TOGETHER IN CREATIVITY (INNOVATION) FOR A SUSTAINABLE DEVELOPMENT

Prof. dr. Marko Jaklič
University of Ljubljana
Faculty of Economics
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GDP per capita (2013): Qatar (1), Slovenia (35).


Long-term versus short-term?!
Being in the middle of the 3rd and at the beginning of the 4th industrial revolution
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TECHNOLOGICAL DEVELOPMENT
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CONVERGENCE

TECHNOLOGIES
(Key Enabling Technologies - KET)

- Information and communication technologies
- Nanotechnologies
- Advanced materials
- Biotechnology
- Process technologies (robotics, ...)
- Technologies for sustainable development

MARKETS, TRENDS, NEEDS

- Life and health
- Sustainable transport, mobility
- Sustainable energy
- Food (and its safety)
- Inclusive, innovative and safe society
- Efficient use of resources
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COLLABORATION, OPEN INNOVATION, …
NEW PRODUCTION MODELS

3D printing: Adding (additive) layers of materials
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AUTOMATISATION
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1. 3rd (4th) industrial revolution (digital economy and society)
2. Globalization

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## I. HOW COMPANIES ARE RESPONDING?

Field of innovation in **OPEN INNOVATION SYSTEMS**

<table>
<thead>
<tr>
<th>Research and other supporting institutions</th>
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Reversed leadership pyramid to support entrepreneurs

- **Entrepreneurial process**
- **Integration process**
- **Renewal process**

- **ENTREPRENEURS** - pursuing opportunities
- **COACHES** - support, mentoring, monitoring
- **TOP MANAGEMENT** - strategy-organization process
Design-thinking as a revolution in business and innovation

We are at the beginning of the design revolution in business. It is not enough that business people better understand design. They need to become designers."

prof. Roger Martin, dean at Rotman Business School

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Steps in d-thinking:
1. Empathy (deep understanding of a customer)
2. Vision of a concept
3. Strategic business design (idea becomes reality)
II. HOW (SUPRA)NATIONS ARE RESPONDING?

National innovation system (NIS)
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National innovation system (NIS)

Open method of coordination
Slovenia NIS Strengths

Research and Development Expenditure, 2013

- R&D spending intensity highest of Eastern European countries, 2.8% in 2013
- High levels of scientific output (papers per thousand population)

Source: Eurostat

[Graph showing research and development expenditure across different countries, with Slovenia highlighted near the top.]
Slovenia NIS Weaknesses

- Few high tech firms
- Few triadic patents
- Weak relationships among companies and between private sector and public science.

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Source: Community Innovation Survey
### Slovenia NIS Weaknesses

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**Bottom Line:** Low labor productivity; over reliance on low tech industry; limited technology industry exports; lower value added
Summary of key weakness: „The Bridging Problem“
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(International) Bridging

Science Technology
Summary of key weakness: „The Bridging Problem“
What kind of open innovation policies are being used?
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- **European level:**
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How does PCP (pre-commercial procurement) work in practice? - In PCP a Contracting Authority issues an open Call for Tenders to compete to win a PCP Framework Contract. The Contracting Authority evaluates the received responses and awards contracts to several suppliers who will start addressing the given socio-economic problem posed by the Contracting Authority. Each winning supplier will start designing and exploring the feasibility of their innovative ideas in the first phase. On completion of this phase, a cohort of selected suppliers participates in a “mini-competition” to advance to the next phase. Each winning supplier develops their prototype in the second phase. Likewise, on completion of the prototype development, the cohort participates in another “mini-competition” to advance to the third and last phase where each winning supplier develops their small-batch production of products/services.

It is worth bearing in mind that PCP is focused “on the development of new technologies and not on the development of incremental or transitional technologies. (...) In PCP the public sector is taking the initiative in order to get access to innovation to improve its operations and to solve major socio-economic problems for the benefit of society”.

(Draft PCP Manual A practical guide to PCP Implementation for PROGR-EAST WP4 Pilots May 13th 2012)

Using structural funds in an international EU way (the case of Cloud Computing):

The objective of the workshop (February 6, 2014) is to discuss cloud-related projects in Member States that would provide an added value in respect to ICT investment priorities in the European Regional Development Fund. Cloud computing can be a major enabler for innovation, growth in productivity and competitiveness, therefore it is important to identify and address barriers to take-up of cloud computing services at regional level. The workshop aims to identify top challenges of financing cloud-related projects within SMEs and the public sector by the ERDF.

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**Challenge:** how to develop national policies to meet EU (and other) international open innovation policies and challenges from emerging new GVCs?
Basic Policy Instruments for Innovation Partnerships in Slovenia, 2009-2013

330 mio €

Centers of Excellence:
- Led by public research with private sector partners (8)
- Basic research with a “line of sight” to potential market applications
- Fully supported with public funds

Competence Centers:
- Led by nonprofit consortium. Includes significant participation by public science (7)
- Applied research with nearer term market results
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Development Centers:
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- Develop industrial capabilities through applied research
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However: too little (real) international networking (positioning) for future value-chains
KICs EUROPEAN IMPACT

Climate KIC:
- Co-location centre
- RIC (Regional Implementation and Innovation Centre)

EIT ICT Labs:
- Co-location centre
- Associate Partner

KIC InnoEnergy
- Co-location centre
WHAT IS NEXT?

• Smart specialization strategy and new policy instruments?
• What kind of design policy for Slovenia?
• ...
