

Spatial Development and Innovation in Russia

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The guiding concept of EU cohesion policy, smart specialization, emerges from a regional focus. EU states and many others have adopted planning measures to foster local innovation in order to benefit regional and national growth. As highlighted in some of the articles in this issue, smart specialization promotes the welfare of cities of all kinds, including those falling behind as well as those more advanced. In the world's most competitive cities, researchers, entrepreneurs and policy makers achieve partnerships and firms in the regions as well as capitals have global ties [Tödting, Tripp, 2005]. In less competitive cities, and parts of cities, place-based policies can help turn single industry towns into less compact polycentric urban regions [Musterd et al., 2006]. Regional and urban-oriented cohesion policy reflects a systems approach to both distribution and innovation, a spatial development plan to integrate networks and trade for faster-paced growth. Initiatives, forged in STI governance concepts, focus on enhancing demand and improving supply chains to boost local capacity to absorb new technologies. This is a policy for distributed growth and for powerful local outreach to global innovation.

The regional strategy approach reflects theoretical work in the new economic geography and an analytical shift among EU policy leaders in alignment with thinking on the knowledge economy. Public policy, coordinated among sectors and social programs, aims to narrow the wide income gaps among regions distant from each other in large federations such as the EU and the Russian Federation. Indeed, globally, as well as in Europe, the regional income gap is larger than the gap among nations. Putting regional disparities forward as a point of departure for the great share of cohesion aid acknowledges the sharp departure in recent years from development policies of the past few decades. In the 1970s, international agencies, such as the World Bank and the IMF grew in influence due to development economists who then focused on basic needs, employment and redistribution. In the 1980s, however, widespread indebtedness, largely in response to a sharp rise in oil prices, shifted their orientation to stabilization and the reduction of public sector employment and programs in health and education, shrinking the state in a widespread consensus on macroeconomic priorities. Retreat from structural adjustment orientation followed mainly from the massive loss of manufacturing jobs in the 1980s and 1990s drew European policy planners back to their concern with poverty reduction and industrial policy. To these social concerns, they showed their adoption of the systems approach from STI policy in several directions toward long term planning and lagging productivity growth. Endogenous growth theory sharpened their concern about improving human capital, and evolutionary economics underscored its foundation in the framework of policies to strengthen knowledge, learning and institutions. The new knowledge is based on a paradox: while accelerating globalization and the role of the information-driven knowledge economy may seem to reduce the importance of proximity for firm performance, it is now clear that the reverse is true; geographic proximity generates agglomerative advantage, and city regions surge forward as the locus of economic development [Enright, 2000; Asheim et al., 2006].

The theory of place-based policy intervention, therefore, rests on the importance of integrating or coordinating technology policy and industrial policy [Lundvall, 1999; Nelson, Romer, 1996]. It also rests on the potential of regions to respond to policies, whose success depends on the absorption capacity of

local institutions, their capability of absorbing new technologies and making effective use of research connections and government start-up co-funding. One illustration of a regional systems approach, or coordinated technology and industrial intervention, is the green innovation and clustering policies. Policies must address communities with widely divergent technological trajectories and sub-national governance styles; some more than others have interest and background in sustainability and renewable energy. A systems approach aims to bridge knowledge gaps and channel new networks of knowledge from diverse platforms of economic activity across these different and sometimes distant regions [Cooke, 2010]. There is a large element of unpredictability, to be sure, in sometimes untested policy initiatives.

The main kind of regional innovation policies in Russia, therefore, rest on extensive research and regional statistics. From a growing empirical database, projected outcomes of cluster and other integrated STI policies are published in this journal *Foresight and STI Governance* (<https://foresight-journal.hse.ru/en/>). In the 3rd issue (2012), Abashkin and his colleagues [Abashkin *et al.*, 2012] review the recent history of government policy. They show the degree to which the outcome of programs depends upon potential for improvement, especially in the business environment. They trace the empirical data behind recent pilot initiatives for innovative clusters, and they assess the strength of older territorial-industrial clustering. Territorial clusters have been constructed by reviving traditional networks and supply channels from the Soviet era as well as stimulus grants to encourage innovative governance, entrepreneurship, and the adoption of new technologies. Abashkin *et al.* also show the importance of the policy models upon which plans are in part based. Although cluster initiatives have been developed in nearly one-half of the states of Europe, some present particularly successful results, including the German BioRegion and InnoRegion projects and the French Competitive Clusters, which they describe.

Some of the challenges that face Russian regional innovation policies are reviewed in this issue. One is the enormous complexity of urban agglomerations in general and clusters, in particular, involving so many different state and private sector actors, from large and smaller firms, capital providers, and regional and local authorities that can lead to unpredicted outcomes. The density of involved networks can be more important for the long-run outcome of shared innovation than the state's initial stimulus. In the issue, articles show Russian research on applications of Regional Innovation Systems (RIS) to Russian regions and cities. They present qualitative and quantitative estimates of effective policy directions for the future, and they draw on extensive data locally available through ISSEK and other Russian institutes and universities.

The first article is on cluster selection policy, also a measurement issue. Zemtsov *et al.*, in the 'Potential High-Tech Clusters in Russian Regions: From Current Policy to New Growth Areas, raise concerns about the degree to which current measurement indicators predict efficient investment in clusters. The aim of their work is to develop, or refine, a tool determining the selection of future clusters, drawing on the considerable survey and output data for several rounds of applications just submitted.

The authors project that for post-recession Russia the main way to be competitive in global spending on R&D will be to improve the efficiency of innovation space. They link sectors and locations that can be clearly identified for pilot clusters. The development and testing of analytic tools, they conclude, is only one step towards improving the efficiency of cluster policy in Russia, since in Russia, as in Europe, it can be difficult to bring together the theory and the expertise with the empirical reality. More clarification of what makes for success and more testing of those qualities is needed to refine theoretical understandings of the effective results of spending. For example, the literature shows the importance of the number of participants in a cluster, the dominance of private sector operations and the substantial presence of small and medium-size enterprises, but how can these criteria be used comparatively in particular cases for the evaluation of potential success? The empirical data, they argue, in the Bayesian method, should be used in the testing and refinement of those theories. The empirical focus in this work is the indexing of sectors by innovative potential, and the linking of that to the contextual analysis of the regional economic structure. From these indices, they estimate the likelihood that clusters can be successful and funded efficiently. This work contains an invaluable discussion of the key industries of focus for investment in clusters, pharmaceuticals, petrochemicals and automotive industries. The authors point out that there are far more numerous sites for cluster initiatives than previously thought, although current cluster locations in these areas are demonstrating strong positive results.

Two other contributions in this issue are introduced here to review Russian studies of urban innovation policy planning. In Zamyatina and Pilyasov's 'Single-Industry Towns of Russia: Lock-In and Drivers of Innovative Search', the authors focus on managerial support for the unexpected, for community building, and for a new industrial policy. They argue that the main barrier to the introduction of support for new enterprises, and new ways of managing unemployment, is a cognitive one. That is, in the search for ways around challenges affecting small cities that are dependent upon single industrial firms, policy

planners too often narrow their efforts and fail to include at the planning stage those most affected, the unemployed and the communities. This work is rich in its discussion of cases, some Russian mono-industrial towns that have failed to retain the younger population by innovative programs, and some that have succeeded. They document the self-organizing force of local citizens in getting tasks done, such as the building of a bridge, without the help of expensive imported machinery. The authors find ground for optimism in the number of programs aimed at training local entrepreneurs and reducing regulatory barriers to tourism and other local industries. They also see urgency, however, in the take-up of more community-based planning models, especially requiring a more flexible managerial style. To resolve urgent issues, in the instance of a crisis of unemployment in some towns, they see a role for management consultants who can communicate with communities in the short run to build strong solutions for the long run.

Another article on urban innovation is by Boykova, Ilina and Salazkin, the ‘Smart City Approach as a Response to Emerging Urban Challenges’. The article provides an important review of how smart city policies can be more effective. The focus here, as above, is on the management style, the inclusion of diverse management tools to develop projects, so that communities and resources can combine to make better services and governance. They show that “smart” can be applied not only to an energy grid or telecommunications infrastructure. They see current management styles as insufficiently flexible, insufficiently responsive to community voices, and excessively reliant on technologies to ease communications and joint endeavors.

The article thus addresses the global policy interest in smart cities, while it also presents the results of survey research on Russia’s regions. A special expert survey conducted by the HSE Research Institute for Regional and Urban Planning in 2015 allowed them to evaluate the future prospects for diffusing the ‘smart city’ concept in Russian cities. They show that for the population, familiar with the idea of a smart city, its constraints seem real, especially in funding required to produce the intelligent infrastructure. On the whole there was a considerable appeal in smart city design, although surveys do not report awareness of how important citizen involvement can be.

The conclusion of this work is that smart city design will make progress in particular sectors, such as utilities and, especially, in power supply, but the sweeping way in which intelligent management and ICT infrastructure could be used by citizens and communities to assist urban planning is an embryonic idea in Russia, as elsewhere.

Makarov et al. show in “Modeling the Development of Regional Economy and an Innovation Space Efficiency” that university science can provide important guidance to policy makers about efficiently funding innovation. They address a central concern in current global innovation policy, the considerable state expenditure sometimes without clear results: measurement of the efficiency of spending on development initiatives. Efficiency of spending has grown in importance as an issue across Europe and the US in the post-recession era. The rapid reduction of R&D government spending has had discouraging results. Crisis triggered stagnation or decline in innovative activities in OECD countries has been extensive [OECD 2012, p. 3]. Meanwhile, among emerging countries with a still significant growth rate, China doubled spending on R&D between 2008 and 2012, and this has made it a major driver of global R&D [OECD 2014, p. 5]. In order to be competitive, it is important for post-recession countries to capture the impact not only of government spending. The design of support must include business, universities and public research organizations, which are critical partners with government to enhance innovation potential. The linkages, write Makarov et al, between public and private are increasingly broad and dense, with increasing numbers of new actors and forms of design and delivery. It is crucial that with funds to address these developments not yet back to pre-crisis levels, and corporate margins still deteriorating, policy practitioners systematize and strengthen their evaluative procedures.

Makarov et al., below, present a Computable General Equilibrium (CGE) model of production in regional innovative space, using the Republic of Bashkortostan as an example. They then estimate scenarios in response to potential funding changes to show their impact on the size of the innovation space, which they define roughly as follows:

The common infrastructure for innovation is the set of organizations that create new knowledge, innovative enterprises that develop new technologies, products and services, and the institutional research community that influences the process. This set is a resource for innovation activity, or a common space of innovation. It consists of all the potential links between the community of organizations that create new knowledge and the innovative enterprises that commercialize it. The number these links is the size of the innovation space.

Combining new product and service technologies with the interaction space forms a design of quantitative indicators for a single region (constituting the Regional Innovation System, or RIS). The model estimates

a region's production capacity (in 2010, 2011, 2012) by looking at seven actors, including state and non-state institutions of higher education and other scientific organizations, innovative enterprises, other branches of the economy, consumers (households), the regulatory authority, the banking sector and the outside world. The scenarios include increasing and reducing funding (including by tax incentives) for science education and innovation and innovative enterprises in their impact on the annual rate of growth of regional product to 2030.

The results confirm the dependence of product and services innovation outcomes on the size of the innovation space. They suggest policy implications show a large impact of especially long-term investments. They also emphasize the potentially large role to be played by regional authorities in expanding the innovation space and by promoting interaction between the state, the firms, and the scientific and educational community over the long run.

References

- Abashkin V., Boyarov A., Kutsenko E. (2012) Klasternaya politika v Rossii: ot teorii k praktike [Cluster Policy in Russia: From Theory to Practice]. *Foresight-Russia*, vol. 6, no 3, pp. 16–27 (in Russian).
- Asheim B.T., Cooke P., Martin R. (2006) *The rise of the cluster concept in regional analysis and policy. Clusters and regional development: Critical reflections and explorations* (eds. B.T. Asheim, P. Cooke, R. Martin), London: Routledge, pp. 1–29.
- Cooke P. (2010) Regional innovation systems: Development opportunities from the 'green turn'. *Technology Analysis & Strategic Management*, vol. 22, no 7, pp. 831–844.
- Enright M.J. (2000) *Survey on the characterization of regional clusters: Initial results*, Hong Kong: University of Hong Kong.
- Lundvall B.A. (1999) *Technology policy in the learning economy. Innovation policy in a global economy* (eds. D. Archibugi, J. Howells, J. Michie), Cambridge: Cambridge University Press, pp. 19–34.
- Musterd S., Bontje M., Ostendorf W. (2006) The changing role of old and new urban centers: The case of the Amsterdam region. *Urban Geography*, vol. 27, no 4, pp. 360–387.
- Nelson R.R., Romer P.M. (1996) Science, economic growth, and public policy. *Challenge*, vol. 39, no 1, pp. 9–21.
- Tödtling F., Trippel M. (2005) One size fits all?: Towards a differentiated regional innovation policy approach. *Research Policy*, vol. 34, no 8, pp. 1203–1219.