Smart specialisation within the innovation and cohesion policies – case of Poland 2014+

“SMART SPECIALISATION as a compromise for horizontal vs. sectorial choice?”
The result of the National smart specialisation strategy will be areas of smart specialization on the national level, along with a mechanism for reviewing and updating the selection in progress.

The key principle:

Focus on priority areas for R&D&I, which have a competitive advantage or have development potential on the market.

- socio-economic transformation of the country or regions
- improving innovation technologies used in enterprises
- growth of private expenditure on R&D
National smart specialisation strategy in Poland – the process of identifying technology areas

**Step 1** – analysis results of The Technology Foresight for Polish Industry – InSight 2030 and The National Research Programme

**Step 2** – Quantitative analysis of existing R&D and Innovation support programs

**Step 3** – Qualitative analysis of the impact of current R&D and Innovation support programs

**Step 4** – Cross-sectional analysis between results steps 2 and 3

**Step 5** – SWOT analysis and meetings with socio-economic partners

**Step 6** – Short list of smart specialization at the national level
Technology Foresight for Polish Industry – InSight 2030 vs. National Research Programme (NRP)

**InSight 2030 research areas**

1. Industrial biotechnology
2. Microelectronics
3. Photonics
4. Advanced manufacturing systems and materials
5. Nano-processes and nano-products
6. ICT
7. Co-generation technologies and improvements in energy efficiency
8. Natural resources
9. Healthy society
10. Green economy

**NRP research areas**

1. New energy-related technologies
2. Diseases of affluence, new medicines and regenerative medicine
3. Advanced information, telecommunications and mechatronic technologies
4. New materials technologies
5. Natural environment, agriculture and forestry
6. Poland’s social and economic development in the context of globalising markets
7. State security and defence

37 cross-sectoral technologies aggregated in 22 main areas of specialisation under consultations with experts and entrepreneurs
Quantitative and qualitative analysis of existing R&I support programs

The identification of **22 areas of specialisations** gave evidence to conduct additional analysis, serving as a verification, indicating the economic sectors which have the best economic effects (quantitative analysis – statistical data (CSO, Eurostat, regional data)) and activity in the field of participation in development projects and cooperative relations (qualitative analysis – companies projects financed by ERDF and the national budget).

- **economic impact**
  - new products on the market, as a share of GDP
- **market potential**
  - expenditures on R&D, the value of private and public investments
- **readiness to cooperate**
  - cooperative relations (clusters)
- **export potential**
  - export and internationalization
The National Smart Specialisation Strategy in Poland – priorities in the area of R&I

**SUSTAINABLE ENERGY**
- High efficiency, low-emission and integrated circuits manufacturing, storage, transmission and distribution of energy,
- Smart and energy efficient construction,
- Environmentally friendly transport solutions

**HEALTHY SOCIETY**
- Medical engineering technologies, including biotechnologies,
- Medical diagnosis and treatment of lifestyle diseases and personalized medicine,
- Production of medicinal products.

**BIOECONOMY AND ENVIRONMENT**
- Innovative technologies, processes and products of the agri-food and forestry-wood,
- Healthy food (high quality and performance of production),
- Biotechnological processes and products specialty chemicals and environmental engineering.

**NATURAL RESOURCES AND WASTE MANAGEMENT**
- Modern technology sourcing, processing and use of natural resources and the production of substitutes,
- Minimizing waste, including unfit for processing and use of materials and energy waste (recycling and other recovery methods),
- Innovative technologies and processing water recovery and reducing its consumption.

**INNOVATIVE TECHNOLOGIES AND INDUSTRIAL PROCESSES (HORIZONTAL APPROACH)**
- Multifunctional materials and composites with advanced properties, including nano-processes and nano-products,
- Sensors (including biosensors) and smart sensor networks,
- Smart grids and geo-information technologies,
- Electronic conducting polymers,
- Automation and Robotics processes,
- Optoelectronic systems and materials.
PARP has analyzed over 6,200 projects that have received support under IE OP (Operational Programme Innovative Economy, 2007-2013), for which support has been granted under the following measures:

• 1.4. Support for early R&D projects,
• 3.1 Initiating of innovative activity,
• 4.1. Support for implementation of R&D,
• 4.2. Stimulation of R&D activity of enterprises,
• 4.4. New investments of high innovative potential,
• 6.1. Passport to Export,
• 5.1 Support for development of intraregional cooperatives,
• 5.2 Supporting business environment institutions providing pro-innovation services and their supra-regional networks,
• 5.3 Support for innovation centers.

Polish companies supported within IE OP specialize in particular in:

✓ commercial activities (959 projects)
✓ information and communication - mainly ICT - (878 projects)
✓ chemical and pharmaceutical industries, ceramics and processing of non-metallic materials (831 projects)
✓ professional, scientific and technical (756 projects) and
✓ production of electrical appliances, machinery and equipment (452 projects).
Map of smart specialization in Polish regions

Smart specialization - regional perspective

- Business services
- Smart grids
- Water economy
- Wood furniture
- High-quality food
- Safety food, Automotive
- Industrial automation
- Medical (medical services, health tourism)
- Creative economy
- Food sector
- High technology
- Environment
- ICT
- Agri-food technologies
- R2B services
- R&D services
- Medicine
- Pharmacy
- Cosmetics
- Innovative materials
- Computing
- Agriculture
- Agri-food processing
- Hardware trade
- Foundry
- Industry trade fair
- Health tourism
- Electrical equipment
- Aviation
- Ecology (food, tourism)
- ICT
- Life-sciences
- Chemistry
- ICT
- Sustainable energy
- Biotechnology
- Pharmaceuticals
- Nanotechnology
- Chemistry
- IT
- Energy and green energy
- Biology
- Biotechnology
- Pharmaceuticals
- Nanotechnology
- Chemistry
- IT
- Energy and green energy
- Building technologies
- Wood
technologies
- Engineering
- Chemical
- Energy industry
- Agro food
- Life science
- Bioeconomy
- Maritime activities
- Logistics
- Metal industry machine
- Knowledge-based services
- Metallurgy
- Informatics
- Wood-paper
- Tourism
- Advanced materials
- Microelectronics
- Biotechnology
- Pharmaceuticals
- Nanotechnology
- Chemistry
- IT
- Energy and green energy
- Building technologies
- Wood technologies
- Engineering
- Chemical
- Energy industry
- Agro food
- Life science
- Bioeconomy
- The East direction
- Bioeconomy
- Food industry
- Biomedical products
- Bioenergy products
- Highly processed products
- IT and Automation
- Medical and health benefits
- Electronics
- Aviation
- Ecology (food, tourism)
- ICT
MGI identify 5 broad groups of technologies for the future:

- Global innovation for local markets
- Regional processing
- Energy/resource-intensive commodities
- Global technologies/innovators
- Labor-intensive tradables

The most frequently fields of smart specialisation by Platform RIS3 data based:

- Energy
- Life-science
- ICT
- Environment
- Agro-food
- Tourism
- New materials

Key Enabling Technologies (KET’s) by European Commission (2011):

- Nanotechnology
- Micro and Nanoelectronics
- Industrial Biotechnology
- Photonics
- Advanced Materials
- Advanced Manufacturing Systems
## Smart specialisation – innovation policy experts in Poland perspective

**Question:** In your opinion, which of the following functions of the national framework of smart specialisation in Poland is the most important, from the perspective of the needs of the Polish economy? N=44, 2013.

<table>
<thead>
<tr>
<th>Function</th>
<th>I agree</th>
<th>I don't agree</th>
<th>Undecided</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is necessary to identify priority economic specialisations to support R&amp;I in the new financial perspective for 2014-2020</td>
<td>39 (25)</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Smart specialisation will focus and effective use of EU funds after 2014</td>
<td>40 (25)</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Smart specialisation requires to improve the coordination of programs to support R&amp;I and growth implemented at national and regional level</td>
<td>36</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Smart specialisation will stimulate development of a mechanism for identifying, reviewing and updating the catalog of priority economic specialisations supported by public funds in Poland</td>
<td>33</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Increasing the share of private investment in R&amp;I in strategic areas of the economy</td>
<td>34</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Smart specialization will increase the innovative solutions implemented in Polish enterprises</td>
<td>40 (33)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Others: increasing business-academia cooperation;</td>
<td>10</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Smart specialization will improve the process monitored prospective trends in the economy</td>
<td>10</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>
Smart specialization - challenges

**Methodology**
level of depth of analysis

**Central vs. regional aspects:**
The case of coordination & negotiations

**Implementation mechanisms**
for central & regional level

**Financing:**
Separate financial allocations vs.
priority to selected areas/technologies

**Glass ball case:**
How to foresee the future in today’s turbulent times?
What are the challenges, benefits and possible limitations of implementing the concept of smart specialisation through the EU Structural Funds?
THANK YOU FOR YOUR ATTENTION!

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