MUTUAL LEARNING EXERCISE ON R&I STRATEGIES AND POLICIES

UNITED NATIONS
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OACPS R&I

Session 5: Technology Transfer
A process of economic and technological discovery

Dimo CALOVSKI (Mr.)
Science, Technology and Innovation Policy Section
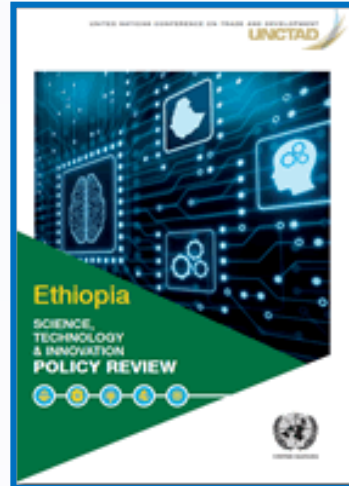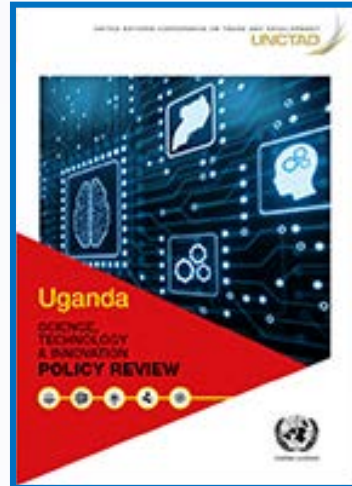**UNCTAD Division on Technology and Logistics**
dimo.calovski@un.org

Addis Ababa, Ethiopia
14-17 February 2023

TECHNOLOGY
FACILITATION MECHANISM

UNCTAD STI Policy Reviews

1. Botswana
2. Zambia*
3. Dominican Republic
4. Uganda*
5. Ethiopia
6. Panama
7. Rwanda*
8. Iran
9. Thailand
10. Oman*
11. El Salvador
12. Ghana
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Science, technology and innovation / Strengthening National Innovation Systems

Strengthening National Innovation Systems

Science, Technology and Innovation Policy Reviews (STIP Reviews) are undertaken by UNCTAD at the request of member States.

Through a STIP Review, a country's STI stakeholders can identify the key strengths and weaknesses of their innovation systems and establish strategic priorities for its development.

The STIP Review report published by UNCTAD includes a diagnosis of the national system of innovation (NSI), an assessment of the STI policies in place, and is normally complemented by in-depth studies of specific sectors, institutions or STI-related problems that are of particular relevance to the country under review.

The STIP Review process is also intended to raise awareness and to stimulate a policy dialogue among stakeholders about the role of STI in national development and to encourage the emergence of stronger linkages among the STI players.

Another key goal of the STIP Review process is to identify practical actions that favour technological capacity-building (the capacity to generate, absorb and diffuse knowledge and to create and support dynamic linkages and learning processes among STI stakeholders) and the strengthening of their innovation capabilities (the practical and productive materialization of science and technology into socially or commercially valuable products and services).

STIP Reviews can provide the basis for capacity-building activities targeting various elements of the innovation system. In several beneficiary countries, STIP Reviews have ignited significant renewal in STI policy, helped raise its profile in national development strategies and facilitated the inclusion of STI activities in international cooperation plans.
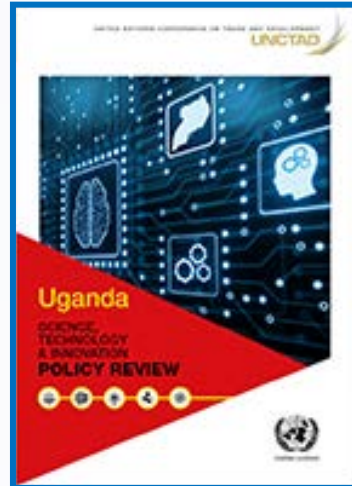
Documents and Publications

Examen de las políticas de ciencia, tecnología e innovación : República Dominicana
UNCTAD/DTL/STICT/2020/8 - 26 Apr 2021
Español

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OBJECTIVE:

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Español

1. **Technology Transfer – a process of economic and technological discovery**

2. Absorptive capacities and innovative capabilities

3. Channels of technology transfer

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1. **Technology Transfer – a process of economic discovery**

2. Absorptive capacities and innovative capabilities

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1. Technology Transfer – a process of economic discovery

… definitions not changed much

"… the systematic knowledge for the application of a process that results in th manufacture of a product or the delivery of a service."

(UNCTAD, 1985, **2014**)

"… systematic, theoretical, and practical knowledge and skills, used in the process of development, delivery and implementation of a service or product."

(Burgelman, **2008**)

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1. Technology Transfer – a process of economic discovery
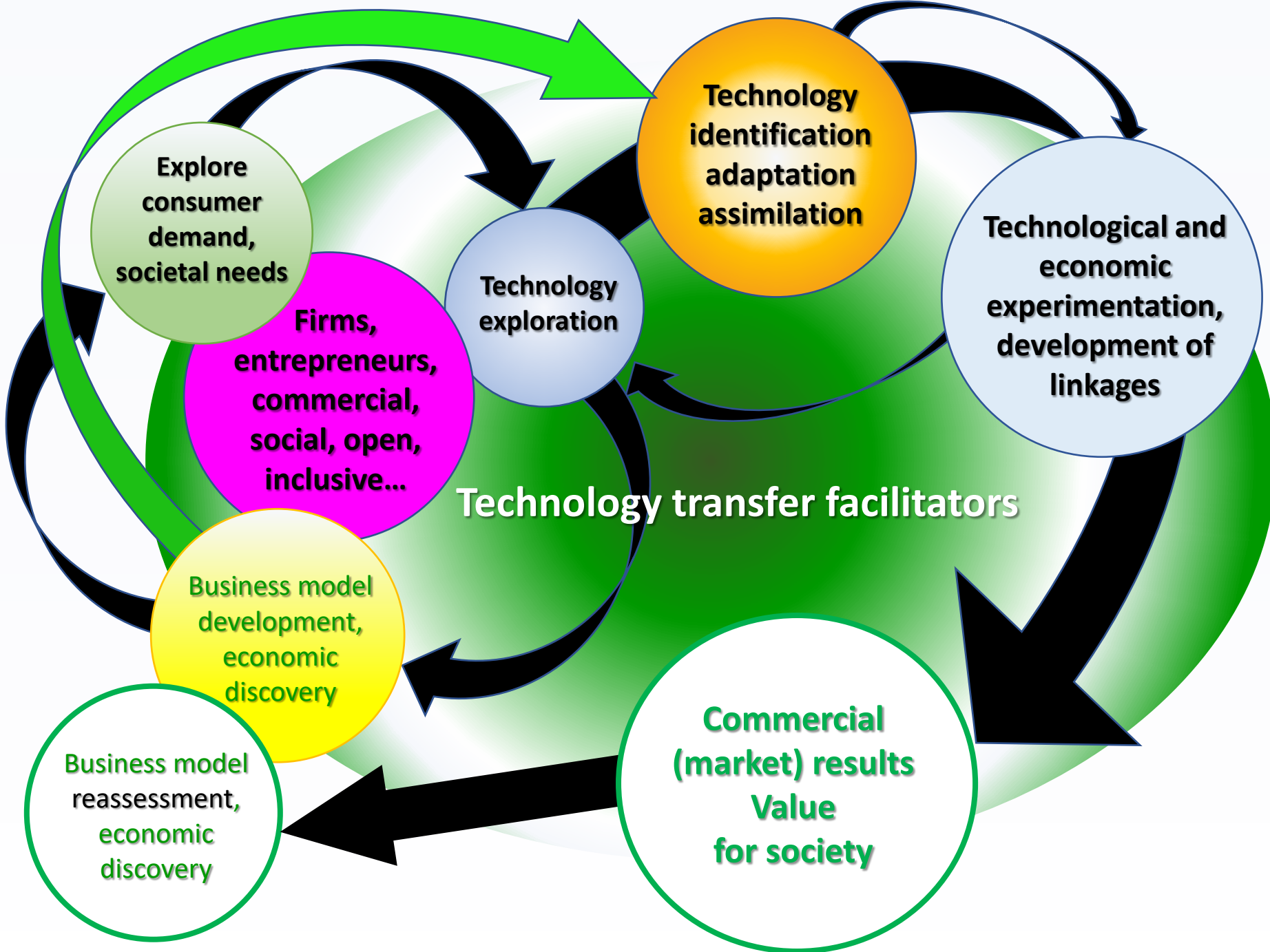
… *transactions* also not changed much

- Purchase or lease of machines, **equipment**

- Purchase of intellectual property (**licences**)

- Transfer of systematic **knowledge** for the:

  ✓ manufacture of a product

  ✓ application of a process

  ✓ rendering of a service …   … and often includes:

    o transfer of knowledge to **install and operate** equipment

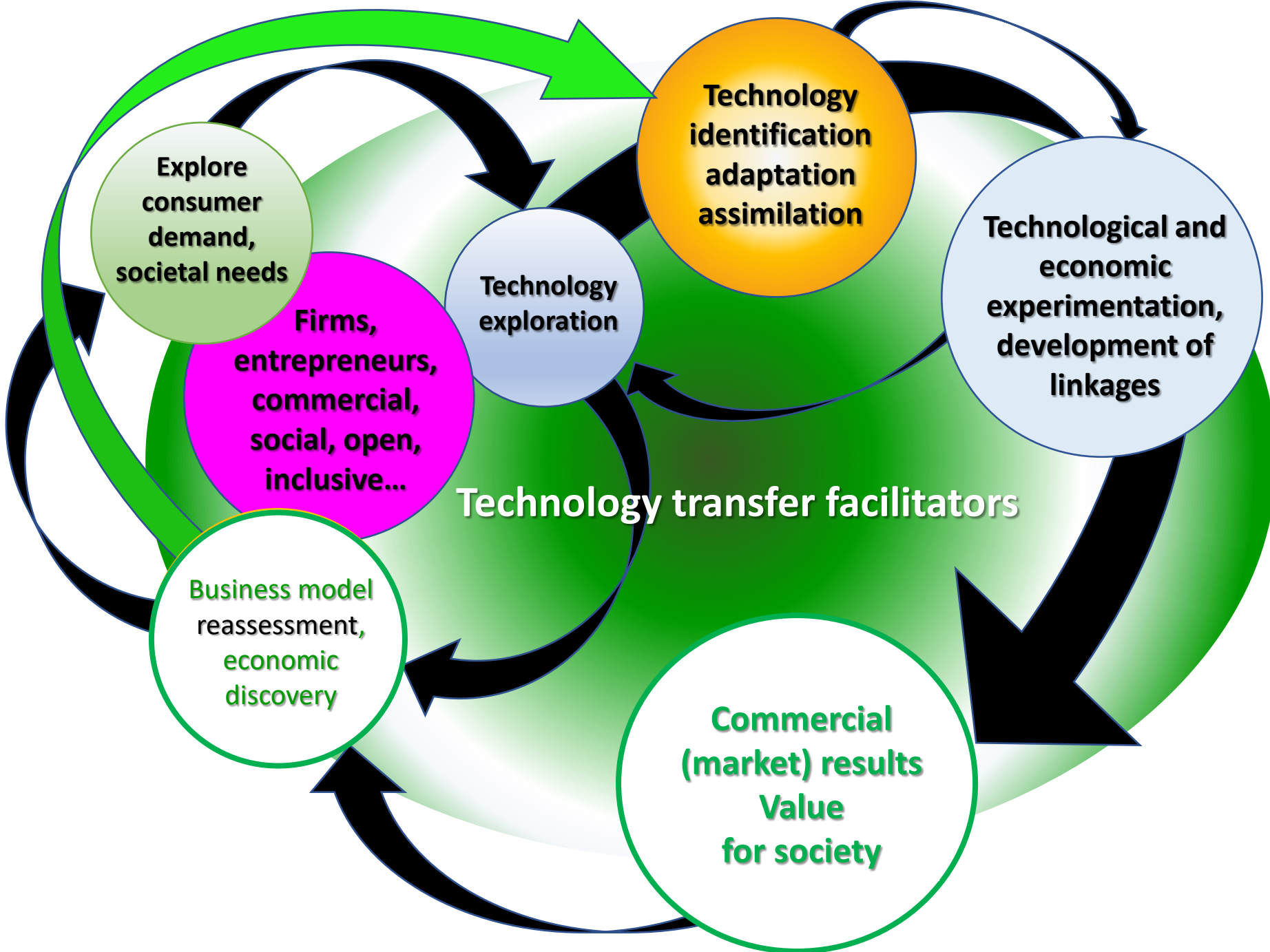   o transfer of technical cooperation, technology transfer **agreements**

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1. **Technology Transfer** –
a process of economic discovery

Technology identification adaptation assimilation Transfer

Technology identification adaptation assimilation

Technology exploration

Explore consumer demand, societal needs

Firms, entrepreneurs, commercial, social, open, inclusive...

Technological and economic experimentation, development of linkages

Technology transfer facilitators

Business model development, economic discovery

Business model reassessment, economic discovery

Commercial (market) results
Value
for society

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Technology transfer: *economic, technological discovery process*

- Discovering what *works commercially, in the market*

- *If there is no product or service, the transfer has failed*

- Centrality: *transfer*, **or** *generation of value*?

- Experimentation and failure

- Demand, **market-driven** transfers **replace** research/**R&D-push**

- Three problems requiring policy support:

  o Information, coordination – *technology transfer facilitators*

  o Finance under uncertainty

  o Time gap: discovery, transfer, value generation

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Why?

- Truer to life: everything happens simultaneously, permanent feedback

- Innovators (entrepreneurs, firms) are included

- Avoids "solutions looking for problems"

- Addresses Lab-to-field challenges

- Rationale to engage financiers, investors

- Technology transfer facilitators recognized

- Consumers/citizens needs better understood

- More complete scope of stakeholders

- **Reflects NSI framework**, networks for value creation

National System of Innovation
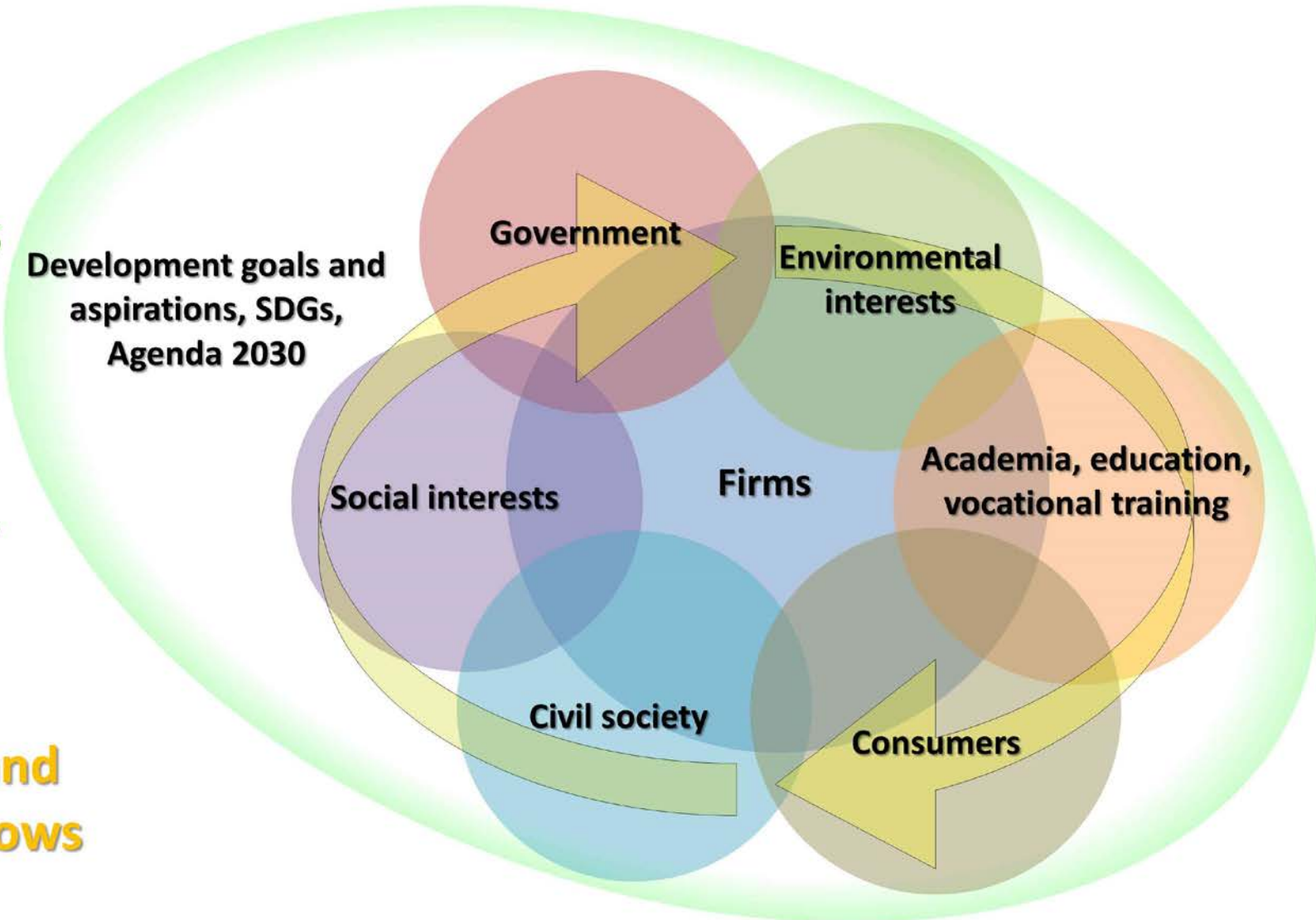

Linkages

Interactions

Relationships
  Quantity
  Quality

Stakeholders
  Capability
  Capacity

Learning, technology, and knowledge flows

Development goals and aspirations, SDGs, Agenda 2030

Government

Environmental interests

Social interests

Firms

Academia, education, vocational training

Civil society

Consumers

So where is trade in all this?

Technology identification adaptation assimilation

Technological and economic experimentation, development of linkages

Explore consumer demand, societal needs

Technology exploration

Firms, entrepreneurs, commercial, social, open, inclusive...

Technology transfer facilitators

Trade ?

Business model development, economic discovery

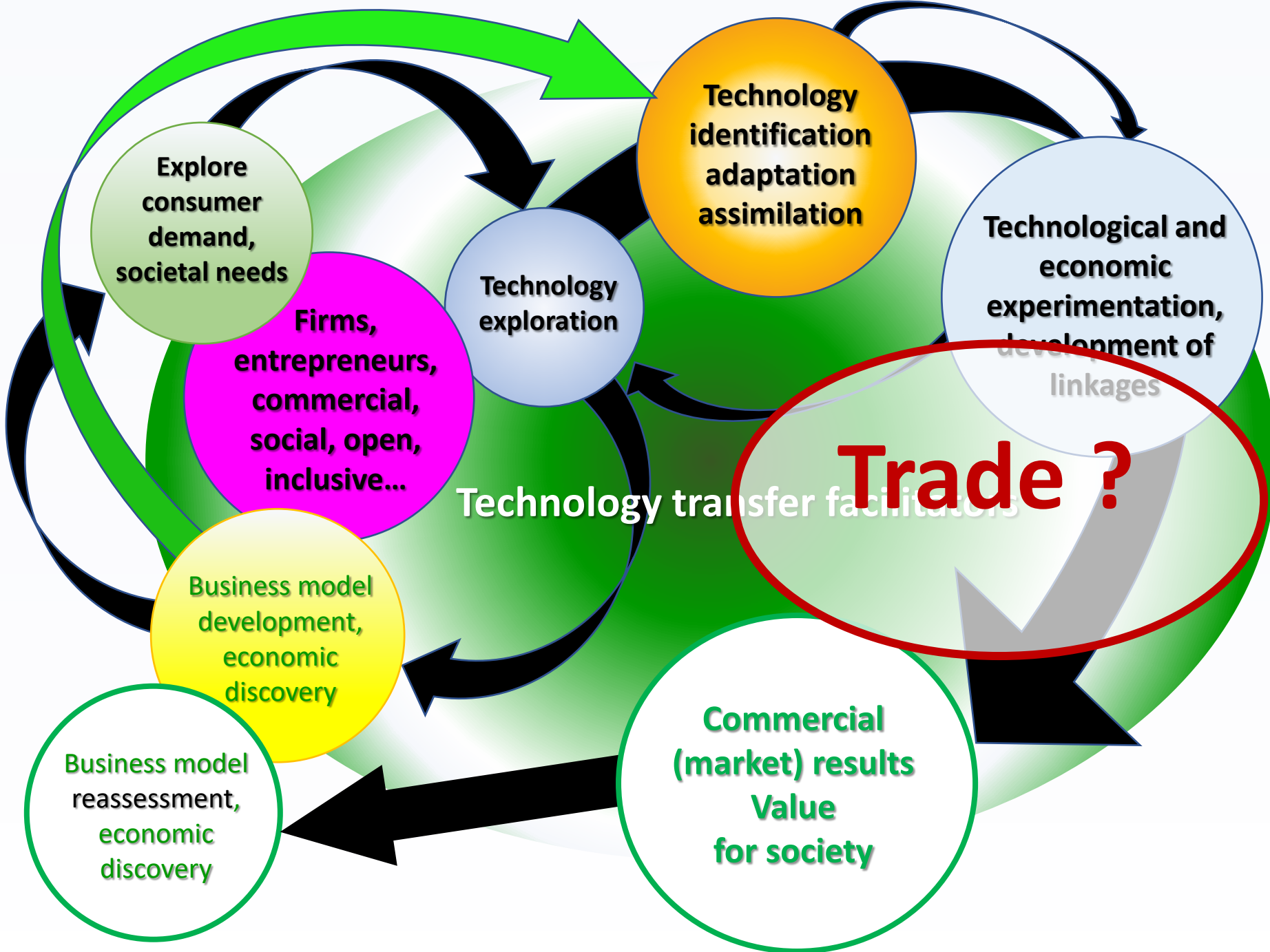Business model reassessment, economic discovery

Commercial (market) results Value for society

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STI policy and trade policy (agreements) links

- Intellectual property rights

- Market access – import tech, export tech products

- Standardization: common standards and technical regulations, compatibility and interoperability of technologies

- R&D collaboration

- Competition policy

- Support for SMEs, participation in GVCs

Thank you!

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