Smart by oneself? Analysis of Russian regional innovation strategies within S3 framework

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Outline

1. What is it “to be smart” for a regional innovation strategy (RIS)? How can one gain smartness?
2. Testing innovation strategies of 7 Russian regions to fulfil S3 criteria: hypotheses, data, outcomes.
3. Conclusions on S3 implementation in Russia and on S3 concept evolution.
Academic vision of smartness for a regional innovation strategy: internal efforts

**Place-based**
- Tailoring and fine-tuning to the local context (*Barca, 2009; McCann & Ortega-Argilés, 2016*), using localised know-how and assets to ensure differentiation and unique position in the market (*OECD, 2013; Boshma et al. 2012*).

**Evidence-based**
- Ensuring the broader use of evidence-based methods (*Kroll, Müller, et al., 2014; Fraunhofer ISI, 2013*), verifiable, submitted to scrutiny (*Barca, 2009*).

**Diversified**
- Based on related diversification and greater variety (*Boschma, 2014; McCann & Ortega-Argilés, 2015*), cross-sector links (*Foray et al., 2012*) and “cross-fertilization” of ideas between different technological domains (*Iacobucci & Guzzini, 2016*), considering the heterogeneity of research and technology specialization patterns (*Giannitsis, 2009*).

**Broad-minded**
- Shifting from R&D-focused innovations to practice-based, providing solutions to societal problems and those articulated by businesses (*Hughes, 2012; Moretti, 2012; World Bank, 2010*), with a focus on the technological upgrading of traditional activities, medium and low technology sectors (*Kroll, 2015*).

**Future-oriented**
- Encouraging investment in the domains that will complement existing skills to create future capability and comparative advantage (*Foray et al., 2011; Hausmann & Hidalgo, 2009*).
Academic vision of smartness for a regional innovation strategy: external expertise and synchronization

Outward-looking

• Incorporating international benchmarking, global value chain considerations (*Thissen et al.*, 2013) and technologically open policy settings to allow for the identification of niches (*Kroll*, 2015).
• Accounting for potential relations with other regions, on the basis of complementarities or similarities between the chosen domains (*Iacobucci & Guzzini*, 2016): “Match what you have with what the rest of the world has” (*Foray et al.*, 2012)

Synchronised, well-governed and balancing the top-down and bottom-up approaches

• Synched with national and regional strategies, e.g. STI, R&D, industrial (*OECD*, 2013; *Leonard*, 2016).
• Along with EDP (*Foray et al.*, 2011) the strategy design must rely, at least at the beginning, on a top-down approach (*Miren Estensoro & Miren Larrea*, 2016; *Kroll*, 2015; *Boschma*, 2014).
What is it “to be smart” for a regional innovation strategy? How can one gain smartness?

**What**

- Smart Strategy
- Unique (i.e. valuable, rare, inimitable and non-substitutable)

**How**

- **Regional Governments**
  - Localized knowledge (entrepreneurial discovery)
- **(supra) National Governments**
  - Global knowledge (national priorities + strategies of other regions and courtiers)

**S3 Guide**

- Many of the underlying elements of the S3 approach are not new (OECD, 2013).
- Open information access.
- LOW “import” costs.
- Decision-making on the regional level is sufficient

**S3 Platform**

- Institutional innovation
- Scarce methodical and academic outlook (McCann & Ortega-Argilés, 2016; Capello & Kroll, 2016)
- HIGH “import” costs.
- Decision-making on the (supra) national level is required
Hypotheses

1) Most S3 principles are considered in current regional innovation strategies without formal recommendations (S3 Guide).

2) With national level missing (uniform rules for selecting priorities, single analytical database, organizational support, expertise and synchronization) a strategy is hardly to become SMART.

Even strong innovative regions are unable to design a smart strategy alone due to the lack of uniform data on peers.
Testing innovation strategies of 7 Russian regions according to S3 criteria. Why Russia?

1. Large economy

9th UN rank by world population in 2016: **146,5 mln people**
EU (27) – **505,9 mln people**; USA – **323,1 mln people**; EEU – **182,7 mln people**

*Sources: Eurostat, 2016; U.S. Census Bureau, 2016; ЕЭК, 2016; Rosstat, 2016*

6th IMF rank by GDP (PPP) in 2016: **$3,75 T**
EU (27) – **$19,97 T**; USA – **$18,56 T**;
EEU – **$4,84 T**

*Source: International Monetary Fund, 2016*

2. Regionally diverse country

85 regions

3.3 times difference by average income of the population per capita between 10% top and lagging regions

Average income of the population per capita, Euro (2014)
*Source: Rosstat, 2016*
Federal country with regions empowered to pursue various policies

Quality of regional innovation policy in Russia (2014)

Criteria of regional innovation policy quality
- Availability of regional innovation development strategy / section on promotion of innovation in regional development strategy
  - Number of regions: Yes 42, No 41
- Priority innovation development areas in regional territorial development schemes
  - Number of regions: Yes 20, No 63
- Availability of specific legislation establishing principles of regional innovation activities
  - Number of regions: Yes 65, No 18
- Availability of specialised innovation promotion programmes in the region
  - Number of regions: Yes 55, No 28
- Availability of consultative innovation policy bodies to assist regional administration
  - Number of regions: Yes 50, No 33
- Availability of development institutes responsible for supporting innovation in the region
  - Number of regions: Yes 29, No 54


~ 60% of Russian regions pursue targeted innovation policies
Database of the research (2014)

- Close to all Russian regions have Socio-Economic Strategies
- **35** regional Socio-Economic Strategies have innovation-relevant sections
- **7** Russian regions have Innovation strategies
- **3** Russian regions have Innovation concepts

Regional Innovation Strategies in Russia (2014) – our sample
Regions that designed Innovation strategies vary in terms of economic development (from 12th to 82nd ranks by GRP per capita)
Innovation profiles of the selected regions are also diverse

<table>
<thead>
<tr>
<th>Region</th>
<th>Russian Regional Innovation Index</th>
<th>Socio-Economic Conditions for Innovation Activities SUB-index</th>
<th>S&amp;T Potential SUB-index</th>
<th>Innovation Activities SUB-index</th>
<th>Quality of Innovation Policy SUB-index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tatar Republic</td>
<td>1</td>
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<td>Krasnoyarsk Region</td>
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<td>Sverdlovsk Region</td>
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<td>Chelyabinsk Region</td>
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<td>Stavropol Region</td>
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<td>Kamchatka Region</td>
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<td>Ingush Republic</td>
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Assessment wheel: a method adapted to test Russian RISes for S3 critical factors matching

- Built on the basis of the 6 steps described in the S3 Guide (3 critical factors per each step)
- The scaling from 0 to 1 estimates the evidence provided for matching each critical factor: 0 – no match; 0,5 – unclear match; 1 – clear match
- Final result in a form of "spider graph" highlights strengths and weaknesses of a RIS

### RIS3 Guide Steps

<table>
<thead>
<tr>
<th>RIS3 Guide Steps</th>
<th>Critical Factors</th>
<th>No. of matches (0 / 0,5 / 1)</th>
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<tbody>
<tr>
<td>1. ANALYSIS OF REGIONAL CONTEXT</td>
<td>Regional / National Assets</td>
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<td>Outward Dimension</td>
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<td>Entrepreneurial Dynamics</td>
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<td>2. GOVERNANCE</td>
<td>Governance Structures</td>
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<td>Broad Participation</td>
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<td>Management &amp; Communication</td>
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<td>3. SHARED VISION</td>
<td>Broad View of Innovation</td>
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<td>Grand Challenges</td>
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<td>Scenario Analysis</td>
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<td>4. IDENTIFICATION OF PRIORITIES</td>
<td>Priorities setting</td>
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<td>Consistency</td>
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<td>Critical Mass</td>
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<td>5. POLICY MIX</td>
<td>Roadmap</td>
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<td>Balance</td>
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<td>Framework Conditions</td>
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<td>6. MONITORING &amp; EVALUATION</td>
<td>Output &amp; Result Indicators</td>
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<td>RIS Update</td>
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Russian RISes highlight framework conditions, have priorities identified and monitored, but lag in most analytical, governance and visioning issues.

2. Testing innovation strategies of 7 Russian regions
Russian regional innovation ranks and no. of S3 matches hardly correlate

Distribution of matches according to S3 critical factors

<table>
<thead>
<tr>
<th>Russian regional innovation ranks</th>
<th>Sverdlovsk Region</th>
<th>Kamchatka Region</th>
<th>Chelyabinsk Region</th>
<th>Tatarstan Republic</th>
<th>Stavropol Region</th>
<th>Ingush Republic</th>
<th>Krasnoyarsk Region</th>
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- 6 steps in S3 design
- 3 critical factors within each step
Both peers ranking 1\textsuperscript{st} and 82\textsuperscript{nd} in Russian regional innovation rating have quite similar RIS structure: each step is present, but incomplete.
Most Russian RISes prioritize “fashionable” sectors: ICT, nano-, biotech etc.

How evidence-based are these choices?
ICT as a RIS priority is evidence-based in only 1 out of 5 regions

Source: Rosstat, 2016
Nanotech as a RIS priority is evidence-based in 2 out of 3 regions. Tatarstan - ?

Despite the evidence-based capacity in nanotech we find no nanotech mentioned in the Tatar Republic RIS.

Source: Rosstat, 2016
KPIs of Russian RISes tend to monitor R&D and Science

No. of RISes with the indicators mentioned

- Basic macroeconomic indicators: 1
- Education potential of the population: 2
- Development of information society: 1
- R&D funding: 4
- R&D personnel: 4
- R&D productivity: 6
- Regional budget R&D and innovation: 0
- Innovation activities of organisations: 5
- Small innovative companies: 3
- Expenditures on technological innovations: 0
- Productivity of innovation activities: 5

S3 for Russia: research conclusions

1. Russian RISes (4 accepted before 2012, i.e. without S3 Guide) basically follow all 6 S3 design steps, but fail to complete each of 18 critical factors.

2. Russian RISes in terms of S3 concept:
   - lack of entrepreneurial discovery process (broad participation, management and communications) and external expertise (outward dimension, grand challenges)
   - science-focused monitoring systems, R&D vision of innovations.
   - more declarative than instrumental: off-balanced KPIs, no road maps, updating mechanisms
   - priorities are selected, but without cross-sectorial / structural change / future markets / GPT – orientation.

Even regions – strong innovators or regions that formally considered many of common S3 principles fail to find their smart specialization, since they are outside the system ensuring uniform evidence-based comparability.
S3 concept evolution

1. **Smart** is a characteristic for the **system of regions** (e.g. regions registered on S3 Platform) and not a single region (impossible to be “smart by oneself”).

2. Uniform rules for priorities choice, single analytical database, organizational support, expertise and synchronization are **required**.

3. These requirements (NOT the priorities) should be determined at the **superior level of governance** (national, supra-national) as the “second foot” of the S3 concept.

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**Scenario 1**

**Global Smart System:**
- more regions to join EU S3 Platform (follow Norway, Turkey, Serbia and Moldova)

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**Scenario 2**

**Alternative Platforms:**
- within countries of great regional variety (Russia, the USA, China);
- within economic unions (EEU, APEC, MERCOSUR).
Thank you!

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