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Why Science, Technology & Innovation (STI) Policy?

- Knowledge is rapidly becoming today’s key production factor
- Innovation is a sustainable competitive advantage; low cost is not
- Science and technology play a major role in innovation
- Commercialised science and technology add real economic value
Why attention for innovation?

- Improve growth
- Improve competitiveness
- Improve employment
- Improve public sector activities
- Improve environmental conditions

**OECD 1995:** “Knowledge in all its forms plays today a crucial role in economic processes. Firms with more knowledge are winners on markets. Nations endowed with more knowledge are more competitive”
The 3 layers of innovation

**Globalisation:**
- Internationalisation of markets
- R&D can be located anywhere

**Europeanisation:**
- Centralisation of key R&D tasks and adoption of common standards for products

**Regionalisation:**
- Stronger roles for regional clusters of innovative capacity

**Globalisation:**
- Pressure to be more competitive

**Europeanisation:**
- Realising a policy system capable of addressing the diversity in problems and goals

**Regionalisation:**
- Increase the capacity of regional authorities to strengthen competitive advantages
Innovations do not come about in isolation: they are engendered by a complex interplay of actors. This has been termed: “system of innovation”
National Innovation System (NIS/C. Freeman)
Main issues of innovation policy

1. Strategy and policy measures for innovation
2. Co-ordination mechanisms for innovation
3. Enhance networking
4. Financing innovation
5. Entrepreneurship for innovation
6. Promotion/awareness of innovation
7. Monitoring and evaluation of innovation policy
1. Strategy and policy measures for innovation

- **National and regional innovation strategies:**
  - *horizontal approach* (e.g. sectors, science fields, departments, etc.)
  - *based on analysis of the national/regional innovation systems: identifies challenges*
  - *aims at balancing the NIS/RIS*

- **Policy measures:**
  - *based on policy mix – interrelated and reinforcing each other policy measures*
  - *addressing weak links in the national/regional innovation system*
2. Co-ordination mechanisms for innovation

- Innovation policy is a horizontal policy:
  - coordination and cooperation between ministries and other governmental bodies concerned
  - coordination and cooperation between national and regional levels

- Improved governance and coordination increases the efficiency of budget spending on innovation

- The choice of co-ordination mechanism: centralised (at national level) or decentralised (at departmental or ministry level)
3. Enhance networking

3-layer networking:

- International
- Sub-regional
- National

3-player networking:

- Public authorities/sector
- Firms/business
- R&D institutions
4. Financing innovation

- **Difficulties with obtaining finance** are particularly prevalent for entrepreneurs, spin-offs, start-ups and SMEs
- **Design of financial measures** addressing the key innovation challenges (*referring to strategy*)
- **Balance between the measures** (see next slide): *economy of scale effect*
- Overall development of the financial system and the financial sector in the country
## Financing innovation: where do money go*

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Entrepreneurship for innovation</th>
<th>New companies (high-tech)</th>
<th>Start-up (small SMEs)</th>
<th>Growing innovative SMEs</th>
<th>Total schemes reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 (11%)</td>
<td>55 (21%)</td>
<td>41 (15%)</td>
<td>65 (24%)</td>
<td>76 (29%)</td>
<td>266 (100%)</td>
</tr>
</tbody>
</table>

* Ecorys own review of financial schemes for innovation across the European Union
Financing innovation: where do money go*

* With compliments to Dr Jari Romanainen (TEKES)

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5. Entrepreneurship for innovation

- The role of innovative SMEs
- Commercialisation of science through entrepreneurship (*see next slide*)
- Spin-offs from research institutes
- Entrepreneurship education as early as from secondary schools
- Entrepreneurship for innovation as part of the national culture
### The ‘gap’

**World of business**
- Seeks profit and market shares
- R&D for private use
- Short term orientation
- Information is for commercialisation
- Interpret information versus opportunities
- Communicate via prices/brands

**World of science**
- Seeks academic eminence
- R&D for moving frontiers
- Long term orientation
- Information is for disclosure
- Interpret information in the context of advancing science
- Communicate via publications
6. Promotion/awareness of innovation

- Innovation: *national agenda*
- Awareness: *part of policy measures*
- Innovators: *national “heroes”*
7. Monitoring and evaluation of innovation policy

- Innovation measures can be very expensive:
  - *hence, ex-ante impact assessment*

- The nature of innovation requires different approach to monitoring and evaluation
3 Main Challenges for Transition Economies

Challenge No 1:
- Identify the weak or missing links between different players in the National Innovation System and initiate strategic measures to improve/build these links

Challenge No 2:
- Build up a strategy how to let entrepreneurship develop faster starting from entrepreneurial education and involving incentives and conducive infrastructure

Challenge No 3:
- Streamline policy formulation, implementation, monitoring and evaluation using horizontal approach as to move from sub-optimisation at sector, field of science, etc. level towards optimisation at national level
Final Note: 
Use your biggest advantage – OIL!

- The Netherlands invests % of the revenues from gas in innovation projects

- Azerbaijan can invest a % of its revenues from oil in innovation projects
THANK YOU!

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See also Ecorys study on ICT, Innovation and Economic Growth in Transition Courtiers at:
www.infodev.org/en/Publication.553.html