) Possess strong publications and citation records; (c) Command a position in the university hierarchy; (d) Display qualities of a role model; (e) Possess business education and experience

Develop links with industry – (a) Research projects sponsored by industry; (b) Industry consulting; (c) Setting up university startups for commercial exploitation of research; (d) Licensing of patents

Create appropriate incentive structure - Appropriate rewards and incentives to motivate faculty and students to innovate, network and connect with industry.

Source: <https://link.springer.com/article/10.1057/jcb.2011.22>

Knowledge Networks for Innovation & Technology Transfer

- ❑ **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 commercialization projects
- ❑ **Link multiple institutions**
Universities, R&D laboratories, industry, technology promotion institutions, policy makers, industry, venture capital agencies, business angels, govt. funding agencies

International Technology Transfer Networks

Examples:

- International Technology Transfer Network - <http://www.ittn.com.cn>
- China International Technology Transfer Centre - <http://www.cittc.net>
- BRICS Technology Transfer Network (BRICS TTN) - <http://brics-ttn.org>
- Climate Technology Centre and Network (CTCN) - <https://www.ctc-n.org>
- Global Innovation & Technology Alliance (GITA) - <https://www.gita.org.in>
- WIPO GREEN Database
<https://www3.wipo.int/wipogreen/en/>
- Climate Business Innovation Network (CBIN), The World Bank

Strategies for International Participation

- Establish a robust and dynamic **outreach strategy** (online and offline)
- Build and promote **innovation clusters, technology licensing/transfer offices and TBIs with international operations**
- Find a position in the **global value chain**
- Improve innovation and **shift to the higher end of value chain**
- Learn from **international experiences** and continue to improve **managerial skills and expertise**

Source: Tech Monitor, Jul-Sep 2012

APCTT's Networks and Platforms



Technology4SME

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



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



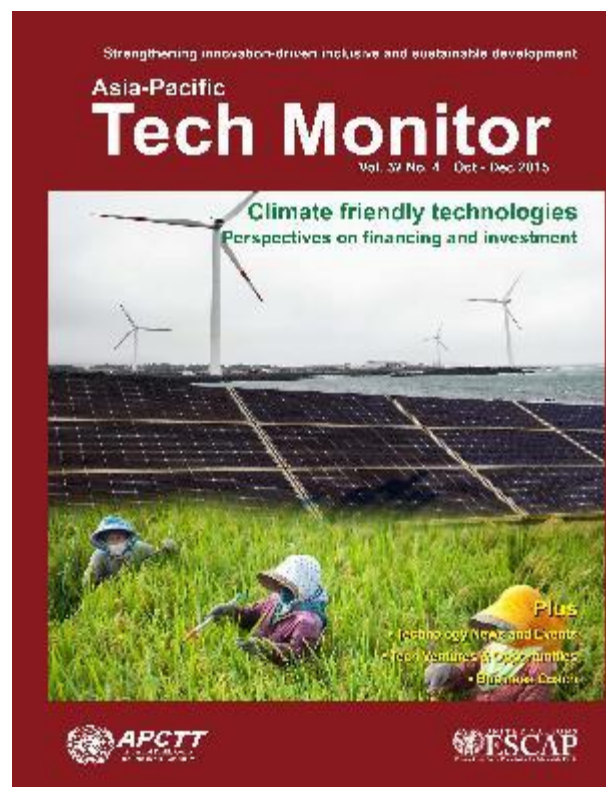
Asia-Pacific Nanotechnology
R&D Management Network
<http://apctt.org/nanotech/>

Technology Intelligence Portal

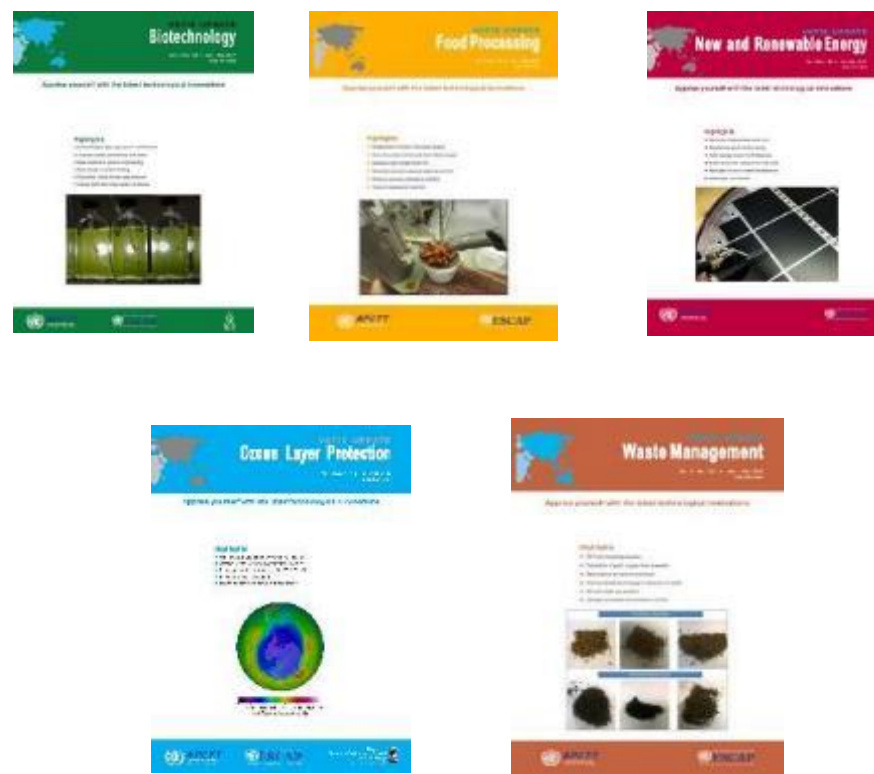
<http://www.techmonitor.net>

- **Asia-Pacific Tech Monitor journal**
- **Value Added Technology Information Service (VATIS) Updates** on Waste Management, Food Processing, New and Renewable Energy, Ozone Layer Protection and Biotechnology
- **Focus** – Innovative technologies, Technology trends, Policies, Market, IPR, Innovation management, Technology events, Technology opportunities, etc
- **Target audience** – Policy makers, SMEs, Technology transfer intermediaries, Policy analysts, Researchers, Academia

Asia-Pacific Tech Monitor



VATIS Updates

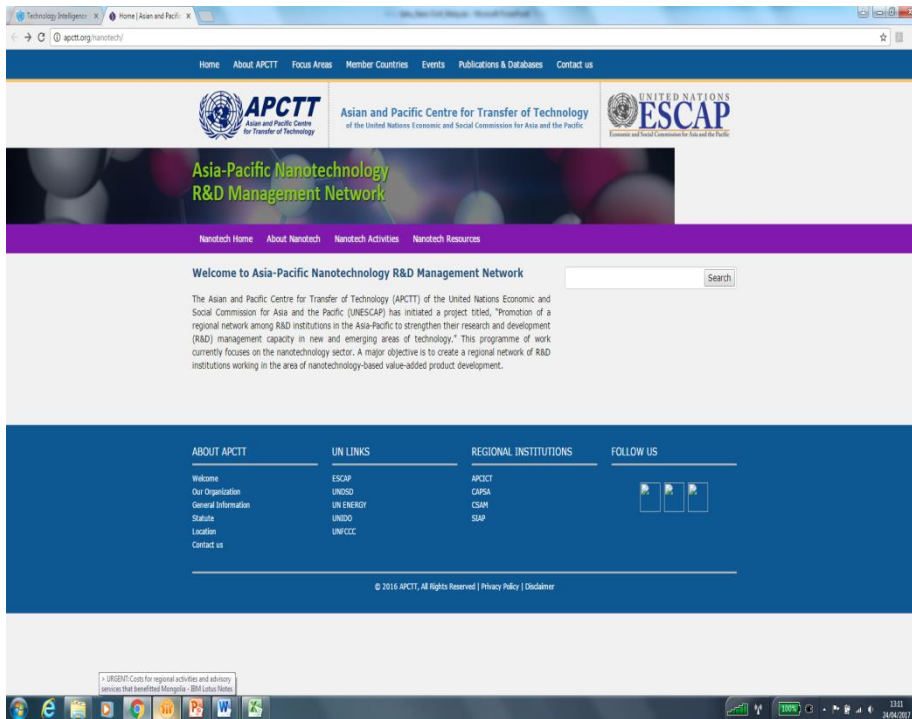


Asia-Pacific Nanotechnology R&D Management Network

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

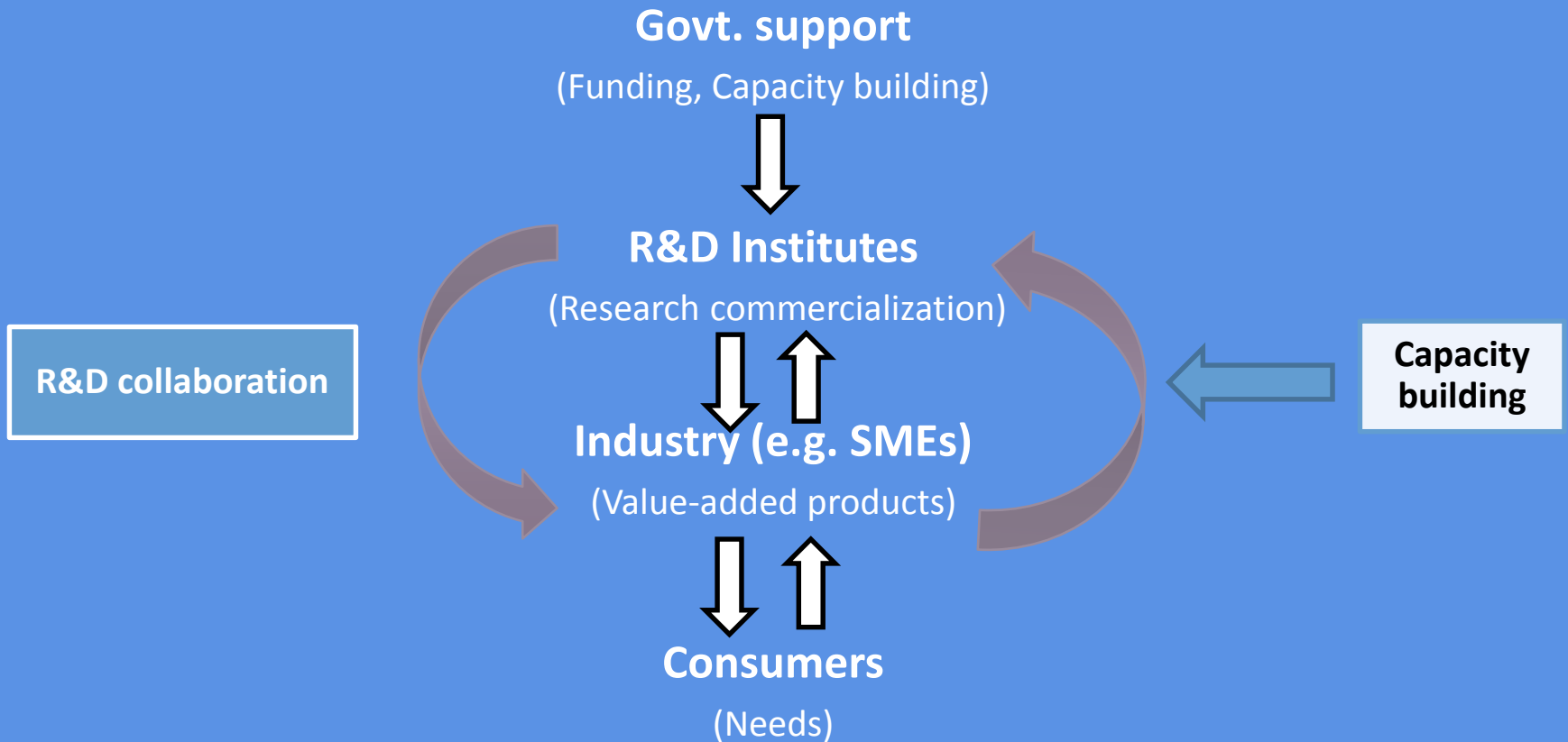
Focus:

- Nanotech-based value added products
- Capacity building in R&D management
- R&D collaborating & Networking
- Commercialization of R&D results
- Nano-safety
- Sharing of information, experience and best practices



Nanotechnology R&D

Integrating top-down and bottom-up approaches



Knowledge Sharing Through Nanotech Network

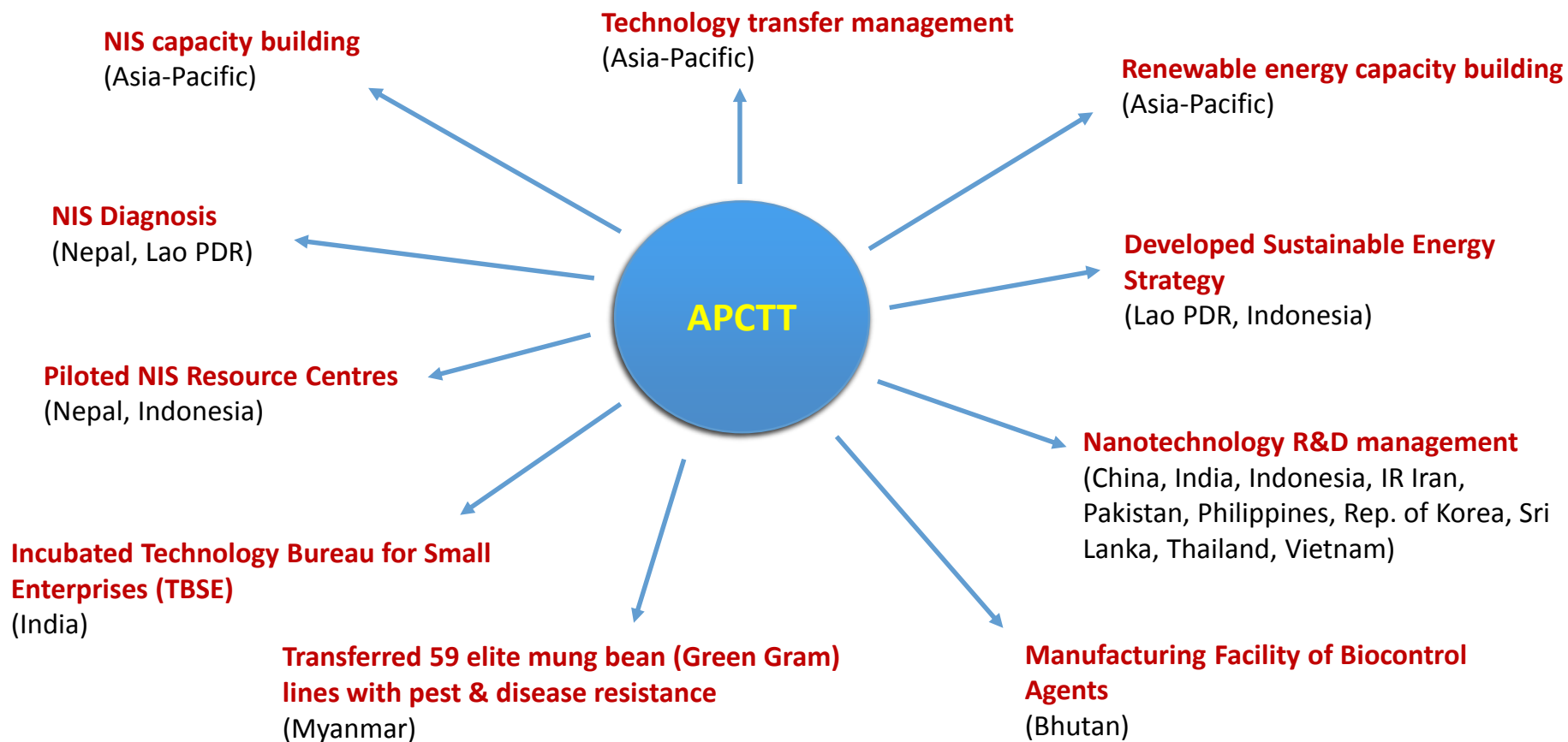
Manual on Critical Issues in Nanotechnology R&D Management: An Asia-Pacific Perspective

- **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

Nanotech Networking Initiatives

- **Establishment of a tripartite programme** on 'Nanoparticle characterization comparison on nanoparticle size activity' between **Iran, Thailand and Taiwan Province of China** under the aegis of Asia Nano Forum (ANF).
- **Developing ASEAN Nanosafety Networking Platform** for sharing of knowledge, resources, testing procedures to promote cross-border collaboration and trade of certified nanoproducts under a common regulatory certification system.

Supporting Member Countries - Key highlights of APCTT



Concluding Remarks

- Knowledge networks are **key to access up-to-date information and establish linkages and partnerships** for innovation and technology 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

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