The European Commission’s science and knowledge service

Joint Research Centre
Building innovation eco-system through mapping STI activities and multi-stakeholder engagement

Guilin, 9 December 2019

Monika Matusiak
The role of Joint Research Centre in the European Commission
EU experience in developing an innovation ecosystem

From linear to cyclic innovation processes
Lesson 1:
Innovation comes from many sources and is often not R&D or technology pushed:

- Business/managerial innovation
- Social innovation
- Technology transfer

This is even more important in transition and less developed countries
- you need smart support and strategic focus

Relation between strategic objectives (R&I)

**Sustainable economic growth and employment**
- Business innovation
  - Growth of innovative companies: number & size
  - Innovative effort
  - Knowledge-based economy
  - Training in innovation

**Social and territorial cohesion**
- Internationalisation
  - Participation in international projects
  - Outward looking
  - Networking & value chains

**Better quality of life**
- Cooperation
  - Knowledge transfer
  - Collaborative research
  - Open innovation
  - Convergence innovation– HE

**Excellent science**
- Leadership in specific S&T areas
- Attractiveness to talent
- Quality in science
- Socio-economic impact

Region of Castilla y Leon in Spain

Innovative and creative culture
- Social awareness
- Innovation & entrepreneurship at school
- you need smart support and strategic focus

**Region of Castilla y Leon in Spain**

### THEMATIC PRIORITIES

<table>
<thead>
<tr>
<th>PROGRAMMES</th>
<th>TOOLS</th>
<th>Agriculture, Food, and Natural Resources</th>
<th>automobile &amp; Aeronautics</th>
<th>Health, Social Care, Demographic Change &amp; Wellbeing</th>
<th>Natural &amp; Cultural Heritage (incl. Spanish language)</th>
<th>IT, Energy, &amp; Sustainability</th>
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</thead>
<tbody>
<tr>
<td>Business Innovation</td>
<td>- Small demonstration projects</td>
<td>- Financial support (soft loans)</td>
<td>- Attraction of new companies (FDI)</td>
<td>Etc.</td>
<td>Etc.</td>
<td></td>
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<tr>
<td>Excellent science</td>
<td>- Pre-doctoral fellowships</td>
<td>-</td>
<td>- Excellence centres</td>
<td>- Scientific equipment</td>
<td>Etc.</td>
<td>Etc.</td>
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<tr>
<td>Innovative culture</td>
<td>- Exhibition fair about tech applications to traditional foods</td>
<td>-</td>
<td>- Open days in Health research institutes</td>
<td>Etc.</td>
<td>Etc.</td>
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Lesson 2:
There needs to be a balance of horizontal innovation support and specialized excellence:

**Less developed R&I ecosystems:**
- Basic innovation infrastructure: Development/reforms of universities/research centres, science and technology parks, incubators, etc.
- Businesses not able to use STI inputs for innovation
- Innovation through imitation
- Low ‘appetite for innovation’ in society

**Transition phase:**
- Specialised niches of excellence in science
- Small number of innovation champions in business
- Innovation through adaptation
- Weak collaboration networks
- Growing societal support for innovation and innovative attitudes

**Advanced R&I ecosystems:**
- World-class organizations in a number of fields
- A big number of innovating SMEs
- Breakthrough innovation
- Strong collaboration networks
- Innovation is an obvious need
- design a mix of horizontal and specialised support measures

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Responsible Authority</th>
<th>Sector</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Incubators and accelerators programmes</td>
<td>Support to the establishment and strengthening of incubators and accelerators programmes. This is a grant scheme.</td>
<td>MoS</td>
<td>Start-ups</td>
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<tr>
<td>R&amp;D tax incentives</td>
<td>Tax credits aimed at fostering investment in research and development.</td>
<td>MoF</td>
<td>Enterprises; Research organisations; Start-ups</td>
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<tr>
<td>Support scheme for digital transformation of companies</td>
<td>Support to digital transformation, i.e. the adoption of digital processes and tools to achieve strategic business goals. This is a complex, multifaceted process that brings a cultural shift in the workplace and changes every part of an organisation. This is a co-financing scheme.</td>
<td>MoPA</td>
<td>Enterprises (Start-up)</td>
<td></td>
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<tr>
<td>Environment protection and waste management programme</td>
<td>Support measures that address new technologies in the field of environment protection and waste management with a special focus on ecological black spots. This is a co-financing scheme.</td>
<td>MoSDT</td>
<td>Enterprises (Research organisations)</td>
<td></td>
</tr>
<tr>
<td>Support scheme for innovative health tourism services</td>
<td>Support measures that create a new and innovative business model (process) for entrepreneurs to fulfill the special needs of patients and their families in the field of health tourism. This is a co-financing scheme.</td>
<td>MoSDT, MoH</td>
<td>Enterprises (Start-up)</td>
<td></td>
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</tbody>
</table>

Smart Specialisation Strategy of Montenegro 2019-2024
Lesson 3: You don’t know it all: talk to your businesses and society:

- Businesses are best placed to lead the identification of new opportunities for growth.
- The process of discovery of the new niches/markets inspire public policies on innovation.

Quadruple helix model
Entrepreneurial discovery Moldova May-December 2019
4 regions, 4 priority areas ~ 190 regional, national participants
...and what to talk about
...and what to talk about

Smart Specialisation Strategy of Northern Netherlands
Lesson 4: Don’t invest in buildings but in people:

The case of Spain:

• With EU support, Spain has developed the highest number of technology parks per capita in Europe – yet it’s not the most innovative country in Europe

• Similarly, the country built a great number of regional airports, which are empty – as there’s no accompanying economic growth
- it’s not only about higher education but also skills at different levels

Skills of policy-makers

Skills in priority domains

Skills of stakeholders

• Higher education
• Vocational
• Transversal competences

• Ability to participate in a bottom-up strategic process
• Ability to cooperate

• Ability to design, implement and monitor a complex innovation policy
• Inter-sectorial cooperation
• Ability to create trust and engage stakeholders
Lesson 4: Be vary of territorial inequalities – localise STI activities

The three regions analysed appear to present some similar characteristics and some peculiar specifics. Highly industry-oriented, strong exporters, the 3 regions have common economic grounds: metal processing, chemical equipment sectors and transport sectors, together with key light industries: agro-food, textile and wood derivatives.

At a closer glance, specific areas of specialization are in the transport sector, for instance, Kharkiv is specialised in construction of military vehicles and sport/leisure boats, while Odesa is concentrated in the repair and maintenance of ships and Zaporizhia is in the aerospace and the production of ships.

Among the three, Odesa is the region that has the strongest and largest specialisation in the agro-food industry.
Lesson 5:
You can’t do it all – prioritise and focus on where you can achieve a meaningful impact

STI strengths in the Western Balkans

SDG interlinkages (source: JRC)
STI collaboration in the Western Balkans
How we have used these lessons: The concept of smart specialisation (S3)

Smart and strategic diversification:

- Build on what you already have
- Promote intersectorial innovation
- Innovation should solve business and societal problems

Opportunities to move up the value chains

Economic potential

Societal challenges

Scientific potential

Innovative potential

Adding value to existing activities

Niches to compete on international markets

Create new solutions

European Commission
Concept of smart specialisation (S3)

Example:

**Economic potential:** High level of production and employment in agriculture and food processing

**Innovative potential:** Quickly growing bio-tech cluster

**Scientific potential:** Top level pharmaceutical and biotechnology research

**S3 priority:** Function foods for cardiac patients

**Societal challenge:** Health – osteopathy and cardiac disease
JRC support for smart specialisation

- FINAL S3 STRATEGY
- INSTITUTIONAL CAPACITY FOR IMPLEMENTATION
- INSTITUTIONAL CAPACITY BUILDING
- ENTREPRENEURIAL DISCOVERY PROCESS
- MAPPING EXERCISE

- EU Countries registered in S3P: 19
- EU Regions registered in S3P: 183
- Non-EU Countries registered in S3P: 7
- Non-EU Regions registered in S3P: 18
- S3P Peer-reviewed Countries: 16
- S3P Peer-reviewed Regions: 75
Thank you

Any questions?
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