Smart by oneself? Analysis of Russian regional innovation strategies within S*3* framework

Ekaterina Islankina, Evgeniy Kutsenko, Alexsey Kindras

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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 S*3* criteria: hypotheses, data, outcomes.
3. Conclusions on S*3* implementation in Russia and on S*3* 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

- Ensuring improved policy coordination (*Kroll, Müller, et al., 2014*), clarified division of tasks for policy design and implementation among all parties (*Barca, 2009*), with multi-level governance set-ups to maximize engagement of local actors in partnership with central government actors (*McCann & Ortega-Argile, 2014*).
- 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	(supra) National Governments
Localized knowledge (entrepreneurial discovery)	+ Global knowledge (national priorities + strategies of other regions and courtiers)
S3 Guide	**S3 Platform**

- 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

- 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 S*3* principles are considered in current regional innovation strategies without formal recommendations (S*3* 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**

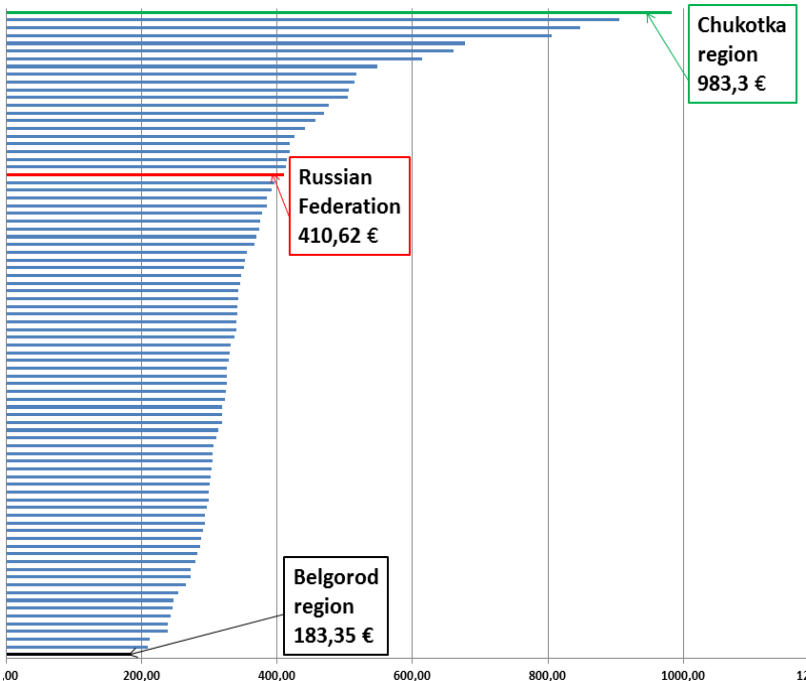
EU (27) – $19,97 T; USA – $18,56 T;
EEU – $4,84 T

Source: International Monetary Fund, 2016

2. Regionally diverse country

85 regions

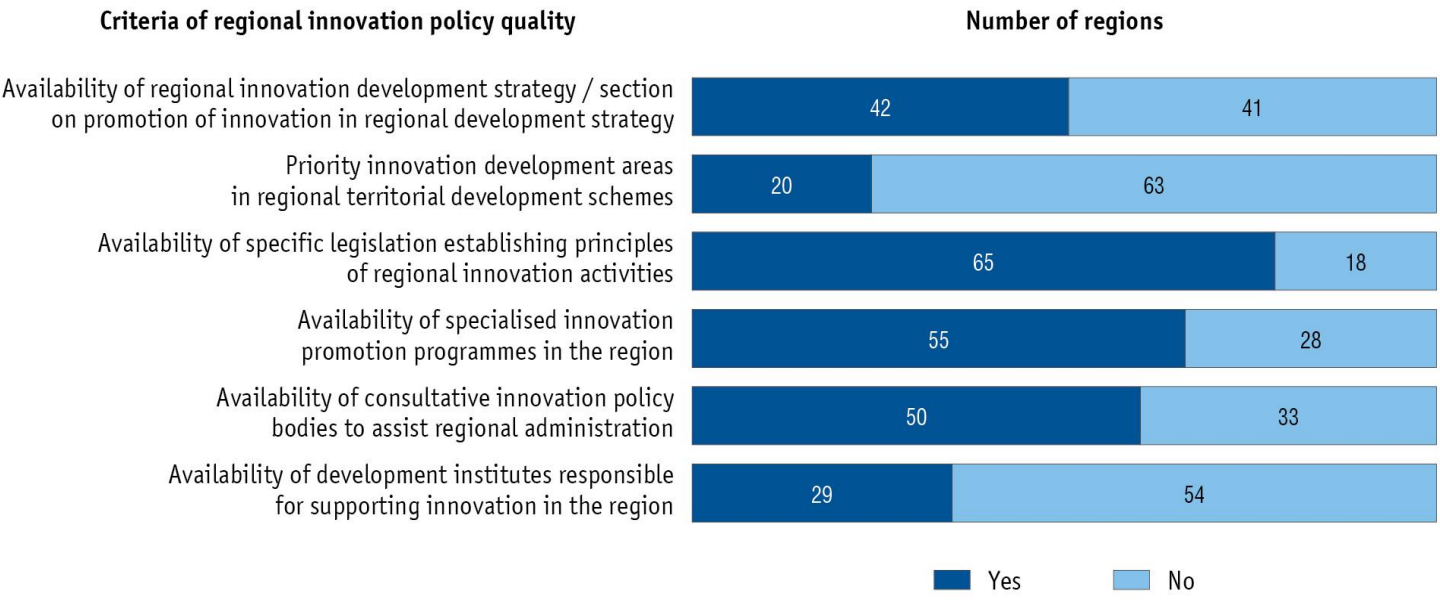
3,3 times difference by average income of the population per capita between 10% top and lagging regions



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)



Source: HSE (2016) Russian Regional Innovation Ranking. Issue 4.

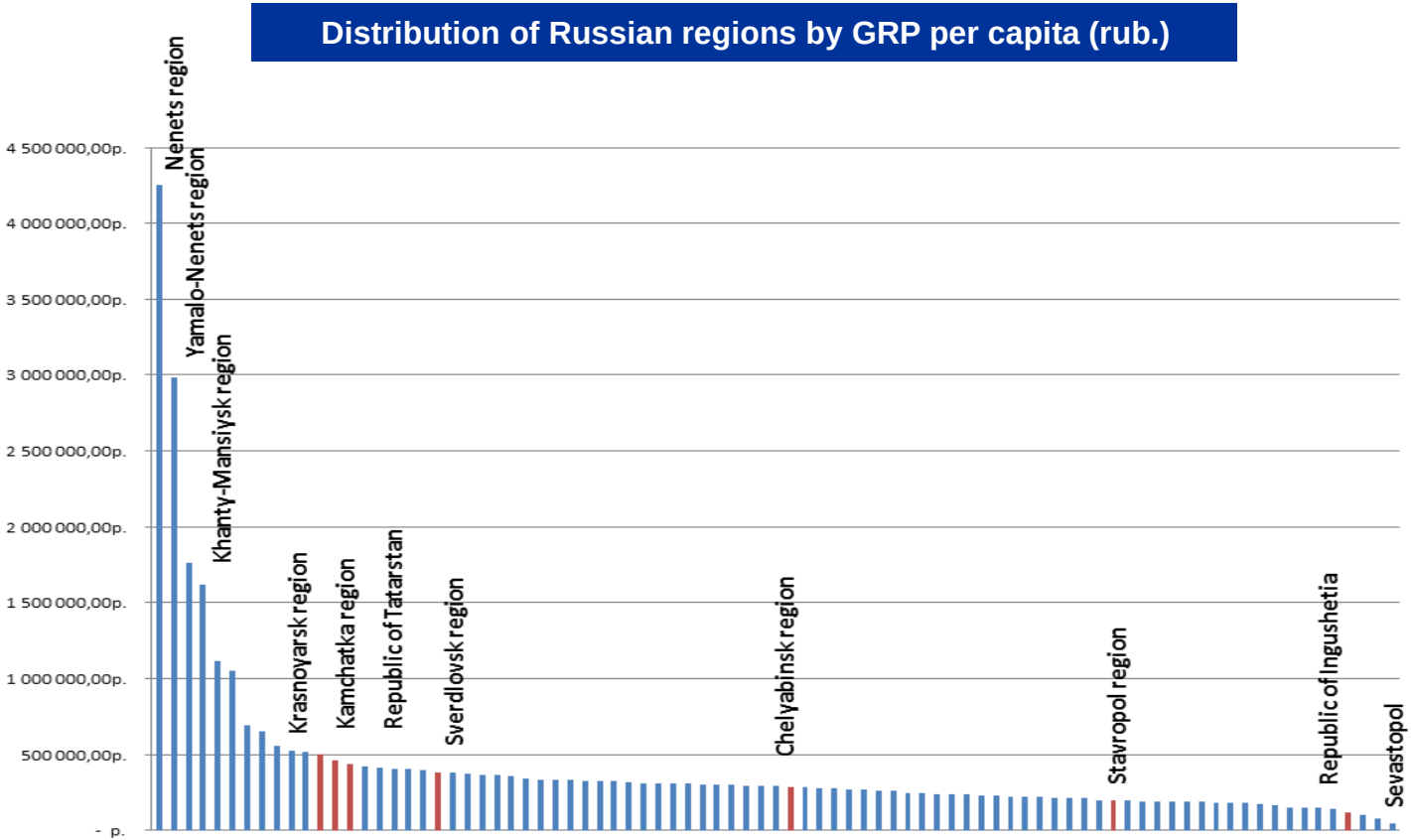
~ 60% of Russian regions pursue targeted innovation policies

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

Ranks of the selected regions according to the values of HSE Russian Regional Innovation Index and Sub-indices

Region	Russian Regional Innovation Index	Socio-Economic Conditions for Innovation Activities SUB-index	S&T Potential SUB-index	Innovation Activities SUB-index	Quality of Innovation Policy SUB-index
Tatar Republic	1	3	17	2	1
Krasnoyarsk Region	12	19	19	22	6
Sverdlovsk Region	13	14	13	14	26
Chelyabinsk Region	18	12	28	21	29
Stavropol Region	23	24	51	39	10
Kamchatka Region	71	77	77	66	49
Ingush Republic	82	81	83	82	60

Source: HSE (2016) Russian Regional Innovation Scoreboard. Issue 4.

Assessment wheel: a method adapted to test Russian RISes for *S3* critical factors matching

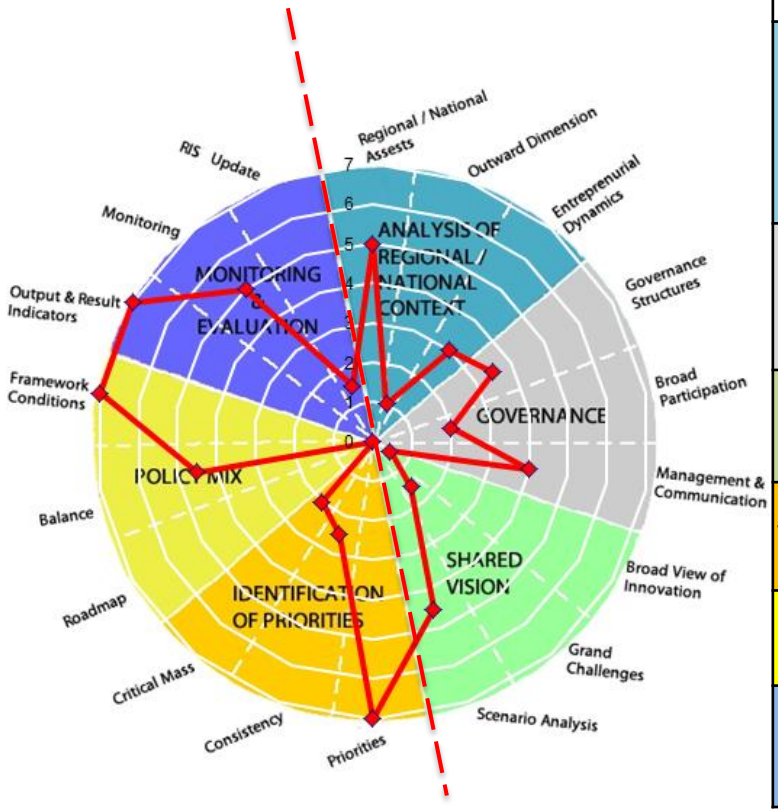
- Built on the basis of the 6 steps described in the S*3* Guide (3 critical factors per each step)
- The scaling from 0 to 1 estimates the evidence provided for matching each critical factor: **0 – no match; 0,5 – unclear match; 1 – clear match**
- Final result in a form of "spider graph" highlights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

RIS assessment pattern

Source: adapted from S3 Platform
http://s3platform.jrc.ec.europa.eu/ris3-assessment-wheel?inheritRedirect=true

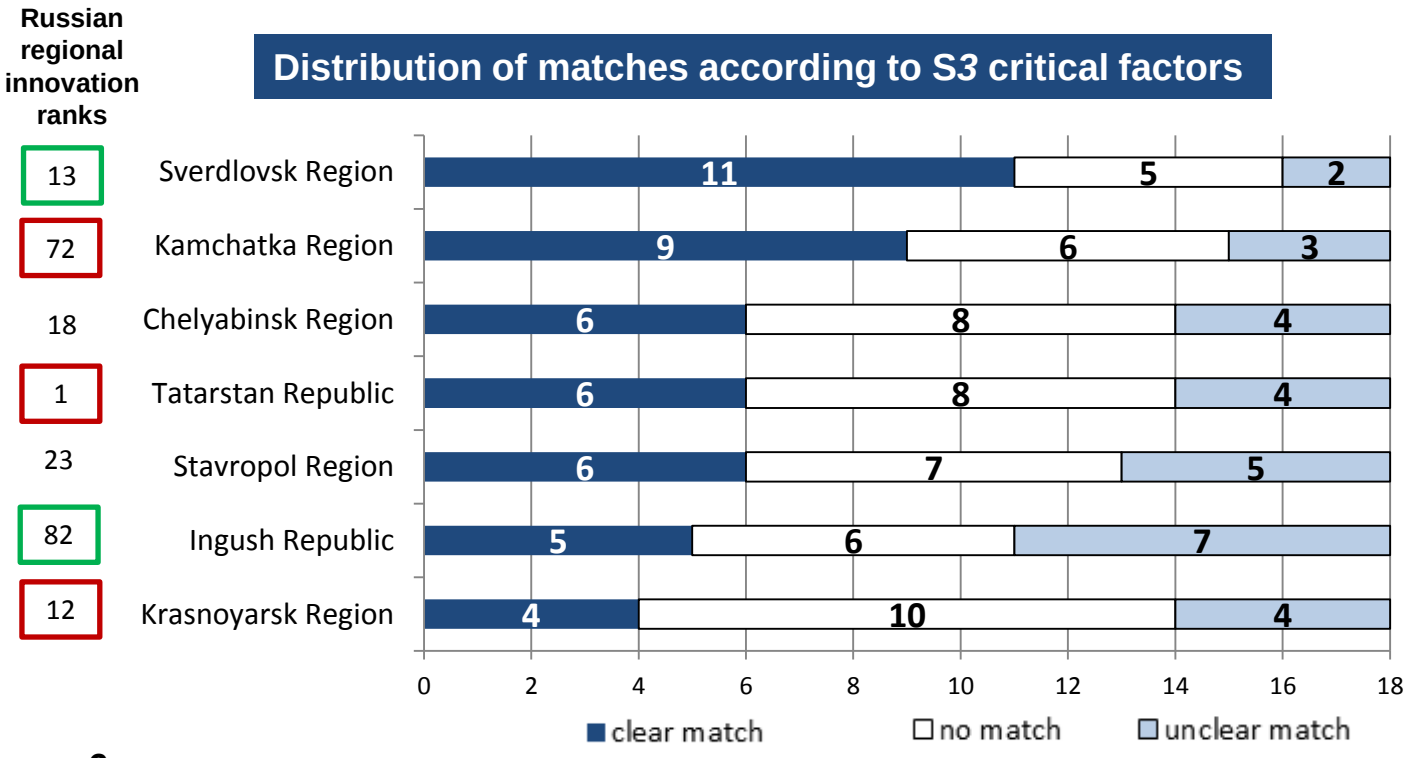
RIS3 Guide Steps	Critical Factors	No. of matches (0 / 0,5 / 1)
1. ANALYSIS OF REGIONAL CONTEXT	Regional / National Assets	
	Outward Dimension	
	Entrepreneurial Dynamics	
2. GOVERNANCE	Governance Structures	
	Broad Participation	
	Management & Communication	
3. SHARED VISION	Broad View of Innovation	
	Grand Challenges	
	Scenario Analysis	
4. IDENTIFICATION OF PRIORITIES	Priorities setting	
	Consistency	
	Critical Mass	
5. POLICY MIX	Roadmap	
	Balance	
	Framework Conditions	
6. MONITORING & EVALUATION	Output & Result Indicators	
	Monitoring	
	RIS Update	

Russian RISes highlight framework conditions, have priorities identified and monitored, but lag in most analytical, governance and visioning issues



RIS3 Guide Steps	Sections (Critical Factors)	No. of matches	Total
1. ANALYSIS OF REGIONAL CONTEXT	Regional / National Assets	5	9
	Outward Dimension	1	
	Entrepreneurial Dynamics	3	
2. GOVERNANCE	Governance Structures	3,5	9,5
	Broad Participation	2	
	Management & Communication	4	
3. SHARED VISION	Broad View of Innovation	0,5	6,5
	Grand Challenges	1,5	
	Scenario Analysis	4,5	
4. IDENTIFICATION OF PRIORITIES	Priorities setting	7	11,5
	Consistency	2,5	
	Critical Mass	2	
5. POLICY MIX	Roadmap	0	11,5
	Balance	4,5	
	Framework Conditions	7	
6. MONITORING & EVALUATION	Output & Result indicators	7	13,5
	Monitoring	5	
	RIS Update	1,5	

Russian regional innovation ranks and no. of *S3* matches hardly correlate

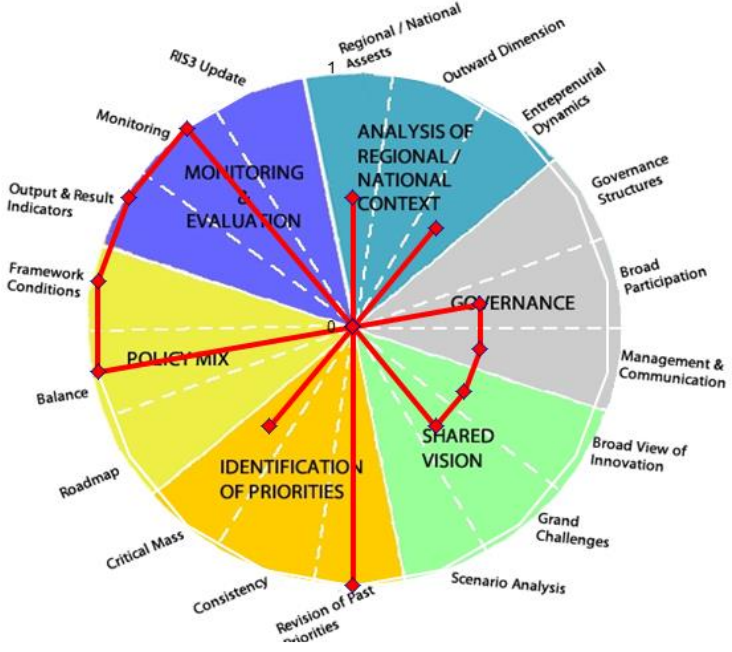


- **6** steps in S*3* design
- **3** critical factors within each step

Both peers ranking 1st and 82nd in Russian regional innovation rating have quite similar RIS structure: each step is present, but incomplete

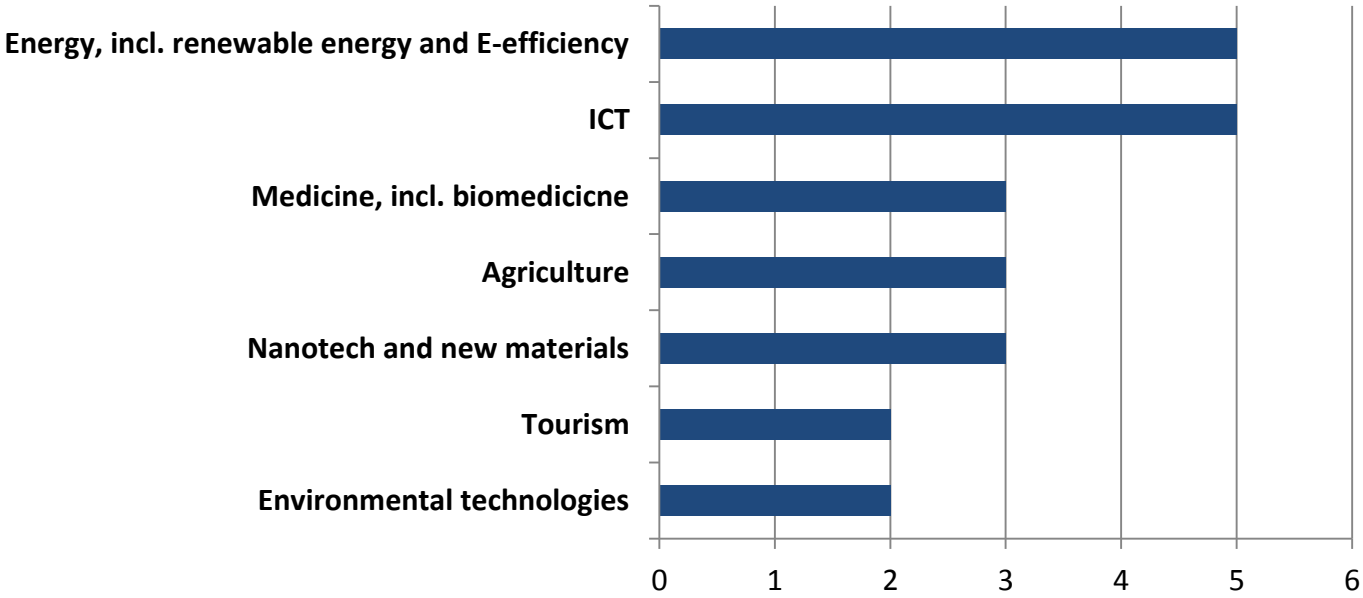
RIS Assessment Wheel results for Tatar republic (1st RRII rank)

RIS Assessment Wheel results for Ingush republic (82nd RRII rank)



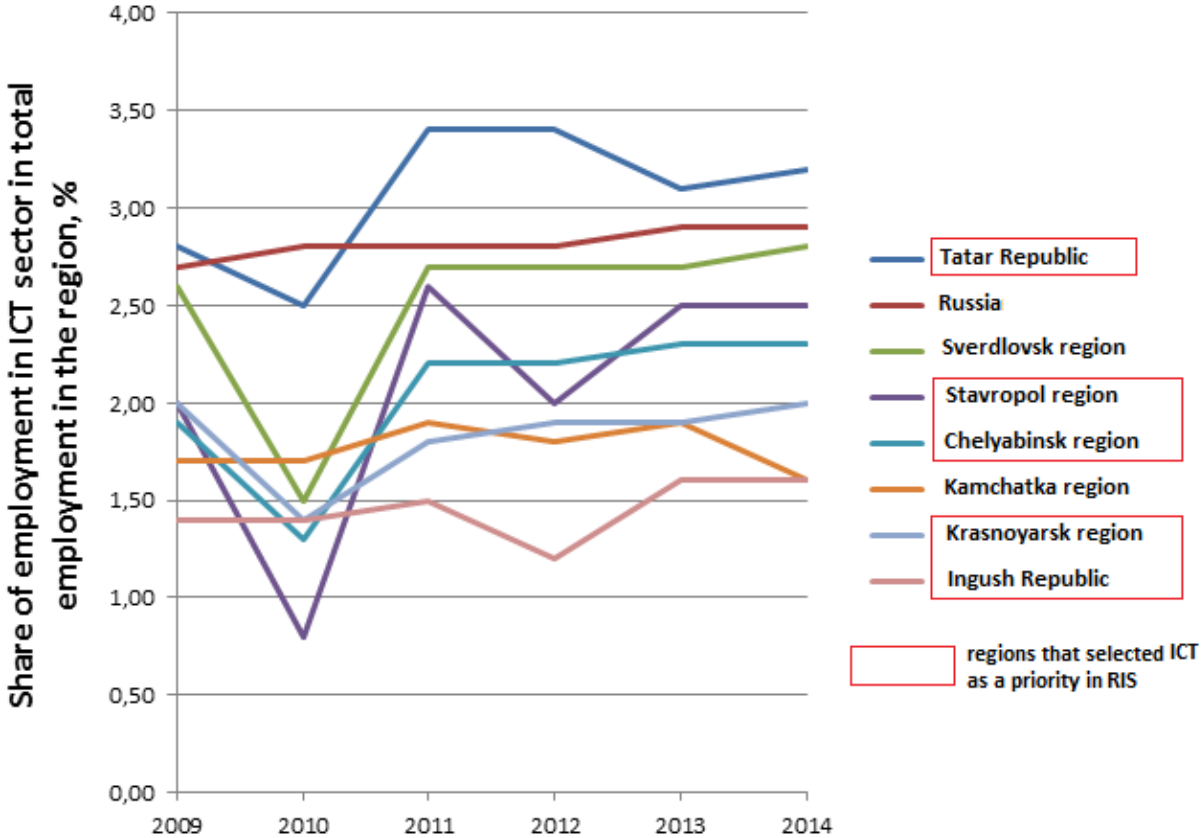
Most Russian RISes prioritize “fashionable” sectors: ICT, nano-, biotech etc.

No. of strategies with the sectors indicated



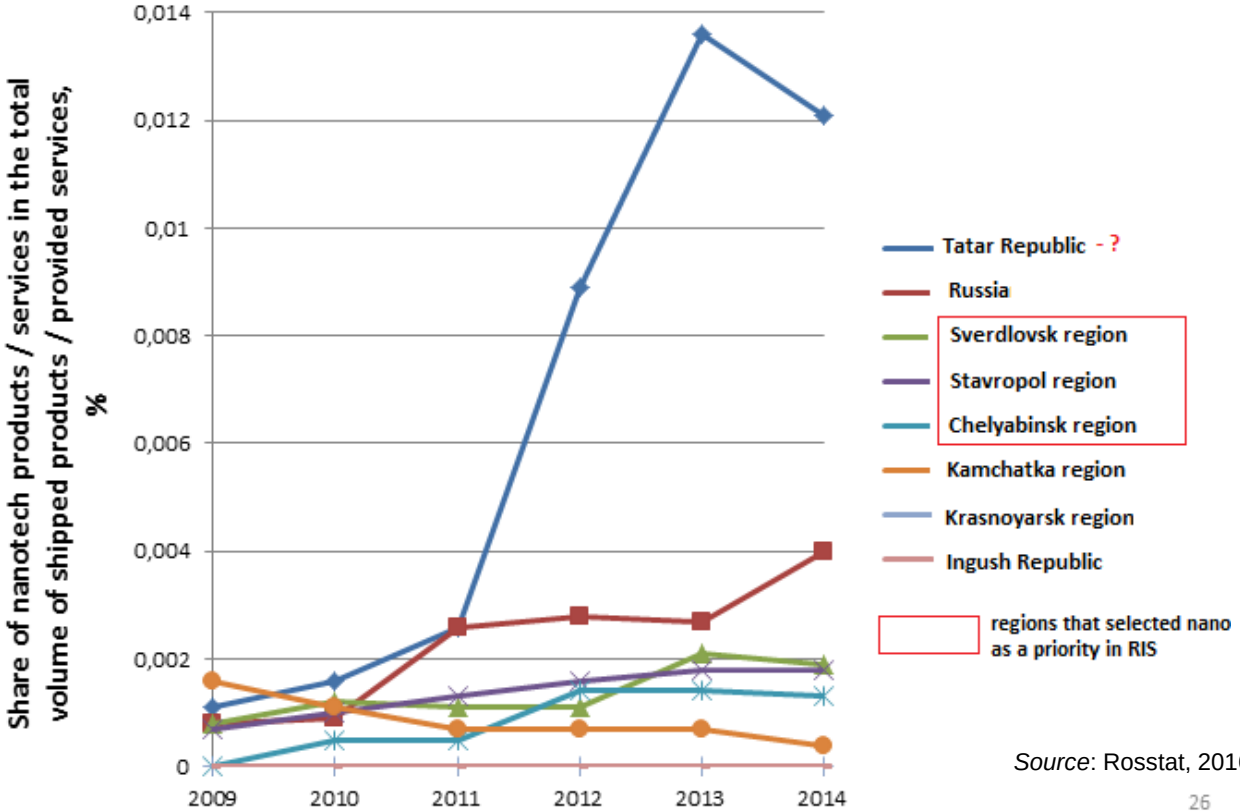
How evidence-based are these choices?

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 - ?



Source: Rosstat, 2016

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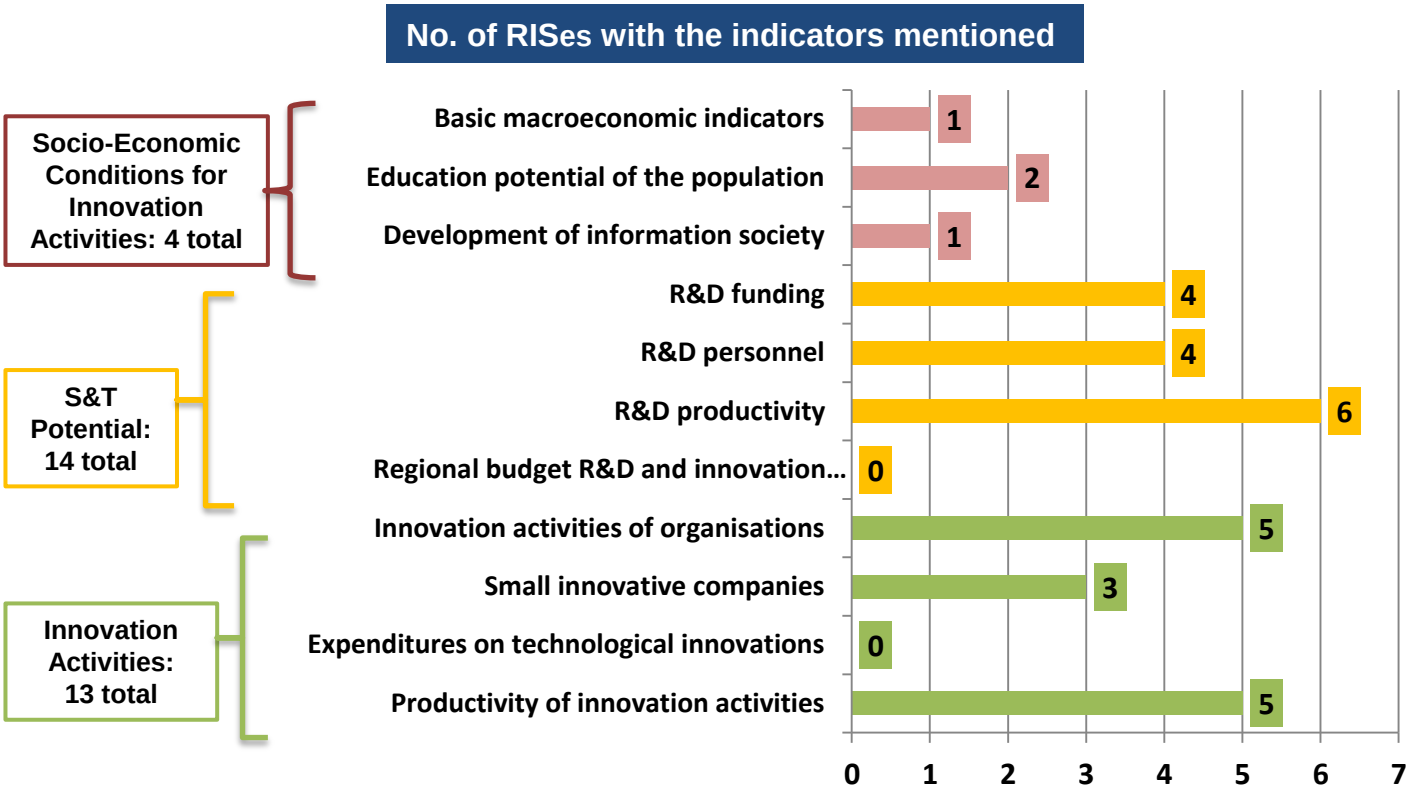
Despite the evidence-based capacity in nanotech we find no nanotech mentioned in the Tatar Republic RIS

KPIs of Russian RISes tend to monitor R&D and Science



Source: HSE (2016) Russian Regional Innovation Ranking. Issue 4.

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.

S3 Platform evolution

Scenario 1

Global Smart System:

- more regions to join EU S3 Platform (follow Norway, Turkey, Serbia and Moldova)

Scenario 2

Alternative Platforms:

- within countries of great regional variety (Russia, the USA, China);
- within economic unions (EEU, APEC, MERCOSUR).

Thank you!

eislankina@hse.ru