

## REGIONAL INNOVATION POLICY: FROM THE DEVELOPMENT OF INNOVATION ACTIVITIES IN THE NON-METROPOLITAN REGIONS OF BALTIC SEA REGION TO THE INNOVATION POLICY MEMORANDUM

Vygintas Grinis, Ligita Valalyte

*Kaunas University of Technology, Institute of Europe*

### Abstract

This paper aims to answer the question “What changes are taking place in the field of innovation policy and why?” Generally the concept of the regional innovation policy is directly related to the actors of the regional innovation system, which are created with an explicit goal to develop, diffuse and utilise innovations (even though systems may be modified in such a direction by policy or strategy). Analyzing the regional innovation policy, it is essential to examine the issue of the regional innovation system, because the goals of the regional innovation policy is shaped by using initiatives of actors of regional innovation system, which aims to involve every actors of regional innovation system to build an open and dynamic ecosystem. The purpose of this paper is threefold: (1) to expose the characteristics of regional innovation policy; (2) to reveal the changes in the innovation system; (3) to expose the essence of concept of innovation policy memorandum of Baltic sea region and perspectives in the Kaunas region. The regional innovation system is changing by the regional innovation environment, which is focused on development of entrepreneurial, open and dynamic ecosystems. In summary, the key perspectives of Kaunas region is to adapt aspects of innovation policy in the memorandum and to improve access of actors of Kaunas Regional Innovation System to develop activities with international partners in the Baltic Sea region.

**Keywords:** Innovation policy, regional innovation system, regional innovation environment, non-metropolitan regions, Baltic sea region.

### Introduction

Globalisation and growing economic integration in Europe require the actors of innovation system to adjust to the new competitive conditions on the European and world market. Contemporary day economy is no longer based on raw materials or labour, but on knowledge. Innovations are the most important tool to build competitive advantage, thus, forming the basis for not only the prosperity of the companies but also of the entire region.

During the last two decades the innovation has become a key to sustainable growth and economic development at the region and country level, having impact on the country competitiveness in global economy (J. Fagerberg, 2006) and recognized by the country level policy makers (I. Savitskaya, 2009). Pure R&D is not anymore considered to be sufficient for economic growth – new ideas do not increase employment or income, however, new ideas commercialised (that is innovations) have economic and social impact. Country-wise decisions are modified and implemented in regions, where rather different approaches are revealed due to characteristics and variety of regional infrastructures around the country (I. Savitskaya, 2009).

The topic of *regional innovation policy* is analyzed by both, Lithuanian and foreign authors, widely. Innovation in society and more specifically innovation systems have been studied at various levels and with various scopes. These include e. g. national innovation systems (B. A. Lundvall, 1992; R. R. Nelson, 1993), regional innovation systems (P. Cooke et al., 1997, J. Howells, 1999), sector innovation systems (F. Malerba, 2002), innovative milieus (R. Camagni 1991), and technological systems (B. Carlsson, 1995). In the

core of innovation system literature is the view of innovation as an interactive and evolutionary process. Innovation is not seen as a single and separate event but as a process in which various organisational actors innovate in interaction (C. Edquist, 2005). A system of innovation is constituted by elements and relationships which interact in the production, diffusion and use of new knowledge (B. A. Lundvall 1992, p. 2). This knowledge is exploited for practical, including commercial use (P. Cooke et al., 1997, p. 478). Thus the knowledge created, diffused and used is not always in the form of commercial products or services but can have practical and social effects. More specifically knowledge may take the form of new ideas and concepts, new skills or competencies, or technological and organisational advances (G. Schienstock, T. Hämäläinen 2001, p. 78). An innovation system is a social and dynamic system (B. A. Lundvall 1992, p. 2). The system is social because a central activity in the system, learning, is a social activity. Innovation in the system involves positive feedback and reproduction which makes it a dynamic system. Thus innovation is not a linear but a recursive process and the system is recursive by nature (G. Schienstock, T. Hämäläinen 2001, p. 78).

An assumption can be made that analyzed topic is multidisciplinary, because it is an object of interest of the researchers of social and technical sciences. Rapid globalization processes and the creation of knowledge society have a new weight on information and innovations (especially technical). Technology progress, collaboration between science and business is one of the most significant factors on the economical growth at the moment. Scientific problem: what are the most important initiatives forming the

innovation policy in Kaunas region? *What perspectives could be supposed?* Novelty of the problem is revealed through the development of *innovation activities*, which determine structural changes, competitive advantage and economic growth in Kaunas region.\

Research **aim** – to highlight **characteristics of regional innovation policy** and innovation system in the Kaunas region, in purpose evaluating the perspectives.

Research **tasks**:

1. To expose the characteristics of regional innovation policy;
2. To reveal the changes in the innovation system;
3. To expose the essence of concept of innovation policy memorandum of Baltic Sea region and perspectives in the Kaunas region.

Research **methods**: analysis of the EU legal acts and specific literature, and contemplation of the perspectives of initiatives of the Kaunas region.

### The characteristics of regional innovation policy

Innovation policy is understood as an end-of-pipe activity, channelling pre-stage science and technology policy measures to market-ready solutions by a variety of information, transfer, networking or marketing activities (F. Meyer-Krahmer, 1989: 1). The public stimulation of collaboration between sciences, education institutes and enterprises for the sake of bringing technological or organizational solutions to a pre-market stage is a classical instrument of innovation policy. Since innovation does not only comprise technological aspects, but social and organizational inventions as well, innovation policy in a broader understanding aims at the creation of favourable conditions for innovative activities than only at the establishment of new technological paradigms or scientific breakthroughs (F. Meyer-Krahmer, 1997).

According to L. K. Williams (2001), when discussing the scope and impacts of regional innovation policy, it is necessary to raise the question about the level of “region” that defines the territorial responsibility of ‘regional’ policy makers. This is not only related to the common definitions of regions, e.g. in a way of an administrative, functional or homogenous region.

K. Ohmae (1995) notes, that a “region” could be a metropolitan area, a non - metropolitan area, a county or a federal state. Depending which region is meant, political powers, budgetary responsibilities, experiences and responsibilities vary to a great extent. Multi-level governance (A. Benz, B. Eberlein, 2001; B. Kohler-Koch 1996; G. Marks et al. 1996) describes the fact that due to the different policy levels dealing with the region as a platform for policy implementation, both top-down and bottom-up policy making processes shape “regional” policy so that political authority in regions is shared by a variety of supranational, national, interregional and intraregional authorities (E. Uyarra et al. 2002). It is needed to notice, that the two difficulties can be attributed to the following aspects:

- The changing role of regions in European science, technology and innovation policy, triggered by the ERA concept (H. Capron 2006; European Commission, 2001);
- The devolution of political powers to the regional level in formerly centralized countries by which regional

authorities are increasingly involved in various policy mechanisms (El Ouardighi et al., 2006).

- The emergence of new actors in regions which are both target groups of public policy measures and stakeholders by which they are able to intervene in policy making processes (S. Kuhlmann, 2001).

According to K. Koschatzky (2009) the new challenge for regional policy makers is that regional development is more and more affected by different types of policies and by different political levels. Although a real devolution of powers did not take place in all European countries so far, the decentralization of certain responsibilities is a major characteristic of recent developments. It can be observed that multi-actor and multi-level governance structures emerge across Europe. Usually, there is no dominant player in nations and regions, but the policy arena consists of a variety of political, corporate, social and scientific bodies (S. Kuhlmann, 2001: 961). Policy making does not take place in the form of top-down decision making, but is a result of networking and bargaining between different societal actors, interest coalitions and systems. It necessitates effective policy learning mechanisms which allow policy makers to learn from past experiences, ongoing implementation processes and the assessment of future trends (E. Uyarra, S. N. Haarich, 2002).

According to K. Koschatzky (2009), with regard to the level of ‘region’ for which conclusions about its policy making abilities should be drawn, different qualifications and objectives of its policy makers can be found. The lower the hierarchical level, the more regional policy makers are routed in routines of regional infrastructural policy and planning. Compared to “brick and mortar” infrastructural development, innovation policy displays other characteristics. The uncertainty by which innovation processes are characterised (C. Freeman, L. Soete, 1997) holds true for innovation policy as well. Contrary to the focus on infrastructure development of classical regional policy, it is by far more difficult to attain intended results in the promotion of an innovation friendly environment or by providing incentives for network formation. Results are not clearly visible within a short-term perspective and cannot be pre-sented to the public like the inauguration of a building or a road. Due to different approaches and the non-linearity of policy input and the intended output, a high degree of experimentalism in policy making is needed (K. Koschatzky 2009).

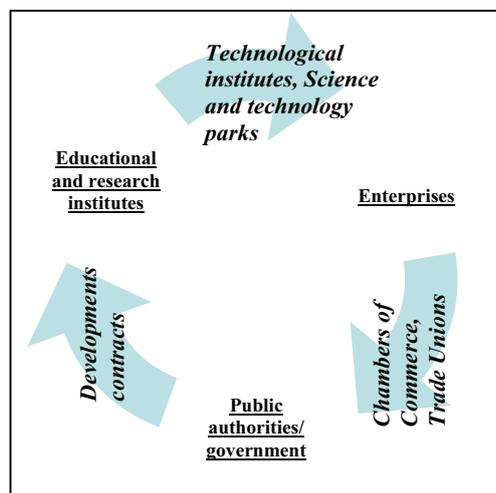
The other aspect is related to the specific character of regional innovation policies. Whether a regional innovation policy could be effective has to be debated. Many sceptical views about the effectiveness of this kind of policy are expressed in the literature (E. Malecki, 1997). If regional innovation policy is able to shape and influence regional development paths is a matter of tailor-made policy concepts taking the specific problem configurations into account, but also a matter of the local or regional context. The boundaries of the specific territory in which the measures should be effective must not coincide with overall innovation regimes and thus restrict intended impacts (J. G. Lambooy, R. A. Boschma, 2001).

### Changes in the innovation system

Science, technology and innovation policies are experiencing numerous developments and changes in

their orientation and design, which demand corresponding adaptation of policy evaluation methods and practices. According to H. Etzkowitz, L. Leydesdorff (2000), innovation systems are evolving towards more complex socially distributed structures of knowledge production activities, involving an increasing intertwining between science and technology, greater multidisciplinary and specialization in technological knowledge bases and a diversity of knowledge generating organizations. These changes require new forms of intervention, based on adaptability, policy learning and evolution, systemic coordination and the enhancement of firms & innovative capabilities. Moreover, there is a regained interest in sub-national (regional and local) levels of accumulation of innovative capabilities. Indeed, regional innovation policies are becoming more and more important, which in turn represents an important opportunity to be seized specially by less developed regions in narrowing the technology gap with more advanced ones (S. N. Haarich, E. Elvira, 2002).

Innovation and technology development are the result of a complex set of relationships among actors in the system, which includes enterprises, universities and government research institutes (H. Etzkowitz, L. Leydesdorff, 2000). For policy-makers, an understanding of the national innovation system can help identify leverage points for enhancing innovative performance and overall competitiveness. It can assist in pinpointing mismatches within the system, both among institutions and in relation to government policies, which can thwart technology development and innovation. Policies which seek to improve networking among the actors and institutions in the system and which aim at enhancing the innovative capacity of firms, particularly their ability to identify and absorb technologies, are most valuable in this context (OECD, 1997).



**Figure 1. The main actors of Kaunas Innovation system (L. Leydesdorff, H. Etzkowitz 1996; H. Etzkowitz, L. Leydesdorff 1997 modified by V. Grinis, L. Valalyte, 2011)**

According to A. P. Cornett (2006), within the framework of the above sketched triple helix, special attention has to be on dissemination and in particular the ‘broker function’ of the advisory system as a ‘go between’ between the companies and the knowledge sector. A similar role is played by chambers

and professional organizations (interest organizations) with regard to the business community and the public authorities on the national and regional/local level. Also within the third leg of the triple helix new modes of relations are appearing, i.e. development contract between universities and the government aiming to link funding to the fulfilment of negotiated performance benchmarks. With regard to the second driver addressed in this section it is important to stress that the above sketched system has to be modified to target the special needs of start-up companies or entrepreneurs (L. Soete, 2007).

A core element in the *regional policy aspect* is the role of innovation as an instrument in regional policy. Innovation is often considered to be one of the main drivers of regional growth. In this perspective, partnership between the private sector and the public sector is of crucial importance. As mentioned innovations can take place in existing firms or through entrepreneurial activities in independent start up’s or as entrepreneurship within the framework of an existing company (L. Dahlander, D. M. Gann, 2010).

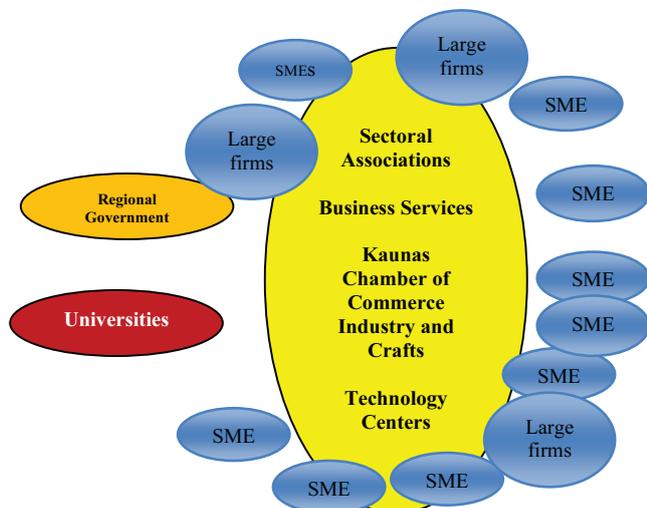
In both cases important actors and participants are enterprises, educational- and research institutions and public authorities’ as well advisory organizations, and have to be in the partnership. From an organizational point of view we have to distinguish between public sector and private sector institutions (B. S. Tether, A. Tajar, 2008). In a real world context the distinction is blurred, but if we include a legal dimension the core of the public sector is defined as ‘authoritative allocation of values or rule setting’. This is the lower right corner of the triple helix, see Figures 1. The base line of the figure represents a functional distinction between regulation and research and dissemination (education) (A. P. Cornett, 2006).

Ch. Oughton, M. Landabaso, K. Morgan (2004) identified the regional innovation paradox. The main cause of the regional innovation paradox is not primarily the availability of public funds in lagging regions. Its explanation lies in the nature of the regional innovation system and the institutional characteristics of these regions. In particular firms in lagging regions often articulate little demand for R&D and other innovation inputs and tend to lack a tradition of cooperation and trust either amongst themselves or with regional innovation actors, such as universities. Enterprises do not demand innovation ‘inputs’ or services. At the same time, the regional research and technological infrastructure is not embedded in the regional economy, and therefore suppliers of innovation services (technology, training/education, venture capital) are unable to identify the innovation needs and capabilities of firms in the regional economy. Thus, there is a lack of integration between regional supply (of innovation services) and demand for innovation (inputs/services).

Other words, the regional innovation system is fragmented (see Figure 2) and lacks either the necessary interfaces and co-operation mechanisms for the supply of innovation inputs to match firms’ demand, or the appropriate conditions for the exploitation of synergies and co-operation among regional innovation actors which could eventually fill gaps and avoid duplications in service provision (Ch. Oughton, M. Landabaso, K. Morgan, 2004).

Given low levels of investment in innovation inputs and the complementarity between private and public expenditure on innovation activities such as R&D, absorption of public

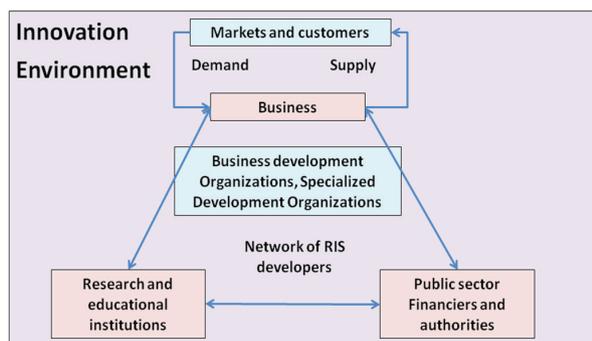
funds earmarked for R&D and innovation activity will also be low. As a result regions frequently get trapped in a vicious circle of little private sector demand and poor public funding supply which is difficult to break out of from within the system. The policy conclusions of the innovation systems approach suggest that what is required is institutional change (Lundvall, 1999).



**Figure 2. Regional innovation system is fragmented (Ch. Oughton, M. Landabaso, K. Morgan (2004) modified by V. Grinis, L. Valalyte, 2011)**

Until recently, the research, technology and innovation policies of European countries clearly reflected the profiles of their national (and regional) “innovation systems”, understood as the various “landscapes” of institutions, corporate actors and processes contributing to industrial and societal innovation (S. Kuhlmann, 2001).

The analysis of innovation systems and innovation policy-making aspects showed that the necessary changes to the rapidly changing market factors. The question is - what changes are needed in order to achieve the desired effect of a regional innovation system? M. Sotarauta, A. Eriksson, M. Caniels, P. Cooke, E. Uyarra, M. Sotarauta, J. Wallin (2010) and V. Harmaakorpi (2006) argue that, given its global market developments, there is a need to change the innovation system concept as changing expectations of actors from each other in this system. The solution is the transition from the regional innovation system to the regional innovation environment (see Figure 3).



**Figure 3. Regional innovation environment (L. Soete (2007) modified by V. Grinis, L. Valalyte, 2011)**

In summary, the two schemes (Figure 2 and Figure 3) could be concluded that innovation is understood as a process of combination of new and existing knowledge. This allows suggesting that the inter-reaction is important because innovative knowledge comes from various actors and institutions.

The main differences between regional innovation system and regional innovation environment could be highlight according to the following aspects:

Institutional RIS	Entrepreneurial RIE
Research and development	Dynamic; based on continuous cycle of emerging new businesses and ventures (and dying businesses)
Public to public relationships	VCs play a big role; risk capital fuelling the system
Universities as “knowledge machines”	Market based innovation services (e.g. entrepreneurial public bodies, private KIBS)
Technological orientation on innovation	Universities focusing on “big issues”, not to the problem solving
Aims at radical science based innovation; still typical incremental innovations	Orientation on business and market innovation; technology as enabler
Key organizations: science parks, technology centres (as brokers), intermediary organizations	Public interventions at the early stage of innovation processes (“development platforms”)
Metaphors: “Bureaucratic system”, “Machine”, “Top down”	Metaphors: “Ecosystem”, “jungle”, “bottom-up”

**The essence of concept of innovation policy memorandum of Baltic Sea region and perspectives in the Kaunas region**

Kaunas Regional Innovation policy is formulated according to the formed direction on the national level. One of the main guidelines for the formation of regional innovation policy in the Lithuanian is the Innovation Strategy 2010 – 2020. This strategy is central to the guidelines outlined in innovation policy making in order to build a creative society and create the conditions for the development of entrepreneurship and innovation. In accordance with the principles of the strategy the actors of Kaunas Regional Innovation System, implementing initiatives to contribute to that goal, carrying out activities designed to accelerate Lithuania’s integration into the global market (“Lithuania without borders”), to promote business networking and joining international innovation networks; to participate in the implementation of international initiatives (Strategy for the Baltic Sea Region, Knowledge and Innovation Communities created by European Institute of Innovation and Technology, activities of European Space Agency and others); to educate a creative and innovative society; to promote innovation oriented towards demand and consumers’ needs and to implement a systematic approach to innovation.

In view of the targets of the innovation system, the actors of Kaunas innovation system with foreign partners are implementing a project for the innovation policy making.

One of the major results of the project of Baltic Sea Region Programme is prepared for innovation policy decision makers the Memorandum of understanding, which is aimed at convergence of innovation policy in the Baltic Sea region. This memorandum is signed by project partners from 9 different regions in 6 member countries. The Memorandum of Understanding presents recommendations for decision makers at the regional, national and EU-level regarding the promotion of innovation and international collaboration. The primary objective of the Memorandum of Understanding (MoU) is to raise awareness of regional decision makers on the importance of regional innovation policy making for non-metropolitan areas and of the initiative, who are in the end responsible for supporting the development and competitiveness of their regions. The Memorandum provides decision makers with recommendations and guidelines for regional innovation policy and innovation support in their respective regions as well as in all non-metropolitan areas in the Baltic Sea region. The Memorandum (Memorandum of Understanding on the development of innovation activities in the non-metropolitan regions in the Baltic Sea Region, 2011) will guide international cooperation and innovation support activities and give recommendations on efficient innovation promotion:

1. *Developing an innovation policy framework that takes into account the needs of the non-metropolitan regions.* In national policies the roles of the metropolises on one hand and peripheral regions on the other hand have been emphasised. Other non-metropolitan regions with often strong industry base need to have their role strengthened and BSR cooperation provides a good platform for this.
2. *A long term commitment to secure a consistent and efficient innovation policy implementation is needed.* In many areas within BSR there is a need for a more consistent long-term innovation policy strategies in the regions, the tools and resources to implement suffer from short term funding and changing politics.
3. *Strengthening the regional dimension of innovation policy to cater for the region specific assets and opportunities.* There are many differences between regions in their industrial structure, R&D and technology provision, policy initiatives, business service provision, governance structures and the institutional framework. Many of these features frame the policy opportunities but also provide unique assets that can be capitalised on.
4. *Securing the future human capital – young people as professionals and entrepreneurs.* Many non-metropolitan regions suffer from demographic change and outmigration. Especially the ‘brain-drain’ of young talented people poses a challenge for future knowledge based growth in these regions. Through cooperation non-metropolitan regions aim to develop new measures to support young people is needed in innovation policy.
5. *Better support for new modes of innovation in the nonmetropolitan regions.* Innovation takes place in

many ways. New modes of innovation, such as open innovation, user and demand driven innovation, organisational innovation and social innovation have become increasingly important and they need new and enhanced regional innovation policy measures.

6. *Developing a more diverse funding model for innovation policy in the non-metropolitan regions.* Public resource constraints and changes in the funding instruments pose challenges in financing innovation policy activities in the non-metropolitan regions in the future. A joint activity is needed to find new and develop existing funding models.
7. *Targeting innovation in the traditionally strong sectors.* Most innovation strategies target fast growing high-tech sectors. However, not all non-metropolitan regions have strong capabilities in these sectors. At the same time there are many growth opportunities by better supporting innovation in the traditionally strong sectors in manufacturing and services. BSR cooperation provides a good platform to develop and test policy measures that target these areas.
8. *Focus on innovation in the public and non-governmental sectors.* Within the service sector, public services are a particularly huge area of economic activity in many regions. Fast growth, low innovation intensity and fiscal challenges provide not only opportunities but also a need to develop public services in becoming both more efficient and user friendly. A specific emphasis should be put to the development of e-government initiatives and e-services, where BSR co-operation provides good opportunities to develop and test new innovations.
9. *Increased long-term commitment for interregional innovation policy cooperation in the BSR.* BSR cooperation in innovation policy has proved to be useful for metropolitan and non-metropolitan regions alike. However, there are still many opportunities and advantages provided by cooperation, which have not yet been fully exploited. A long term commitment by the regional governments is needed to exploit these opportunities.

This memorandum sets out the essential elements of innovation policy-making, focusing on international cooperation in the Baltic Sea region increases. There are currently held the strategic plan of the Kaunas city 2012 - 2014, and the recommendations of this memorandum may be exercised in preparing this Strategic Plan.

One of the major perspectives on the basis of this memorandum is significantly enhanced international cooperation in the Baltic Sea region. Since this memorandum is considered as the basis for innovation policy in all regions of project partners (6 countries).

## Conclusions

- Global competition and technological development have led to a change in the success factors of developed economies. Innovation has become an important determinant of the competitiveness and success of firms, regions and nations. If regional innovation policy is able to shape and influence regional development paths is a matter and policy

concepts, and local (regional) context.

- Until recently, the research, technology and innovation policies of European countries clearly reflected the profiles of their national (and regional) “innovation systems”, understood as the various “landscapes” of institutions, corporate actors and processes contributing to industrial and societal innovation. This situation is changing and causing changes in the innovation system. The regional innovation system is changing by the regional innovation environment which is focused on development of ecosystems which are entrepreneurial, open and dynamic.
- The key perspectives of Kaunas region is to adapt aspects of innovation policy in the memorandum is a real opportunity for conditions to improve access Kaunas Regional Innovation System participants to develop activities with international partners in the Baltic Sea region. Key assumptions for this cooperation is to promote joint innovation policy in the Baltic Sea region in areas such as better support for new modes of innovation in the nonmetropolitan regions, development a more diverse funding model for innovation policy in the non-metropolitan regions, targeting innovation in the traditionally strong sectors etc.

## References

- Benz, A., Eberlein B. (2001). The Europeanization of regional policies: patterns of multi-level governance, *Journal of European Public Policy*, 6, 32-48. On-line: <http://www.informaworld.com/index/UABB1YETE3F09JMH.pdf>
- Camagni R. (1991). Innovation networks: spatial perspectives. On-line: <http://www.lavoisier.fr/livre/notice.asp?id=RS AW36A2R2AOWL>
- Capron, H. (2006). An integrated evaluation scheme of innovation systems from an institutional perspective. On-line: <http://dev.ulb.ac.be/dulbea/documents/1038.pdf>
- Carlsson B. (1995). Technological systems and economic performance: the case of factory automation. On-line: [http://www.google.com/books?hl=lt&lr=&id=0dQuMK0MVIIC&oi=fnd&pg=PR7&dq=Carlsson,+1995&ots=v4qCE8g3wq&sig=IJHXQlb\\_cuQmQ9v-gb89rZO-Bxk](http://www.google.com/books?hl=lt&lr=&id=0dQuMK0MVIIC&oi=fnd&pg=PR7&dq=Carlsson,+1995&ots=v4qCE8g3wq&sig=IJHXQlb_cuQmQ9v-gb89rZO-Bxk)
- Cooke P. (1992). Regional Innovation Systems: Competitive Regulation in the New Europe, *Geoforum*, 23, 365-382. On-line: <http://www.sciencedirect.com/science/article/pii/0016718592900489>
- Cooke P. (1992). Regional Innovation Systems: Competitive Regulation in the New Europe, *Geoforum*, 23, 365-382. On-line: <http://www.sciencedirect.com/science/article/pii/0016718592900489>
- Cornett A. P. (2006). Regional Growth Policy in Denmark - An Assessment of the Role of Innovation As an Instrument in Regional Policy// ERSA conference paper. On-line: <http://www-sre.wu-wien.ac.at/ersa/ersaconfs/ersa06/papers/102.pdf>
- Dahlander L., Gann D. M. (2010). How open is innovation? // *Research Policy*. On-line: <http://linkinghub.elsevier.com/retrieve/pii/S0048733310000272>
- Edquist C. (2005). Systems of innovation. On-line: [http://www.google.com/s?hl=lt&lr=&id=AII\\_7IMoC&oi=fnd&pg=PA181&dq=+4.%09Edquist,+2005&ots=cDscEpa4s&sig=1ngt2MO5pUoPcQi\\_1LsZQiJRk-E](http://www.google.com/s?hl=lt&lr=&id=AII_7IMoC&oi=fnd&pg=PA181&dq=+4.%09Edquist,+2005&ots=cDscEpa4s&sig=1ngt2MO5pUoPcQi_1LsZQiJRk-E)
- El Ouardighi J., Héraud J.A., Kahn R. (2006). Politique régionale européenne et rôle des collectivités: L'exemple des politiques de recherche et d'innovation. In: Capron, H. (ed.): *Politique régionale européenne*. Bruxelles: De Boeck, 245-273. On-line: <http://dialnet.unirioja.es/servlet/libro?codigo=12275>
- Etzkowitz H., Leydesdorff L. (1997). Universities and the global knowledge economy: a triple helix of university-industry-government. On-line: <http://en.scientificcommons.org/6993168>
- European Commission (2001). Future governance of innovation policy in Europe — three scenarios. On-line: <http://xcsc.xoc.uam.mx/apymes/webftp/documentos/biblioteca/Future%20governance%20of%20innovation%20policy.pdf>
- Fagerberg J. (2006). The Oxford handbook of innovation. On-line: <http://www.google.com/books?hl=lt&lr=&id=Y2LzsML20ngC&oi=fnd&pg=PR9&dq=Fagerberg,+2006&ots=pnnSQf9UV2&sig=ISSfjd67OcEMTv7sH34YDzCHGmQ>
- Freeman C., Soete L. (1997). The Economics of Industrial Innovation. Third Edition. London: Pinter Publishers. On-line: [http://www.google.com/books?hl=lt&lr=&id=XTxkwzP1xu0C&oi=fnd&pg=PR7&dq=10.%09Freeman+C.,+Soete+L.+1997&ots=a6N4rVQ11U&sig=tJ2\\_Mnmz6MZaM\\_dLskqYXXJhXAE](http://www.google.com/books?hl=lt&lr=&id=XTxkwzP1xu0C&oi=fnd&pg=PR7&dq=10.%09Freeman+C.,+Soete+L.+1997&ots=a6N4rVQ11U&sig=tJ2_Mnmz6MZaM_dLskqYXXJhXAE)
- Haarich S. N., Elvira E. (2002). Evaluation, Foresight and Participation as new Elements for Regional Innovation Policy Practice: Lessons from the Regional Innovation Strategies (RIS)// ERSA 2002 Conference Dortmund. On-line: <http://www-sre.wu-wien.ac.at/ersa/ersaconfs/ersa02/cd-rom/papers/099.pdf>
- Harmaakorpi V. (2006). Regional Development Platform Method (RDPM) as a Tool for regional innovation policy. *European Planning Studies*, Volume 14, Number 8, September 2006, pp. 1085-1104(20). On-line: <http://www.ingentaconnect.com/content/routledg/ceps/2006/00000014/00000008/art00005>
- Howells J. (1999). Innovation policy in a global economy. On-line: [http://www.google.com/books?hl=lt&lr=&id=QDV4sNy5rTUC&oi=fnd&pg=PR9&dq=%09Howells,+1999&ots=H8\\_VOpgYDG&sig=QRjBMSt5X63M6VRH6I9SC0Mr1YI,s](http://www.google.com/books?hl=lt&lr=&id=QDV4sNy5rTUC&oi=fnd&pg=PR9&dq=%09Howells,+1999&ots=H8_VOpgYDG&sig=QRjBMSt5X63M6VRH6I9SC0Mr1YI,s)
- Kohler-Koch B. (1996). The strength of weakness: the transformation of governance in the EU. In: Gustavsson, S./Lewin, L. (eds.). *The Future of the Nation State*. Stockholm: Nerius&Santerus, 169-210. On-line: <http://www.informaworld.com/index/783172910.pdf>
- Koschatzky K. (2009). The uncertainty in regional innovation policy: some ration-ales and tools for learning in policy making. On-line: [http://observgo.quebec.ca/observgo/fichiers/72763\\_GLR-5.pdf](http://observgo.quebec.ca/observgo/fichiers/72763_GLR-5.pdf)
- Kuhlmann S. (2001). Future governance of innovation policy in Europe - three scenarios, *Research Policy*, 30, 953-

976. On-line: <http://linkinghub.elsevier.com/retrieve/pii/S0048733300001670>
- Lambooy J.G., Boschma, R.A. (2001). Evolutionary economics and regional policy, *The Annals of Regional Science*, 35, 113-131. On-line: <http://www.springerlink.com/index/ehuvn5qc4g3xh0t4.pdf>
- Leydesdorff L., Etzkowitz H. (1996). Emergence of a triple helix of university-industry-government relations. On-line: <http://dare.uva.nl/lt/record/16759>
- Lietuvos inovacijų 2010–2020 m. strategija. Lietuvos Respublikos Vyriausybės 2010 m. vasario 17 d. nutarimu Nr. 163 patvirtinta. On-line: [www.ukmin.lt/lt/strategija/.../strategija/2010-2020\\_ino\\_strategija.pdf](http://www.ukmin.lt/lt/strategija/.../strategija/2010-2020_ino_strategija.pdf)
- Lundvall B. A. (1999). The globalising learning economy: Implications for innovation policy// Office for Official Publications of the European. On-line: <http://ftp.cordis.lu/pub/tser/docs/globeco.doc>
- Lundvall B.Å. (ed.) (1992). *National System of Innovation. Towards a Theory of Innovation and Interactive Learning*. London: Pinter Publishers.
- Malecki E. (1997).: Entrepreneurs, Networks and Economic Development: A Review of Recent Research. In: Katz, J. (ed.): *Advances in Entrepreneurship, Firm Emergence and Growth*. Greenwich: JAI Press, 57-118. On-line: <http://www.getcited.org/pub/100384754>
- Malerba F. (2002). Sectoral systems of innovation and production// *Research policy*. On-line: <http://linkinghub.elsevier.com/retrieve/pii/S0048733301001391>
- Marks G., Hooghe L., Blank K. (1996). European integration from the 1980s: statecentric versus multi-level governance, *Journal of Common Market Studies*, 34, 341- 378. On-line: <http://onlinelibrary.wiley.com/doi/10.1111/j.1468-5965.1996.tb00577.x/abstract>
- Memorandum of Understanding on the development of innovation activities in the non-metropolitan regions in the Baltic Sea Region, 2011.
- Meyer-Krahmer F. (1989). Evaluations of innovation programmes in selected European countries// *Research Policy*. On-line: <http://ideas.repec.org/a/eee/respol/v18y1989i6p313-332.html>
- Nelson, R.R. (ed.) (1993): *National Innovation Systems. A Comparative Analysis*. New York: Oxford University Press.
- OECD. (1997). *National innovation system*. On-line: [www.oecd.org/dataoecd/35/56/2101733.pdf](http://www.oecd.org/dataoecd/35/56/2101733.pdf)
- Ohmae K. (1995). *The end of the nation state: the rise of regional economics*. New York: The Free Press. On-line: [http://www.lgeri.com/uploadFiles/ko/pdf/pub/%EA%B5%AD%EA%B0%80%EC%9D%98\\_%EC%A2%85%EB%A7%90\\_20040304173918.pdf](http://www.lgeri.com/uploadFiles/ko/pdf/pub/%EA%B5%AD%EA%B0%80%EC%9D%98_%EC%A2%85%EB%A7%90_20040304173918.pdf)
- Oughton Ch., Landabaso M., Morgan K. (2004). *Learning Regions in Europe: Theory, Policy, and Practice through the RIS Experience*. On-line: <http://www.deu.edu.tr/userweb/sedef.akgungor/dosyalar/learning%20region2.pdf>
- Savitskaya I. (2009). *Towards open innovation in regional innovation system: case St. Petersburg*. On-line: [http://kouvola.lut.fi/file/id1703/files/attachment/Research\\_report\\_2141\\_Savitskaya.pdf](http://kouvola.lut.fi/file/id1703/files/attachment/Research_report_2141_Savitskaya.pdf)
- Schienstock G., Hämäläinen T. (2001). Transformation of the Finnish innovation system: a network approach. On-line: [http://estrategiadelisboa.com/document/transformation\\_finnish\\_innovation\\_system.pdf](http://estrategiadelisboa.com/document/transformation_finnish_innovation_system.pdf)
- Soete L. (2007). From industrial to innovation policy// *Journal of industry, competition and trade*. On-line: <http://www.springerlink.com/content/w46p5127g45666t8/>
- Sotarauta M., Eriksson A., Caniels M., Cooke P., Uyarra E., Sotarauta M., Wallin J. (2010). *Regional innovation policy in transition - Reflections on the change process in the Skåne region// Vinnova Report*. On-line: [http://web.me.com/markku.sotarauta/tiede/sotarauta\\_homepage\\_e.html](http://web.me.com/markku.sotarauta/tiede/sotarauta_homepage_e.html)
- Tether B. S., Tajar A. Beyond industry–university links: Sourcing knowledge for innovation from consultants, private research organisations and the public science-base // *Research Policy*, Volume 37, Issue 9, October 2008, Pages 1653-1654
- Uyarra E., Haarich S.N. (2002). Evaluation, Foresight and Participation as new Elements for Regional Innovation Policy Practice: Lessons from the Regional Innovation Strategies (RIS), Paper presented at the ERSA 2002 Conference Dortmund. Dortmund. On-line: <http://www.sre.wu-wien.ac.at/ersa/ersaconfs/ersa02/cd-rom/papers/099.pdf>
- Williams LK. (2001). *The Baltic Sea Region: Forms and Functions of Regional Cooperation*. On-line: [http://www2.hu-berlin.de/ostseekolleg/virtual/online\\_pdf/paper2.pdf](http://www2.hu-berlin.de/ostseekolleg/virtual/online_pdf/paper2.pdf)

The article has been reviewed.

Received in April, 2011; accepted in June, 2011.